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Northampton County Tidal Marsh Inventory

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NORTHAMPTON COUNTY TIDAL MARSH INVENTORY

Special Report No.139 in Applied Marine Science and Ocean Engineering

Kenneth A. Moore



VIRGINIA INSTITUTE OF MARINE SCIENCE
Gloucester Point, Virginia 23062

DECEMBER 1977

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Kenneth A. Moore



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VIRGINIA INSTITUTE OF MARINE SCIENCE
Gloucester Point, Virginia 23062

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DECEMBER 1977

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NORTHAMPTON COUNTY
TIDAL MARSH INVENTORY

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INTRODUCTION

This publication is the fourteenth in a series of marsh inventory reports compiled by the Department of Wetlands Research and Environmental Impact Assessment, Virginia Institute of Marine Science. The thirteen reports that have been published are:

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

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 wetland boards, cities, counties, planning districts and other local, state and federal agencies as well as the general public and private industry. This document, along with its companion, the Shoreline Situation Report, Northampton County, Va., 1974, VIMS SRAMSOE No. 54 is an essential document for those who are participating in the Commonwealth's ongoing Coastal Zone Management Planning Program.

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. It is our desire that these guidelines and inventory report will be useful to those concerned with conserving this valuable resource.

Northampton County contains some of the most extensive wetlands areas found within the State of Virginia. Located at the southern half of Virginia's Eastern Shore peninsula it contains 36,625 acres of tidal marshes. Of this total 96 per cent, or 35,220 acres, are located along the county's eastern side, stretching in vast stands between the numerous barrier islands and the mainland shoreline. Only 1405 acres are found along the county's many miles of western shoreline that border the Chesapeake Bay and the wide, tidal creeks which drain into the Bay.

Because the wetlands of Northampton County can easily be divided into two distinctly different physiographic provinces, this report is organized into two parts. Part 1 includes Sections I through VIII. It describes all those wetlands located along the county's eastern shoreline, between the

barrier islands and the mainland and between the Accomack County line to the north and Fisherman's Island to the south. Part 2 includes Sections IX through XIV and describes the many fringe and pocket marsh areas along the western shoreline. It includes the numerous tidal creeks which drain into the Chesapeake Bay as well those few marsh areas found along the Bay shoreline.

Because the marshes and bays found along Northampton County's ocean side are so large, the map plates for Part 1 have been scaled at 1:42,000 to facilitate their presentation. In contrast, the shoreline along the Bay side is presented at a scale of 1:24,000 to allow for the greater detail needed to display the many small marshes found there.

The extensive marsh areas found along Northampton County oceanside coastline are characterized by vast stands of salt-marsh cordgrass separated by large, shallow lagoons. Although the marshes encompass large areas, they are a relatively recent feature by geological standards. In many areas the saltmarsh cordgrass peat forms only a thin veneer over the underlying sand deposits. Although many of the marsh areas are up to 4000 years old, many may be less than 1000 years old, while some areas, such as those found behind Smith Island (Section XIII), are probably less than 10 years old.

A number of marshes lying landward of Northampton County's line of barrier islands are actually formed on the remnants of ancient barrier islands, inlet sand deposits or dune ridges. The marsh areas surrounding Mockhorn Island (Section V) are an excellent sample, as are those found along a chain of islands known as Gull Marsh (Section IV).

The history of Virginia's Eastern Shore barrier islands, marshes and lagoons is one marked by long-term advance and retreat of the sea. At the present time sea level is slowly rising in relation to the land and many of Northampton County's barrier islands are being forced westward. Every new ocean storm washes over sections of these islands, transporting sand from the beach zones back onto the adjacent marsh areas. Sometimes marsh plants recolonize these areas, while other times the deposits will be of sufficient elevation to permit an invasion by beach and upland species. The net result would then be a westward movement of the islands and loss of marsh.

There are, however, many areas that are accreting marsh. Behind Smith Island, (Section VII) a change in drainage patterns due to the closing of two small inlets has resulted in the rapid spreading of saltmarsh cordgrass onto adjacent areas. There are also areas of new growth noted at the north end of Mockhorn Island (Section V) and along Magothy Bay (Section V).

The vast majority of the marsh areas found along Northampton County's ocean side is dominated by saltmarsh cordgrass (Type I) wetlands. Areas of high marsh (Type II) are for the most part only found along the modern, upland shoreline or along the back sides of the barrier islands. There are virtually no tidal freshwater marsh species to be found in this section of the county.

The extensive saltmarsh cordgrass wetlands (Type I), of the ocean side may be divided into three distinct growth forms: tall, intermediate and short. Tall-form saltmarsh cordgrass, which at full growth stands 4-6 feet in height, is generally found along the many drainage channels or throughout extensive areas of low elevation where it can receive good tidal flushing. Intermediate-form saltmarsh cordgrass also is found in areas of low elevation but attains heights of only 3-4 feet. Short-form saltmarsh cordgrass on the other hand, is generally found only in interior sections of marsh where the surface elevation is at or near mean high water. Poor flushing rates, combined with inadequate drainage and high soil salinities reduce this growth form to one foot or less in height. Associated with these zones of short-form cordgrass several species of saltwort are usually found, and in areas where salinities are greatest only the saltwort exists.

The marsh areas found along Northampton County's western, Bayside shoreline are again dominated by saltmarsh cordgrass. However, as compared to the ocean side, lower salinities combined with other factors allow for greater percentage abundance of species such as: saltmeadow grasses, saltbushes, black needlerush, cattails and big cordgrass. Both saltwort and saltmarsh cordgrass are found to comprise lower percentages of the Bayside marshes than oceanside marshes. In addition, the saltmarsh cordgrass is virtually all tall or intermediate in growth form.

The majority of the marsh areas found along this western shoreline are of small fringe and pocket-type marshes. Although small, they nevertheless help to protect the shoreline from erosion as well as filter upland runoff. Although abundant within the large creek systems, there are generally few marshes found along the Chesapeake Bay shoreline between the creeks. This type of shoreline consists largely of sand beach with adjacent uplands that are undercut during storm periods. From Old Plantation (Section XIV), south to Fisherman's Island (Section VIII) there are no tidal marshes present, therefore this section of shoreline is not included in this inventory.

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 estimated of coverage based on visual field inspections of every marsh. In some instances, these percentages are subject to seasonal bias.

Field data were collected from June through September 1975 with some areas visited during the summer of 1976. Most areas, especially along the barrier islands, have been updated using aerial photography and data are accurate to August 1977.

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) may be exaggerated and not indicated to scale. Information such as individual marsh acreage, plant species percentage and acreage, marsh type 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 plant 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.

MARSH TYPES AND EVALUATION

For a better understanding of what is meant by marsh types, some background information is required. The personnel of the Wetland Research Section had 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 homogeneously 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.

"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.

"3. Erosion buffer. Erosion is a common 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.

"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..."

"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.

MARSH TYPES AND THEIR ENVIRONMENT CONTRIBUTIONS

(Edited from Guidelines for Activities Affecting Virginia Wetlands)

"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."

Type I Saltmarsh Cordgrass Community

- 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

- 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 water material.

Type III Black Needlerush Community

- 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 Saltbush Community

- 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 Big Cordgrass Community

- 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 Cattail Community

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

Type VII Arrow Arum-Pickereel Weed Community

- 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

- 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

- 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

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

Type XI Freshwater Mixed Community

- 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.

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 values 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 or 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 the Northampton County wetlands, the Wetlands Act of 1972, marsh types and their evaluation and other related subjects, the following publications are recommended:

Coastal Wetlands of Virginia
Interim Report No. 3
Guidelines for Activities
Affecting Virginia's Wetlands
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

Coastal Wetlands of Virginia
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

Coastal Wetlands of Virginia Interim Report
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

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

Wetlands Guidelines
Virginia Marine Resources Commission
2401 West Avenue
Newport News, Virginia 23607

Tidal Wetland Plants of Virginia
Educational Series No. 19
Gene M. Silberhorn, illustrated by
Mary Warriner, Aug. 1976
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

The Virginia Coast Reserve Study
R. D. Dueser, M. A. Graham, G. J. Hennessey,
C. McCaffrey, A. W. Nierdoroda, T. E. Rice,
B. Williams. The Nature Conservancy
Arlington, Virginia 22209

MARSH PLANTS

Common and Scientific Names as described in the DATA TABLES

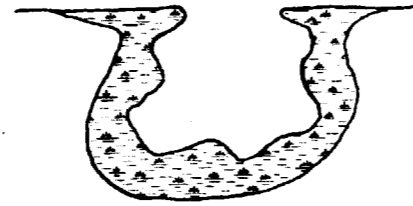
Big Cordgrass	<u>Spartina cynosuroides</u> (L.) Roth	Saltmeadow Grasses	
Black Needlerush	<u>Juncus roemerianus</u> Scheele	Saltgrass	<u>Distichlis spicata</u> (L.) Greene
Cattails		Saltmeadow Hay	<u>Spartina patens</u> (Aithon.) Muhl.
Common	<u>Typha latifolia</u> L.	Saltwort	<u>Salicornia</u> spp.
Narrow-leaved	<u>Typha angustifolia</u> L.	Sea Lavender	<u>Limonium carolinianum</u> (Walter) Britton.
Marsh-fleabane	<u>Pluchea purpurascens</u> (Swartz) DC.	Sea Oxeye	<u>Borrichia frutescens</u> (L.) DC.
Marsh Hibiscus	<u>Hibiscus moscheutos</u> L.	Suaeda*	<u>Suaeda linearis</u> (Ell.) Moq.
Marsh Mallow*	<u>Kosteletskya virginica</u> (L.) Presl.	Water-hemp*	<u>Amaranthus cannabina</u> (L.) J. D. Sauer
Olney Threesquare	<u>Scirpus olneyi</u> Gray		
Reed Grass	<u>Phragmites australis</u> (CAV.) Trinex Steud.		
Saltbushes			
Groundsel Tree	<u>Baccharis halimifolia</u> L.		
Marsh Elder	<u>Iva frutescens</u> L.		
Saltmarsh Aster*	<u>Aster tenuifolius</u> L.		
Saltmarsh Bulrush	<u>Scirpus robustus</u> Pursh.		
Saltmarsh Cordgrass	<u>Spartina alterniflora</u> Loisel.		
Saltmarsh Fimbristylis*	<u>Fimbristylis spadicea</u> (L.) Vahl.		

*Marsh Species Not Included in 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.



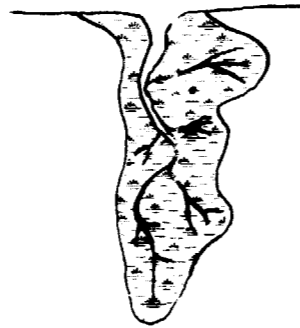
fringe marsh

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



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.



high marsh

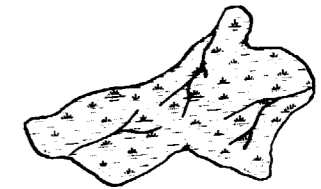
the marsh surface is at an elevation of mean high water or above; it is usually inundated less than twice daily by tidal action.

low marsh

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

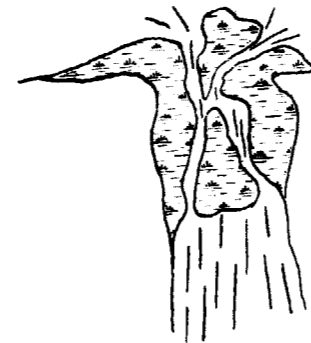
marsh island

an isolated marsh surrounded on all sides by open water; interior portions of the marsh may contain trees scattered at highest elevations.



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.



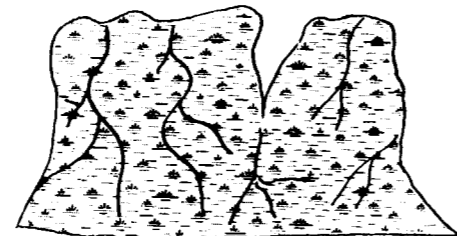
pocket marsh

a marsh contained within a small, essentially semi-circular area on a shoreline.



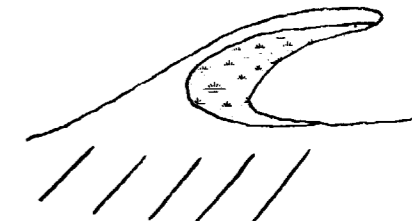
extensive marsh

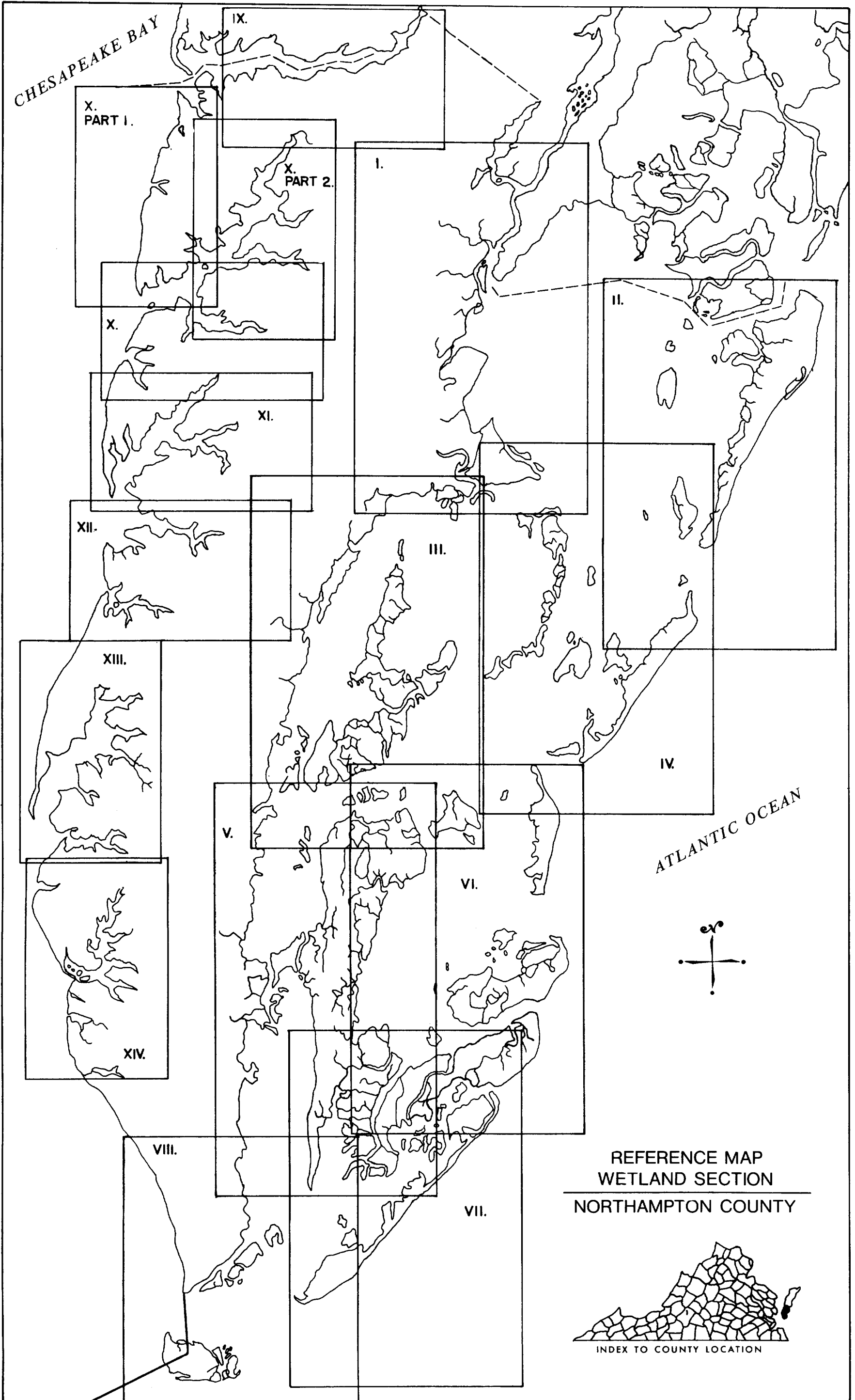
a large marsh where the length and depth or width are roughly comparable; most extensive marshes are drained by many tidal channels and creeks which have little freshwater input.



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.





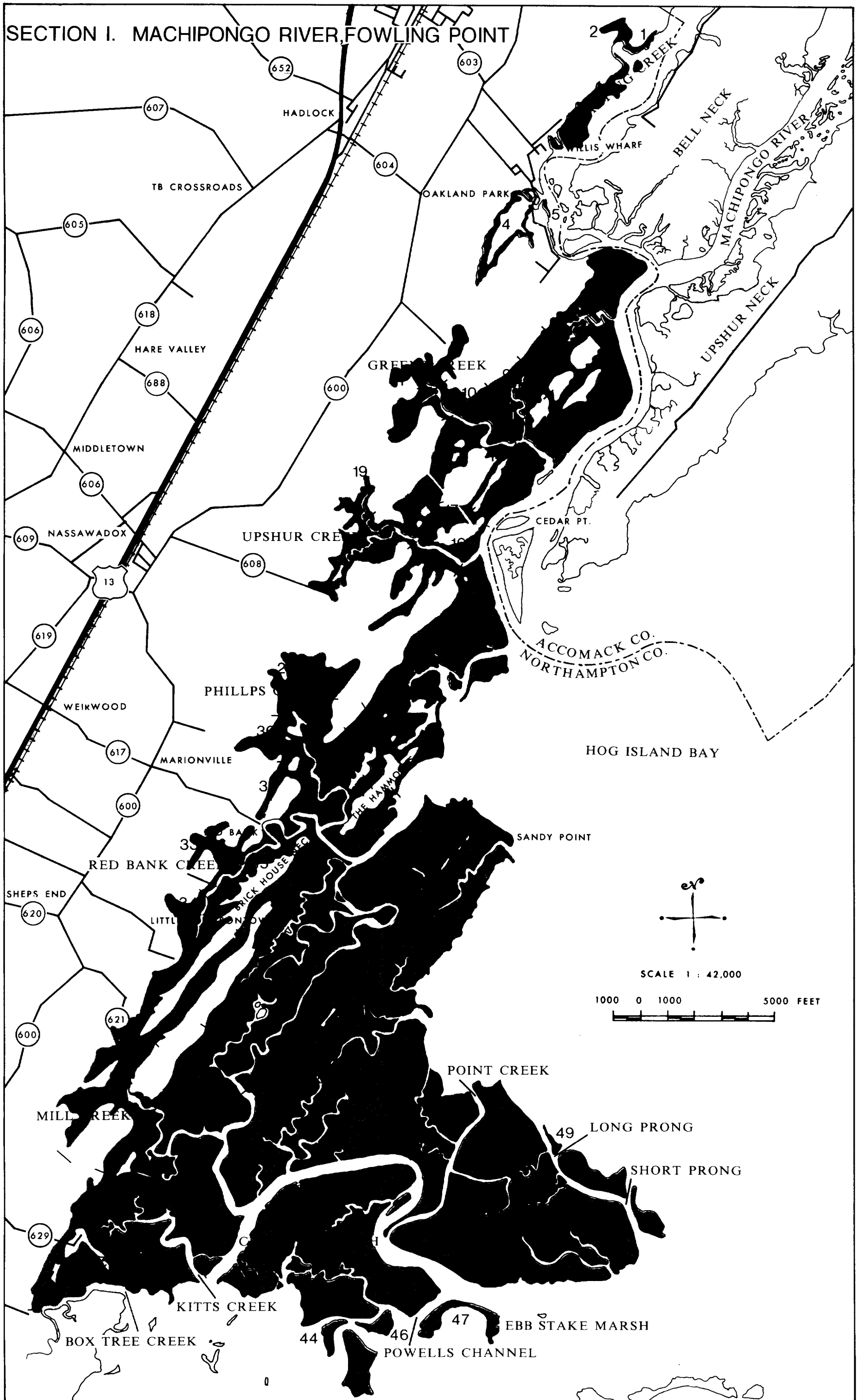
Section I. Machipongo River, Fowling Point

This section of Northampton County shoreline includes those marsh areas which are found bordering the uplands to the west of Hog Island Bay and continuing along one side of the Machipongo River and Parting Creek. The most extensive of these marsh areas are found in the regions of Fowling Point, Short Prong Marsh and Crabbing Marsh (#38, 43, 48). These marshes are typical of most of the other wetland areas located along the ocean side of Northampton County. Saltmarsh cordgrass (Type I) dominates throughout and characteristically reaches its tallest growth form along the channel edges. Proceeding to interior sections of higher elevation within the marshes the cordgrass is found to be greatly reduced in height and is mixed with saltwort (Type X), a species tolerant of the higher soil salinities associated with these less well drained areas.

Those marsh areas located in the vicinity of Castle Ridge, Brick House Neck or the Hammocks (#24, 25, 26, 27, 28, 32, 34, 35, 36, 37, 38, 40) are formed along low ridges which parallel the modern, upland shoreline. These narrow ridges of low elevation are actually the remnants of an ancient shoreline that existed when sea level stood at a much different level than is found today. They are evident along most of Northampton County's eastern, upland edge continuing south to Cape Charles (Sections III, V, VIII). The characteristic vegetation of these drowned land forms consists of cedar, pine and other upland species at highest elevations. These upland areas then grade to high marsh with abundant sea oxeye, saltbushes and saltmeadow grasses (Type II). Zones of lowest elevation near the drainage creeks are primarily vegetated with saltmarsh cordgrass (Type I).

In addition to the extensive low marsh areas and high marsh ridge and hummock formations, this section of Northampton County shoreline includes many creek marshes which extend well into the uplands. Many of these marsh areas, such as those found at the head of Phillip's Creek (#29), contain both saltmarsh cordgrass as well as many high marsh species such as: black needlerush, saltmeadow grasses, saltbushes, and saltwort. Many also contain scattered stands of Olney threesquare and cattails.

SECTION I. MACHIPONGO RIVER, FOWLING POINT



Section I. Machipongo River, Fowling Point

#	Marsh Location	Total Acres		Saltmarsh	Saltmeadow	Saltbushes	Black	Saltwort	Cattails	Sea	Sea	Saltmarsh	Big	Marsh	Marsh	Water	Saltmarsh	Saltmarsh	Olney	Marsh	Sea	Reed	Suaeda	Observations	Marsh Type
				Cordgrass	Grasses		Needlerush		Oxeye	Lavender	Bulrush	Cordgrass	Hibiscus	Mallow	Hemp	Aster	Fimbristylis	Threesquare	Fleabane	Rocket	Grass				
1	Parting Creek	2.1	%	85	10	5		-		-														Marsh fringe; saltmarsh cordgrass grades back to zone of saltmeadow grasses then to saltbushes.	I
			acres	1.8	0.2	0.1		-		-															
2	Parting Creek	11.2	%	75	10	5	-	10		-														Pocket marsh; lower portion dominated by saltmarsh cordgrass; grades upstream to high marsh areas.	I
			acres	8.4	1.1	0.6	-	1.1		-															
3	Parting Creek	72.0	%	97	2	1		-																Recently established wide fringing marsh dominated by tall form saltmarsh cordgrass; Saltbushes and meadow fringe along uplands.	I
			acres	69.8	1.4	0.7		-																	
4	Willis Wharf	43.5	%	90	2	5		3		-														Large shallow tidal cove; recently established tall and medium form saltmarsh cordgrass in wide fringe around shoreline; saltbushes and meadow grasses in zone along upland.	I
			acres	39.2	0.9	2.2		1.3		-															
5	Parting Creek	2.9	%	60	5	-		35		-														Saltmarsh cordgrass dominated marsh fringe; cordgrass grades back to high marsh areas of saltwort.	I
			acres	1.7	0.1	-		1.0		-															
6	Machipongo River	154.9	%	90	3	2		5		-														Extensive marsh section dominated by saltmarsh cordgrass; tall form predominates along creek channels while short form is found in less well drained areas; saltbushes and meadow fringe along uplands.	I
			acres	139.4	4.6	3.1		7.7		-															
7	Machipongo River	40.9	%	60	5	-		35		-	-													Upstream section of extensive marsh area; mostly short form saltmarsh cordgrass with large areas of saltwort bordering upland areas.	I
			acres	24.5	2.0	-		14.3		-	-														
8	Machipongo River	174.8	%	95	-	-		5		-														Extensive marsh area extends back between ridges of upland; short form cordgrass dominates in zone along river and between upland areas; remainder mostly intermediate form saltmarsh cordgrass.	I
			acres	166.1	-	-		8.7		-															

Section I. Machipongo River, Fowling Point
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
9	Greens Creek	90.3	%	85	5	-		10		-	-													Creek marsh section; extends along creek branch and between upland areas; mostly short and intermediate form cordgrass; meadow and saltwort along uplands.	I
			acres	76.8	4.5	-		9.0		-	-														
10	Greens Creek	45.5	%	95	-	-		5		-														Creek marsh section extends from creek back to uplands; mostly intermediate form saltmarsh cordgrass; areas of saltwort along upland edge.	I
			acres	43.2	-	-		2.3		-															
11	Greens Creek	42.0	%	50	25	10	-	5	-	-	-													Creek marsh formed along several branches at head of creek; cordgrass along channels grades to high marsh of saltmeadow and saltbushes.	I
			acres	25.2	10.5	4.2	-	2.1	-	-	-														
12	Greens Creek	36.6	%	80	5	-	-	15		-														Pocket marsh at head of creek branch; upstream area dominated by large zone of saltwort with saltgrass; remainder mostly intermediate and short form saltmarsh cordgrass.	I
			acres	29.3	1.8	-	-	5.5		-															
13	Greens Creek	55.9	%	60	5	5		30		-														Pocket marsh area extends from creek back between upland areas; large patches of saltwort dominate interior sections; meadow and saltbushes along uplands; remainder is saltmarsh cordgrass.	I
			acres	33.5	2.8	2.8		16.8		-															
14	Greens Creek	25.9	%	80	5	-		15		-														Narrow pocket marsh extends between upland ridges; grades from saltmarsh cordgrass back to saltwort and meadow grasses.	I
			acres	20.7	1.3	-		3.9		-															
15	Machipongo River	79.9	%	90	-	-		10		-														Extensive marsh section of mostly intermediate form saltmarsh cordgrass; areas of short form cordgrass bordering edge of river; saltwort in interior sections.	I
			acres	71.9	-	-		8.0		-															
16	Upshur Creek	16.6	%	80	5	-		15		-														Creek marsh section; dominated by intermediate form saltmarsh cordgrass; large areas of saltwort and saltgrass along uplands.	I
			acres	13.3	0.8	-		2.5		-															

Section I. Machipongo River, Fowling Point
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
17	Upshur Creek	33.6	%	90	-	-		10		-														Creek marsh branch; surrounded on three sides by areas of upland and narrow dirt road; mostly short and intermediate form saltmarsh cordgrass with patches of saltwort.	I
			acres	30.2	-	-		3.4		-															
18	Upshur Creek	57.4	%	80	5	-	-	15		-														Creek marsh section; saltmarsh cordgrass predominates throughout with saltmeadow grasses along uplands; large patches of saltwort.	I
			acres	45.9	2.9	-	-	8.6		-															
19	Upshur Creek	20.1	%	75	10	5	-	10	-	-	-													Pocket marsh area at head of creek branch, saltmarsh cordgrass predominates near creek channels with meadow grasses in pockets along uplands.	I
			acres	15.1	2.0	1.0	-	2.0	-	-	-														
20	Upshur Creek	67.2	%	75	10	5	-	10																Pocket marsh at head of creek branch; meadow grasses abundant in interior section; saltbushes fringe along uplands; remainder mostly saltmarsh cordgrass.	I
			acres	50.4	6.7	3.4	-	6.7																	
21	Upshur Creek	55.9	%	70	10	5		15		-														Creek marsh section that extends back to form several pocket marsh areas; predominately saltmarsh cordgrass with patches of saltwort and saltmeadow grasses.	I
			acres	39.1	5.6	2.8		8.4		-															
22	Machipongo River	274.6	%	90	-			10		-														Extensive marsh area; predominately intermediate and short form saltmarsh cordgrass with saltwort in the most poorly drained areas; some meadow along uplands.	I
			acres	247.1	-			27.5		-															
23	Machipongo River	23.8	%	95				5																Marsh island almost entirely saltmarsh cordgrass; short form cordgrass dominates interior with patches of saltwort.	I
			acres	22.6				1.2																	
24	The Hammocks	47.9	%	90	5	-	-	5		-	-													Creek marsh section; dominated by saltmarsh cordgrass with fringe of meadow grasses along uplands; patches of saltbushes, meadow, and sea oxeye.	I
			acres	43.1	2.4	-	-	2.4		-	-														

Section I. Machipongo River, Fowling Point
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Nelderush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
25	The Hammocks	74.9	%	80	5	5	-	10		-														Upstream drainage area of creek; isolated by ridges of upland and dirt causeway; meadow grasses and saltbushes along uplands and in pocket areas.	I
			acres	59.9	3.7	3.7	-	7.5		-															
26	Red Bank Creek	65.7	%	95	-	-	-	5		-														Creek marsh section; extends back to upland hammocks; intermediate and tall form saltmarsh cordgrass grades back to zone of short form along uplands.	I
			acres	62.4	-	-	-	3.3		-															
27	Phillips Creek	14.8	%	60	30	-		10		-														Pocket marsh area formed between upland hammocks; short form cordgrass mixed with patches of saltwort grades back to saltmeadow grasses.	I
			acres	8.9	4.4	-		1.5		-															
28	Phillips Creek	70.5	%	85	-	-		15		-														Creek marsh section; dirt fill causeway forms back of marsh; short and intermediate forms of saltmarsh cordgrass mixed with large patches of saltwort.	I
			acres	59.9	-	-		10.6		-															
29	Phillips Creek	125.3	%	35	30	5	25	5		-	-								-					Upstream section of creek marsh; tall form saltmarsh cordgrass along channels grades back to large meadow and needlerush areas; saltbushes along uplands.	XII
			acres	43.9	37.6	6.3	31.3	6.3		-	-									-					
30	Phillips Creek	47.5	%	30	15	20	20	15		-	-									-				Pocket marsh area formed by one branch of creek; saltmarsh cordgrass dominates along creek; grades back to areas of saltbushes, needlerush and meadow grasses.	XII
			acres	14.2	7.1	9.5	9.5	7.1		-	-										-				
31	Phillips Creek	13.6	%	-	35	50	5	5		5										-				Upstream pocket marsh area dominated by high marsh species; a branch of Phillips Creek drainage.	IV
			acres	-	4.8	6.8	0.7	0.7		0.7											-				
32	Phillips Creek	64.0	%	85	-	-		15		-														Creek marsh formed between two creek branches; mostly saltmarsh cordgrass with large areas of saltwort.	I
			acres	54.4	-	-		9.6		-															

Section I. Machipongo River, Fowling Point
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
33	Red Bank Creek	52.3	%	90	2	2	1	5																Creek marsh formed along one branch of creek; mostly saltmarsh cordgrass with patches of saltwort; saltbushes, meadow grasses and needlerush along uplands.	I
			acres	47.1	1.0	1.0	0.5	2.6																	
34	Red Bank Creek	67.2	%	85	4	5	1	5																Marsh along upstream section of creek; saltbushes and meadow in several areas along uplands; remainder of marsh dominated by saltmarsh cordgrass.	I
			acres	57.1	2.7	3.4	0.7	3.4																	
35	Red Bank Creek	53.3	%	95	-	-	5			-														Creek marsh along one side of creek channel; mostly saltmarsh cordgrass with scattered saltwort; some saltbushes along upland edge.	I
			acres	50.6	-	-	2.7		-																
36	Brick House Neck	230.3	%	80	-	2		15		3														Creek marsh section dominated by saltmarsh cordgrass extends around upland hummocks; includes high marsh hummocks of saltbushes, sea oxeye, cedar, meadow grasses.	I
			acres	184.2	-	4.6		34.5		6.9															
37	Brick House Neck	26.1	%	5	40	30	-	25		-									-					Pocket marsh area formed between two upland ridges; dominated by high marsh species.	XII
			acres	1.3	10.4	7.8	-	6.5		-										-					
38	Fowling Point	1955.	%	90	-	-		10		-														Extensive marsh section dominated by saltmarsh cordgrass with patches of saltwort; high marsh ridge through one area with sea oxeye, saltbushes, meadow grasses and some cedar.	I
			acres	1759.	-	-		196.		-															
39	Castle Ridge Creek	221.8	%	85	-	-		15		-	-													Extensive saltmarsh cordgrass area includes several upland ridges as well as high marsh areas of cedar, saltbushes, meadow grasses, etc.	I
			acres	188.5	-	-		33.3		-	-														
40	Mill Creek	147.0	%	80	10	-	5	5		-														Large marsh area at head of creek; saltmarsh cordgrass dominates but grades to meadow grasses and needlerush in areas along uplands.	I
			acres	117.6	14.7	-	7.4	7.4		-															

Section I. Machipongo River, Fowling Point
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
41	Kitts Creek	332.9	%	95	-	-		5		-	-													Extensive marsh area; dominated by saltmarsh cordgrass with scattered patches of saltwort; other species along upland edges.	I
			acres	316.3	-	-		16.6		-	-														
42	Webbs Island	330.0	%	95	-	-		5		-	-													Extensive saltmarsh cordgrass area; includes several upland areas of cedar, myrtle, saltbushes.	I
			acres	313.5	-	-		16.5		-	-														
43	Crabbing Marsh	656.4	%	95				5																Extensive marsh; largely tall and intermediate form saltmarsh cordgrass but areas of short form cordgrass and saltwort.	I
			acres	623.6				32.8																	
44	Powells Channel	12.7	%	90				10																Marsh island; tall form saltmarsh cordgrass around perimeter; interior of short form cordgrass mixed with saltwort.	I
			acres	11.4				1.3																	
45	Powells Channel	49.5	%	90				10																Marsh island; tall form saltmarsh cordgrass in zone around perimeter; interior area mostly short form cordgrass mixed with saltwort.	I
			acres	44.6				5.0																	
46	Powells Channel	14.5	%	90				10																Marsh island; tall form saltmarsh cordgrass around perimeter; interior of short form cordgrass and saltwort; gulls observed nesting.	I
			acres	13.0				1.4																	
47	Ebb Stake Marsh	32.1	%	95				5																Marsh island; tall and intermediate form saltmarsh cordgrass predominate; scattered patches of short form mixed with saltwort.	I
			acres	30.5				1.6																	
48	Short Prong Marsh	835.7	%	95				5																Extensive marsh; tall and intermediate form saltmarsh cordgrass dominate along channels; short form cordgrass mixed with saltwort in less well drained areas.	I
			acres	793.9				41.8																	

Section I. Machipongo River, Fowling Point
(continued)

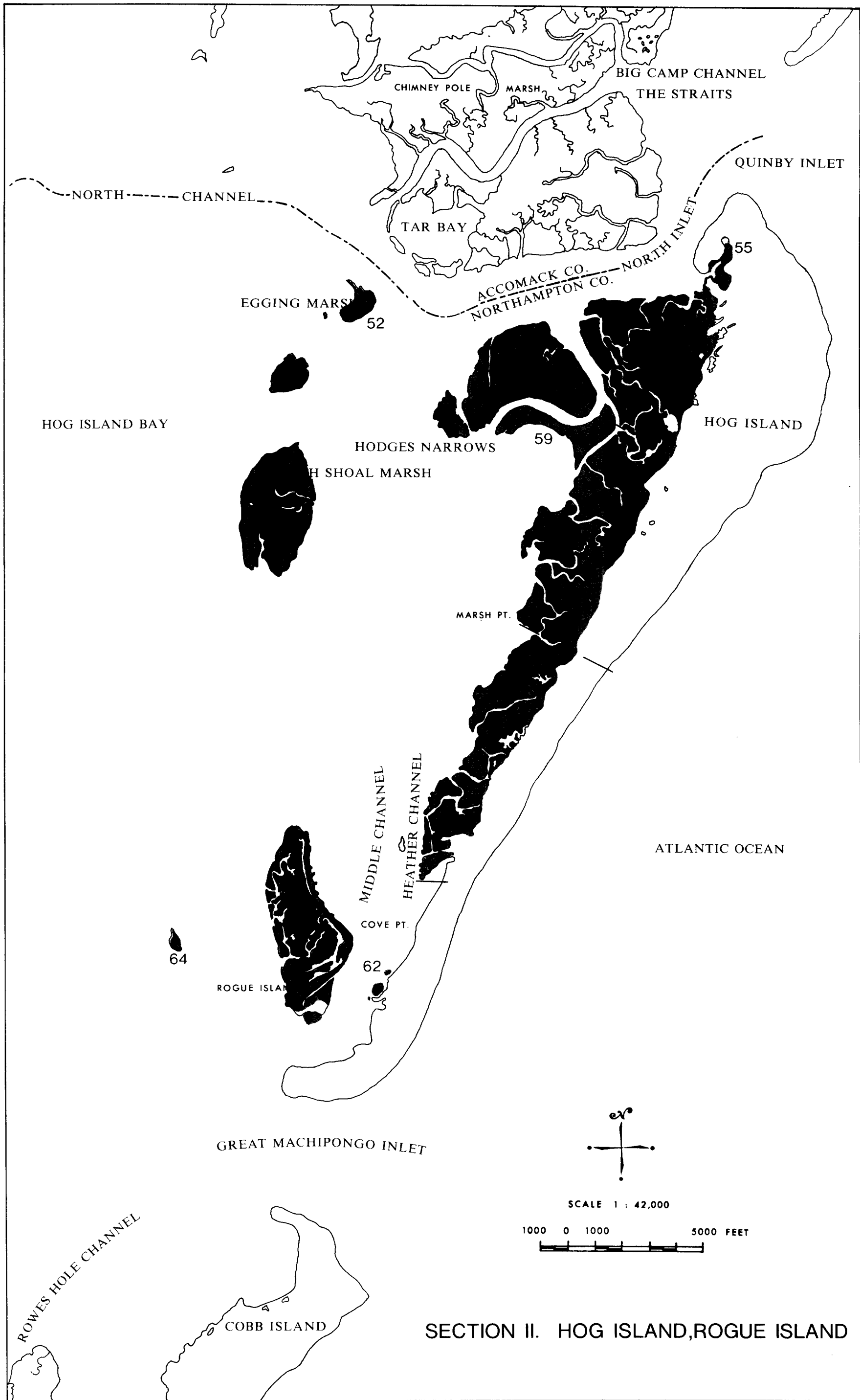
#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
49	Short Prong Marsh	4.5	%	95				5																Small marsh island; dominated by intermediate and tall form saltmarsh cordgrass.	I
			acres	4.3				0.2																	
50	Short Prong Marsh	50.3	%	90				10																Marsh island; tall and intermediate form saltmarsh cordgrass dominate perimeter; interior section of short form; shorebird nesting area.	I
			acres	45.3				5.0																	
51	Short Prong Marsh	22.9	%	90				10																Marsh island; tall and intermediate form saltmarsh cordgrass dominate perimeter; interior section of short form cordgrass with saltwort; shorebird nesting area.	I
			acres	20.6				2.3																	
	Total Section I	7046.3	%	88	2	1	1	9	-	-	-									-					
			acres	6184.1	138.0	64.0	50.1	601.9	-	7.6	-														

Section II. Hog Island, Rogue Island

Those tidal wetlands associated with Hog and Rogue Islands as well as several marsh islands located in Hog Island Bay are described here. Most of the wetlands adjacent to Hog Island are located behind its northern end as it is this end that has been accreting in recent years. These marsh areas are dominated by saltmarsh cordgrass (Type I) with many scattered areas of short-form saltmarsh cordgrass mixed with saltwort (Type X). Immediately adjacent to the upland portions of Hog Island these extensive saltmarsh cordgrass marshes (#56, 60, 61) grade to a narrow zone of high marsh (Type II), including such species as saltmeadow grasses, sea-oxeye, sea lavender and saltbushes. A large salt flat is located in the interior of Hog Island but it is only irregularly flooded during storms and is not considered at this time to be tidal wetlands under Virginia's definition. The southern end of the island has been rapidly eroding and much of the area has been subject to overwash from the beach. Consequently, except for a few patches of saltmarsh cordgrass behind the beach, there is little marsh present.

Behind the northern end of Hog Island there are also three marsh islands (#52, 53, 54). Each of these marshes is composed largely of intermediate-form saltmarsh cordgrass, with short-form saltmarsh cordgrass mixed with saltwort in areas of highest elevations.

Rogue Island (#63), located behind the southern end of Hog Island, is also dominated by saltmarsh cordgrass with saltwort abundant in some areas. An upland, sandy ridge located along the island's eastern edge is vegetated largely with shrubs and grasses. This upland area grades through a transition zone of high marsh, including such species as saltbushes, saltmeadow grasses, sea-oxeye and saltwort, to the extensive saltmarsh cordgrass zone which comprises most of island's acreage.



SECTION II. HOG ISLAND, ROGUE ISLAND

Section II. Hog Island, Rogue Island

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
52	Egging Marsh	24.3	%	90				10		-														Marsh island dominated by short and intermediate form saltmarsh cordgrass; shorebird nesting area.	I
			acres	21.9					2.4		-														
53	Hog Island Bay	33.9	%	90	-			10		-	-													Marsh island of intermediate form saltmarsh cordgrass areas with zones of short form cordgrass mixed with saltwort; several patches of sea oxeye.	I
			acres	30.5	-				3.4		-	-													
54	High Shoal Marsh	227.0	%	95	-			5		-	-													Extensive marsh island; short form saltmarsh cordgrass mixed with other species predominate around perimeter; intermediate form in interior areas.	I
			acres	215.6	-				11.4		-	-													
55	Hog Island	22.0	%	80	5	5		10		-	-	-												Pocket marsh area with tidal flushing somewhat restricted by sand spit; predominately short form saltmarsh cordgrass mixed with saltwort; meadow and saltbushes along uplands.	I
			acres	17.6	1.1	1.1			3.3		-	-	-												
56	Hog Island	545.0	%	90	-	-		10		-	-													Extensive marsh area formed behind barrier island; large areas of short form saltmarsh cordgrass towards island; those areas grade into meadow, saltbushes, sea oxeye etc.	I
			acres	490.5	-	-			54.5		-	-													
57	Hodges Narrows	272.0	%	95				5																Extensive marsh island; predominately intermediate form saltmarsh cordgrass mixed with zones of short form cordgrass and saltwort.	I
			acres	258.4					13.6																
58	Hodges Narrows	29.5	%	95				5																Marsh island; short form saltmarsh cordgrass mixed with saltwort predominates in zone around perimeter; intermediate form in most interior sections.	I
			acres	28.0					1.5																
59	Hodges Narrows	78.0	%	90				10																Extensive marsh section dominated by saltmarsh cordgrass with areas of saltwort mixed with short form saltmarsh cordgrass.	I
			acres	70.2					7.8																

Section II. Hog Island, Rogue Island
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
60	Hog Island	502.0	%	95	-	-		5		-	-													Extensive marsh section of predominately tall and intermediate form saltmarsh cordgrass; along island marsh grades to areas of short form cordgrass mixed with saltwort and to zone of meadow and saltbushes.	I
			acres	476.9	-	-		25.1		-	-														
61	Hog Island	361.2	%	90	-	-		10		-	-													Extensive marsh section dominated by saltmarsh cordgrass; sand overwashes from ocean side of island in several places; meadow, sea oxeye and saltbushes along upland edge.	I
			acres	325.1	-	-		36.1		-	-														
62	Hog Island	6.0	%	100				-																Scattered patches of tall form saltmarsh cordgrass along beach.	I
			acres	6.0				-																	
63	Rogue Island	267.5	%	90	2	3		5		-	-													Large marsh island dominated by saltmarsh cordgrass with scattered areas of saltwort; ridge along eastern side grades to high marsh of meadow, sea oxeye, saltbushes, then to upland areas	I
			acres	240.8	5.4	8.0		13.4		-	-														
64	Hog Island Bay	4.7	%	100				-																Marsh island; predominately tall and intermediate forms of saltmarsh cordgrass.	I
			acres	4.7				-																	
	Total Section II	2373.1	%	92	-	-		7		-	-														
			acres	2186.	6.5	9.1		171.4		-	-														

Section III. Ramshorn Channel, Elkins Marsh

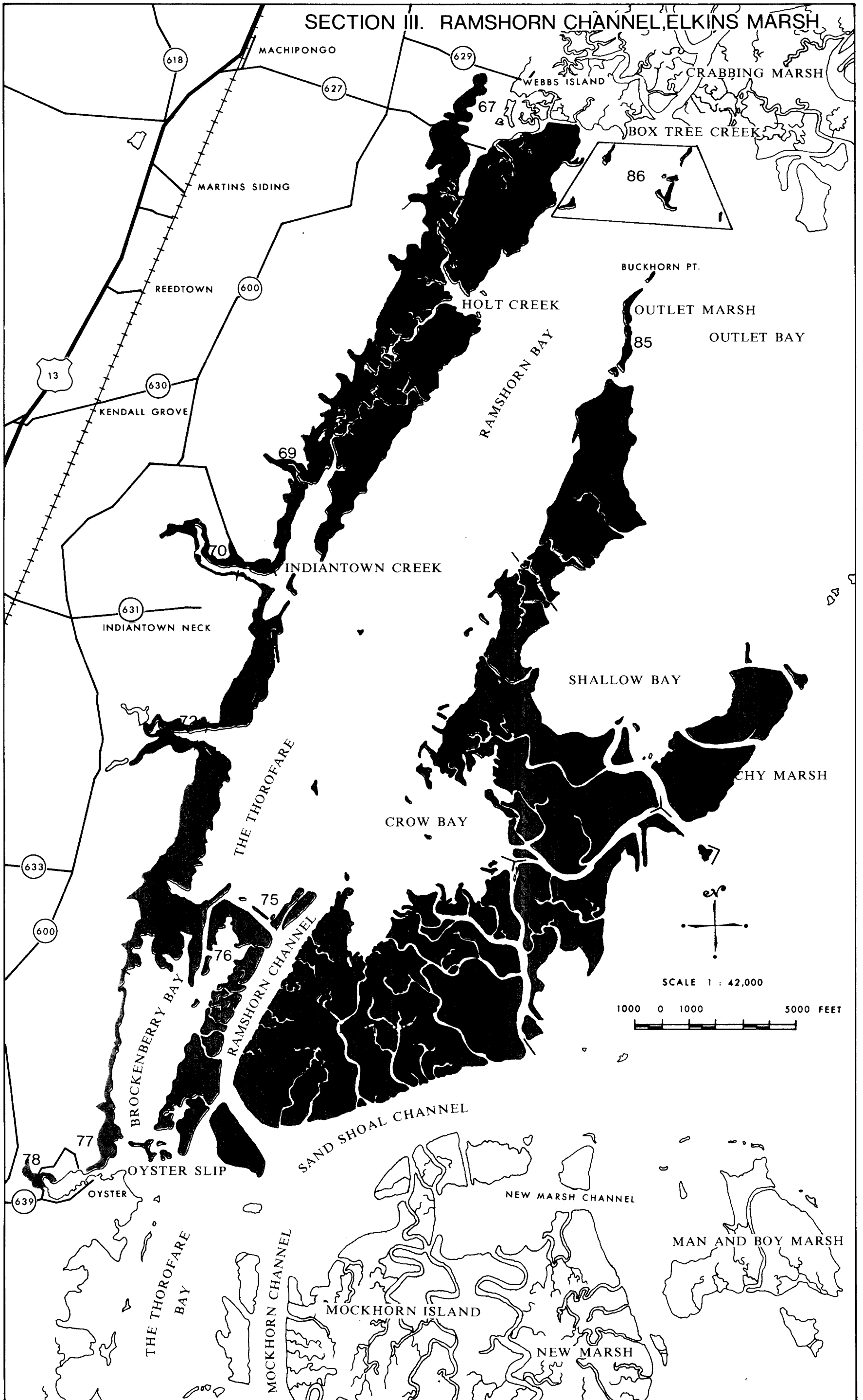
Included in this section of Northampton County are those large areas of marsh to the west of Cobb Island surrounding Ramshorn Bay. The marshes can be divided into two distinct regions. They consist of those areas which are immediately adjacent to the uplands and those large marsh areas dominated by Elkins and Eckichy Marshes.

Of the marsh areas adjacent to the upland, a series of broad fringing marshes (#65, 68, 69, 71, 73, 74) extend from Webbs Island in the north to Brockenberry Bay in the south. They are of pre-dominately saltmarsh cordgrass (Type I). Throughout these fringing areas, however, there exist a series of intermittent, sandy ridges which run in rows parallel to the modern shoreline. Evidence suggests that these are the remnants of ancient beach ridges which formed when sea level stood at a different level than is found today. In contrast to the saltmarsh cordgrass which surrounds them, these areas are vegetated with high marsh species including saltbushes, saltmeadow grasses, sea-oxeye, sea lavender and saltwort (Type II, IV, X). Most probably, they are a continuation of the drowned ridges found further north and described in Section I.

In addition to the broad fringing marshes there are also several tidal creeks which extend back into the upland. Proceeding towards the heads of these creek marsh areas, saltmarsh cordgrass becomes less dominant while high marsh species such as saltbushes and saltmeadow grasses increase in abundance (Type II, IV). At the head of Holt Creek (#66, 67) saltmarsh cordgrass is located only along the channel edges while most of the wetland areas are dominated by high marsh species.

The extensive wetland areas of Elkins and Eckichy Marshes (#80-86) are composed almost exclusively of tall and intermediate forms of saltmarsh cordgrass. It is possible however, that Elkins Marsh may have had its origin as an ancient barrier island or beach ridge. Areas of high elevation are evident along the marsh's western edge running north to Outlet Marsh (#55). In Outlet Marsh these areas are of sufficient elevation to support high marsh species such as saltbushes, saltmeadow grasses and sea-oxeye.

SECTION III. RAMSHORN CHANNEL, ELKINS MARSH



Section III. Ramshorn Channel, Elkins Marsh

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
65	Box Tree Creek	373.0	%	90	-	-		10		-	-													Extensive marsh area dominated by saltmarsh cordgrass; interior areas of short form cordgrass mixed with saltwort; zone of saltbushes and meadow along uplands.	I
			acres	335.7	-	-		37.3		-	-														
66	Holt Creek	93.0	%	60	30	5		5	-	-	-							-						Short form saltmarsh cordgrass grades upstream to large areas of meadow; tall form cordgrass along channels; large patch of saltbushes along upland.	I
			acres	55.8	27.9	4.6		4.6	-	-	-														
67	Holt Creek	25.6	%	2	48	50			-	-	-							-						Marsh area extending above road; dominated by saltbushes with dense understory of meadow saltmarsh cordgrass along creek channel; scattered cattails along upland.	IV
			acres	0.5	12.3	12.8			-	-	-														
68	Holt Neck	573.0	%	85	5	-		10	-	-	-													Extensive marsh area dominated by saltmarsh cordgrass with areas of saltwort; zone of saltmeadow with saltbushes along upland; high marsh also along channel edges.	I
			acres	487.0	28.6	-		57.3	-	-	-														
69	Holt Neck	94.2	%	60	15	5	-	15	-	5	-							-						Wide fringing marsh extending from upland to creek channel; short form saltmarsh cordgrass with saltwort predominates; zone of high marsh species along uplands.	I
			acres	56.5	14.1	4.7	-	14.1	-	4.7	-	-	-												
70	Indiantown Creek	31.1	%	80	10	5	5	-	-	-	-							-						Creek with marsh fringe along shoreline of lower section and pocket marsh area at head; saltmarsh cordgrass dominates with zone of high marsh species along uplands; needlerush in patches, especially towards head.	I
			acres	24.9	3.1	1.6	1.6	-	-	-	-	-	-												
71	The Thorofare	127.9	%	75	10	5	-	10	-	-	-											-		Broad fringing marsh of predominately intermediate and short form saltmarsh cordgrass; zone of salt meadow and saltbushes along upland; ridges of high marsh species also along bay edge of marsh.	I
			acres	95.9	12.8	6.4	-	12.8	-	-	-	-	-												
72	Taylor Creek	38.3	%	85	10	5	-	-	-	-	-													Shallow tidal creek with broad areas of marsh dominated by saltmarsh cordgrass; zone of high marsh species along uplands; patches of cattail and needlerush.	I
			acres	32.6	3.8	1.9	-	-	-	-	-	-	-												

Section III. Ramshorn Channel, Elkins Marsh
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
73	The Thorofare	146.0	%	75	10	5	-	10	-	-	-													Extensive fringing marsh dominated by intermediate and short form cordgrass; zone of saltmeadow and other high marsh species along upland as well as in scattered ridges along bay.	I
			acres	109.5	14.6	7.3	-	14.6	-	-	-	-	-												
74	Thomas Creek	150.5	%	90	3	2	-	5		-	-													Extensive marsh area of predominately tall and intermediate form saltmarsh cordgrass; zone of high marsh species along upland edge.	I
			acres	135.4	4.5	3.0	-	7.5		-	-	-	-												
75	Ramshorn Channel	21.5	%	98				2																Several marsh islands along edge of channel; predominately intermediate and tall form saltmarsh cordgrass; short form in some interior patches.	I
			acres	21.1				0.4																	
76	Ramshorn Channel	246.5	%	98				2																Series of marsh islands separated by drainage channels; predominately tall and intermediate form saltmarsh cordgrass.	I
			acres	241.6				4.9																	
77	Brockenberry Bay	50.7	%	70	5	10	-	15		-	-													Broad fringing marsh extending along upland shoreline; tall form saltmarsh cordgrass grades back to short form and saltwort, then zone of saltmeadow and saltbushes.	I
			acres	35.5	2.5	5.1	-	7.6		-	-	-	-												
78	Cobb Mill Creek	7.5	%	65	10	15	5	5		-	-													Fringe and pocketmarsh area at head of Oyster Harbor; saltmarsh cordgrass along water grades back to saltmeadow and saltbushes.	I
			acres	4.9	0.8	1.1	0.4	0.4		-	-	-	-												
79	Ramshorn Channel	64.0	%	95	-			5		-	-													Extensive marsh island; predominately intermediate and tall form saltmarsh cordgrass; interior sections of short form cordgrass mixed with saltwort.	I
			acres	60.8	-			3.2		-	-	-	-												
80	Elkins Marsh	1521.0	%	98				2			-													Vast saltmarsh cordgrass dominated marsh area; tall form predominates along stream sides and areas of low elevation; grades to intermediate form areas; scattered patches of short form, some with saltwort.	I
			acres	1490.6				30.4				-	-												

Section III. Ramshorn Channel, Elkins Marsh
(continued)

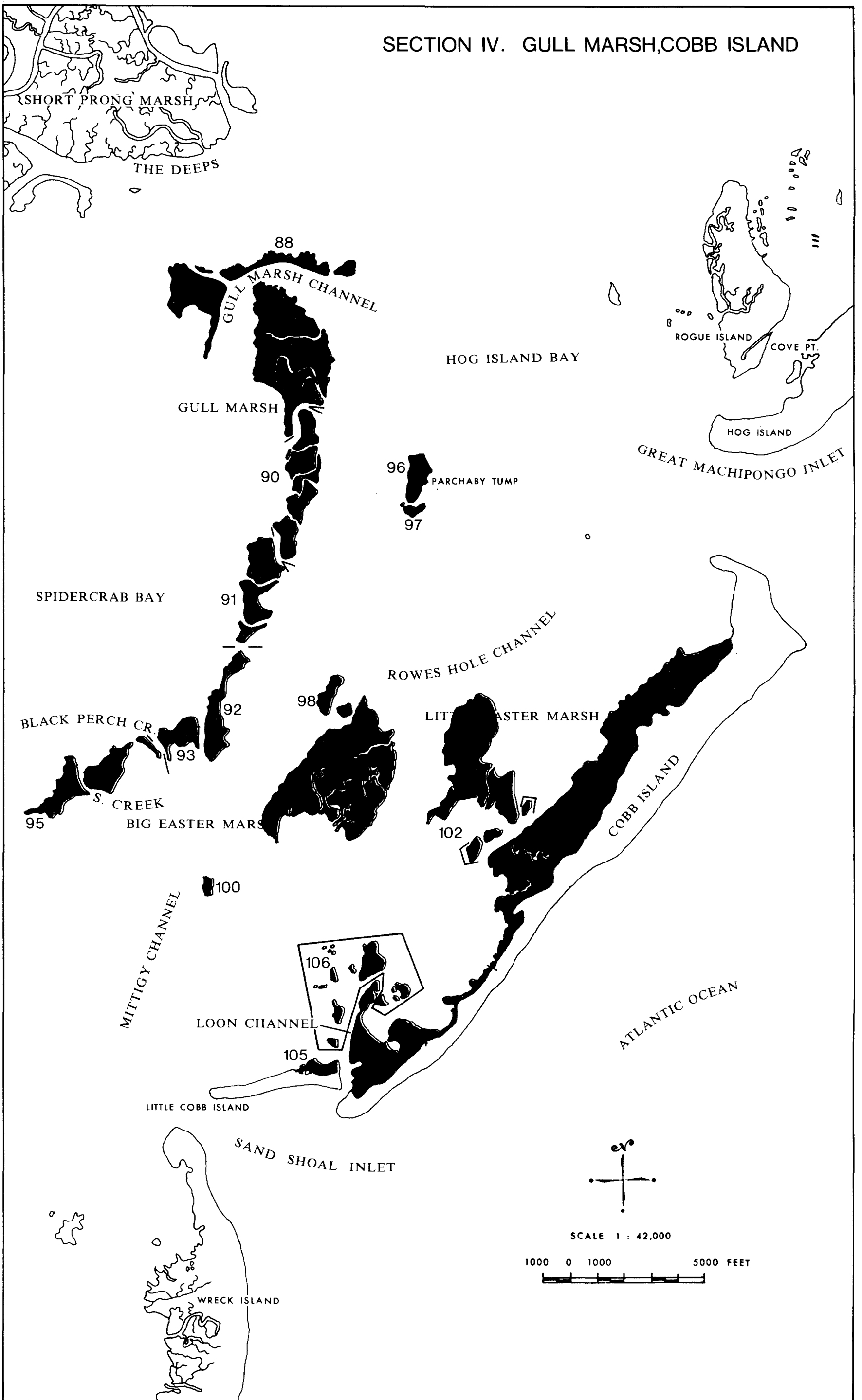
#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
81	Elkins Marsh	298.8	%	98				2		-														Extensive saltmarsh cordgrass dominated marsh section; predominately tall or intermediate form cordgrass with patches of short form cordgrass and saltwort.	I
			acres	292.8					6.0		-														
82	Eckichy Marsh	315.2	%	95				5																Extensive saltmarsh cordgrass dominated marsh islands; predominately tall and intermediate form cordgrass; scattered areas of short form throughout, especially along eastern edge.	I
			acres	299.4					15.8																
83	Elkins Marsh	849.0	%	95				5																Extensive marsh section; dominated by tall and intermediate form saltmarsh condgrass; scattered areas at short form with saltwort. Gulls observed nesting along northeast marsh edge.	I
			acres	806.6					42.4																
84	Elkins Marsh	387.0	%	95				5																Extensive marsh section; predominately tall and intermediate form saltmarsh condgrass; areas of short form condgrass and saltwort throughout, especially along eastern edge.	I
			acres	367.6					19.4																
85	Outlet Marsh	18.9	%	90	-	-		10		-	-													Saltmarsh cordgrass dominated marsh islands; ridges at high marsh species such as, saltbushes, sea oxeye, in interior sections.	I
			acres	17.0	-	-			1.9		-	-													
86	Ramshorn Bay	12.3	%	95	-			5		-	-													Scattered small marsh islands; several have high marsh areas with some sea oxeye but most are predominately tall form saltmarsh condgrass.	I
			acres	11.7	-				0.6		-	-													
	Total Section III	5445.0	%	92	2	1	-	5	-	-	-							-							
			acres	4983.1	125.0	48.5	2.0	281.2	-	4.7	-														

Section IV. Gull Marsh, Cobb Island

The wetlands described here include those found adjacent to Cobb Island as well as those of Gull Marsh (#88-95), a long chain of marsh islands located northwest of Cobb Island. Most of these islands consist of saltmarsh cordgrass (Type I) with interior areas of higher elevation and abundant saltwort (Type X). The marsh islands are appropriately named, for in the spring and early summer these are active nesting sites for many gulls and other shorebirds. Evidence indicates that the marshes may have formed along an ancient beach ridge or barrier island. Other nearby marsh islands including Big Easter, Little Easter, and Parchaby Tump (#96-102) are similar in species composition with both areas of tall-form saltmarsh cordgrass and large areas of short-form saltmarsh cordgrass mixed with saltwort.

The wetland areas adjacent to the north end of Cobb Island (#103) are again dominated by saltmarsh cordgrass with a band of short-form saltmarsh cordgrass mixed with saltwort bound bordering along the upland. Much of the southern half of the island, however, has been subject to storm overwash and erosion. As a result, the marsh along much of this area has been reduced to only a narrow fringe of short form saltmarsh cordgrass mixed with saltwort. At the southern end of the island near the abandoned Coast Guard Station, the marsh again expands to form an extensive area of saltmarsh cordgrass (#104). Adjacent to this southern end of Cobb Island is located little Cobb Island. It is primarily a long sand beach that is relatively recent feature. Currently the island is rapidly eroding and overwashes have reduced most of its formerly saltmarsh cordgrass dominated wetlands to those located near its eastern end.

SECTION IV. GULL MARSH, COBB ISLAND



Section IV. Gull Marsh, Cobb Island

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olny Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
87	Gull Marsh	74.2	%	90				10			-													Marsh island dominated by saltmarsh cordgrass; interior portion of marsh mostly short form cordgrass mixed with saltwort.	I
			acres	66.8					7.4			-													
88	Gull Marsh	42.4	%	90				10			-													Marsh islands dominated by intermediate and short form saltmarsh cordgrass; gulls observed nesting in areas of high elevation.	I
			acres	38.2					4.2			-													
89	Gull Marsh	231.3	%	95				5																Marsh island dominated by intermediate and tall form saltmarsh cordgrass; sections throughout with short form mixed with saltwort	I
			acres	219.7					11.6																
90	Gull Marsh	95.5	%	85	-			15		-	-													Series of marsh islands dominated by short form saltmarsh cordgrass; interior areas of saltwort; shore birds nesting throughout areas of high elevation.	I
			acres	81.2	-				14.3		-	-													
91	Gull Marsh	70.5	%	85	-			15		-	-													Series of marsh islands dominated by short form saltmarsh cordgrass mixed with patches of saltwort; gulls observed nesting throughout areas of highest elevations.	I
			acres	59.9	-				10.6		-	-													
92	Gull Marsh	48.3	%	85	-			15		-	-													Marsh island; mostly short form saltmarsh cordgrass mixed with saltwort patches.	I
			acres	41.1	-				7.2		-	-													
93	Gull Marsh	26.4	%	85	-			15		-	-													Marsh island; mostly short form saltmarsh cordgrass mixed with saltwort patches.	I
			acres	22.4	-				4.0		-	-													
94	Gull Marsh	42.2	%	90	-			10			-													Marsh island; mostly intermediate form or short form cordgrass mixed with saltwort.	I
			acres	38.0	-				4.2			-													

Section IV. Gull Marsh, Cobb Island
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Oiney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
95	Gull Marsh	38.0	%	90	-			10			-													Marsh island; mostly intermediate form or short form cordgrass mixed with saltwort.	I
			acres	34.2	-			3.8			-														
96	Parchaby Tump	26.0	%	90	-			10			-													Marsh island; large area of short form saltmarsh cordgrass at northern end of marsh is nesting area for gulls.	I
			acres	23.4	-			2.6			-														
97	Parchaby Tump	5.3	%	100				-																Marsh island dominated by tall form saltmarsh cordgrass.	I
			acres	5.3				-																	
98	Big Easter Marsh	14.7	%	90	-			10			-													Marsh island; mostly tall and intermediate form saltmarsh cordgrass; ridge of short form condgrass along western edge.	I
			acres	13.2	-			1.5			-														
99	Big Easter Marsh	325.4	%	90	-			10		-	-													Large marsh island dominated by intermediate and tall form saltmarsh cordgrass; areas of short form and saltwort throughout, especially along western edge; nesting area.	I
			acres	292.9	-			32.5			-	-													
100	Mittigy Channel	4.5	%	98				2																Marsh island dominated by tall and intermediate form saltmarsh cordgrass.	I
			acres	4.4				0.1																	
101	Little Easter Marsh	181.5	%	90	-			10		-	-													Large marsh island; predominately tall and intermediate form saltmarsh cordgrass; however there are large areas of short form cordgrass with saltwort; gulls nesting in short form areas.	I
			acres	163.4	-			18.2			-	-													
102	Cobb Island	14.8	%	100				-																Several marsh islands of predominately tall form saltmarsh cordgrass.	I
			acres	14.8				-																	

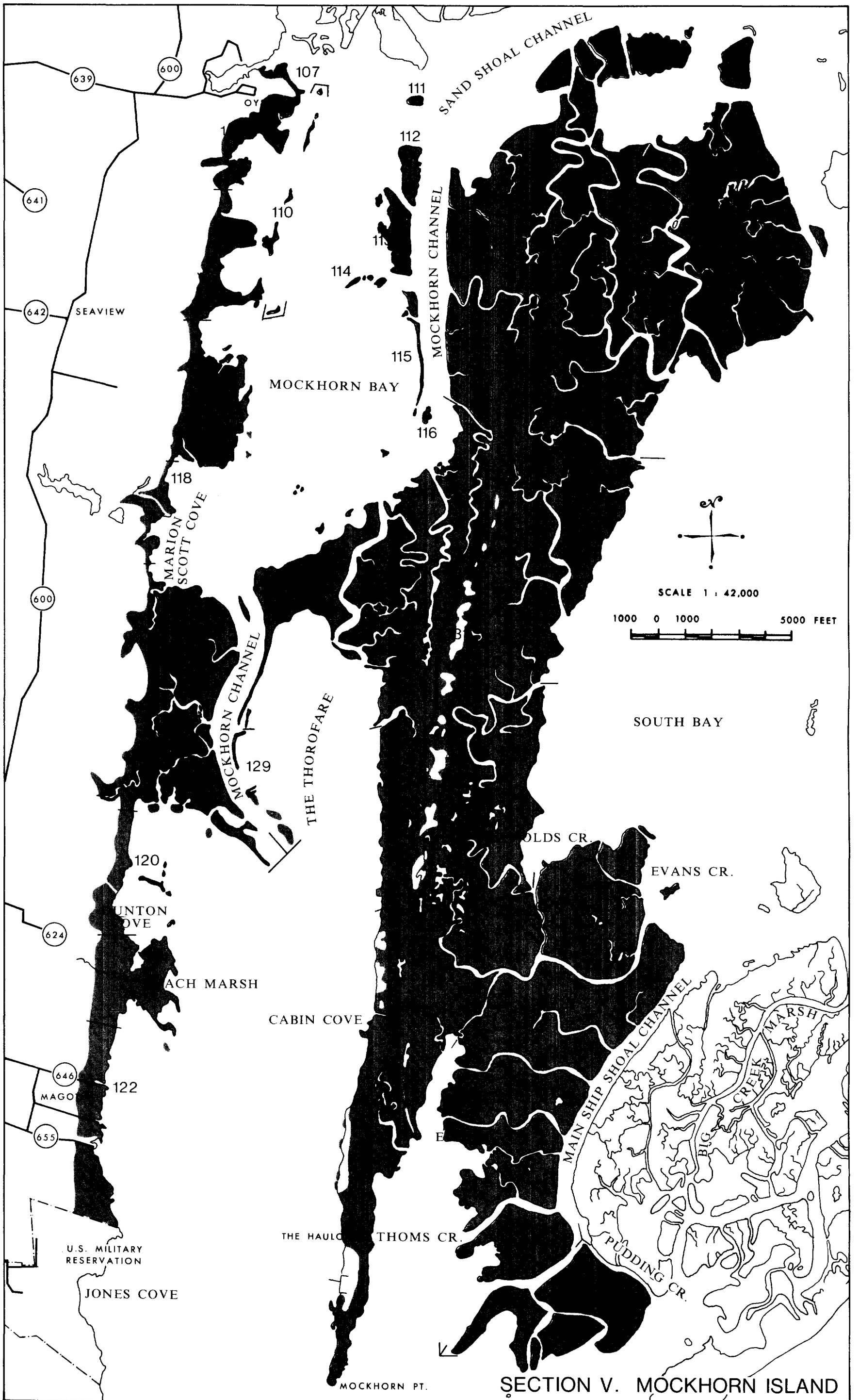
Section IV. Gull Marsh, Cobb Island
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
103	Cobb Island	457.0	%	95	-	-		5		-	-													Extensive marsh area formed behind barrier island; dominated by intermediate and tall form saltmarsh cordgrass; short form cordgrass with saltwort along upland border, especially at north end.	I
			acres	434.2	-	-		22.8		-	-														
104	Cobb Island	122.5	%	90	-	-		10		-	-													Extensive marsh area formed behind south end of island; short form cordgrass with saltwort predominates in areas adjacent to island and around old Coast Guard Station; remainder tall and intermediate form saltmarsh cordgrass.	I
			acres	110.2	-	-		12.2		-	-														
105	Little Cobb Island	17.0	%	95	-	-		5		-	-													Saltmarsh cordgrass dominated marsh formed behind small sandy island; erosion and overwash at western end of island has greatly reduced marsh area.	I
			acres	16.2	-	-		0.8		-	-														
106	Loon Channel	33.6	%	98				2																Numerous small marsh islands formed on tidal flats next to channel; predominately tall form saltmarsh cordgrass although interior of largest island has short form mixed with saltwort.	I
			acres	32.9				0.7																	
	Total Section IV	1871.1	%	92	-	-		8		-	-														
			acres	1712.	-	-		158.7		-	-														

Section V. Mockhorn Island

The wetlands found in this portion of Northampton County are dominated by those marshes located along Mockhorn Island. The island itself is characterized by a series of relic dune ridges which run down its center in a north-south line, approximately parallel to the modern, upland shoreline which is located two miles west. The ridges reach maximum elevation in the middle third of the island, where they are vegetated with upland species such as pine, myrtle and cedar. At the southern end of Mockhorn Island this ridge system forms the eastern shoreline of Magothy Bay, while at the northern end, only scattered areas of short-form cordgrass (Type II) mixed with saltwort in marsh sections #124 and #127 mark its presence. Surrounding these upland ridges there is typically a zone of high marsh (Type II, IV) with saltbushes, saltmeadow grasses, and sea-oxeye (#131). Also included in these high marsh areas are large stands of saltwort. These areas of saltwort (Type X) in turn grade to areas of short-form saltmarsh cordgrass mixed with saltwort and finally to areas of predominately tall and intermediate-form saltmarsh cordgrass (#130, 132, 133, 134, 135). Most of the marshes found along the Main Ship Shoal Channel (#136), in contrast to those described above are dominated by tall and intermediate forms of saltmarsh cordgrass with only scattered areas mixed with saltwort.

The broad fringing marshes which extend along the upland from Oyster in the north to the U. S. Military Reservation in the south are dominated by saltmarsh cordgrass which in turn grades west to a zone of high marsh immediately adjacent to the upland. These fringing areas are also characterized by an ancient ridge system which delineates a earlier shoreline. This ridge is evident at the north end as a chain of saltmarsh cordgrass islands (#110). It continues south through several marshes (#117, 119, 121) where it is marked by areas of high marsh species surrounded by saltmarsh cordgrass. Most probably the ridge is a continuation of similar areas found in Sections I, III and VIII.



SECTION V. MOCKHORN ISLAND

Section V. Mockhorn Island

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olny Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
107	Oyster	7.7	%	90	5	3		2		-	-							-						Fringing marsh around diked area; dominated by tall and intermediate form salt marsh cordgrass with zone of saltbushes and meadow grasses along dike.	I
			acres	6.9	0.4	0.2		0.2		-	-									-					
108	Mockhorn Bay	107.5	%	80	10	5		5	-	-	-							-						Broad fringing marsh of predominately tall and intermediate form saltmarsh cordgrass; zone of high marsh species including saltbushes and saltmeadow along uplands.	I
			acres	86.0	10.8	5.4		5.4	-	-	-									-					
109	Mockhorn Bay	133.3	%	90	5	-		5	-	-	-													Broad marsh fringe; grades from extensive tall form saltmarsh cordgrass areas back to zone of high marsh species along uplands.	I
			acres	120.0	6.7	-		6.7	-	-	-														
110	Mockhorn Bay	6.2	%	100				-																Several marsh islands of predominately tall form saltmarsh cordgrass; small areas of saltwort and sea oxeye.	I
			acres	6.2				-																	
111	Mockhorn Channel	4.7	%	98				2																Marsh island of predominately tall form salt marsh cordgrass; interior section with short form cordgrass and some saltwort.	I
			acres	4.6				0.1																	
112	Mockhorn Channel	32.0	%	98				2																Marsh island; predominately tall form salt marsh cordgrass but zone of short form cordgrass with saltwort along western side of marsh.	I
			acres	31.4				0.6																	
113	Mockhorn Channel	55.7	%	95				5																Marsh island; zone of tall form saltmarsh cordgrass around perimeter; interior mostly short form cordgrass with saltwort.	I
			acres	52.9				2.8																	
114	Mockhorn Bay	4.7	%	100				-																Several adjacent marsh islands; predominately tall form saltmarsh cordgrass.	I
			acres	4.7				-																	

Section V. Mockhorn Island
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
115	Mockhorn Channel	15.2	%	98				2																Several adjacent marsh islands formed along edge of channel; mostly tall form saltmarsh cordgrass with interior areas of short form cordgrass.	I
			acres	14.9					0.3																
116	Mockhorn Channel	3.3	%	95				5																Marsh island with tall form saltmarsh cordgrass around perimeter; interior of short form cordgrass with saltwort; some oyster shell.	I
			acres	3.1					0.2																
117	Mockhorn Bay	233.1	%	90	3	2	-	5	-	-	-													Extensive marsh area; predominately tall form saltmarsh cordgrass grades to band of high marsh species along upland; several ridges of high elevation along bay edge of marsh.	I
			acres	209.8	7.0	4.7	-	11.7	-	-	-														
118	Marion Scott Cove	50.5	%	85	5	5	-	5	-	-	-													Fringe and embayed marsh area; predominately of saltmarsh cordgrass with fringe of high marsh along uplands; channel dredged across marsh to upland.	I
			acres	42.9	2.5	2.5	-	2.5	-	-	-														
119	Mockhorn Channel	679.0	%	90	3	2	-	5	-	-	-													Extensive marsh dominated by tall form salt marsh cordgrass; zone of high marsh species including salt meadow, saltbushes, needlerush with some cattails along upland edge.	I
			acres	611.1	20.4	13.6	-	34.0	-	-	-														
120	Magothy Bay	76.0	%	70	15	5	-	5	5	-	-													Wide fringing marsh section; grades from tall form cordgrass to short form cordgrass then to zone of high marsh along uplands; several large areas of brackish marsh dominated by hibiscus and cattail; dredged channel.	I
			acres	53.2	11.4	3.8	-	3.8	3.8	-	-														
121	Magothy Bay	177.5	%	80	10	5	-	5	-	-	-													Extensive marsh section; predominately tall form cordgrass with several ridges of high marsh species; wide zone of high marsh along upland border.	I
			acres	142.0	17.8	8.9	-	8.9	-	-	-														
122	Magothy Bay	185.0	%	60	15	10	5	10																Section of broad fringing marsh; saltmarsh cordgrass grades back to wide zone of high marsh along uplands; scattered hummocks of high marsh also in cordgrass zone; several dredged channels.	I
			acres	111.0	27.8	18.5	9.2	18.5																	

Section V. Mockhorn Island
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type	
123	Mockhorn Island	1728.	%	95				5																	Extensive marsh dominated by areas of tall and intermediate form saltmarsh cordgrass; scattered areas of short form cordgrass mixed with saltwort.	I
			acres	1642.					86.0																	
124	Sand Shoal Channel	68.9	%	90				10			-														Extensive marsh section of mostly tall and intermediate forms of saltmarsh cordgrass; some areas with short form saltmarsh cordgrass and saltwort.	I
			acres	62.0					6.9			-														
125	Sand Shoal Channel	40.3	%	95				5																	Predominately tall and intermediate form saltmarsh cordgrass area; new growth of cordgrass at south end.	I
			acres	38.3					2.0																	
126	Mockhorn Island	463.3	%	98				2																	Marsh area formed between two large channels that connect with South Bay; mostly tall and intermediate forms of saltmarsh cordgrass.	I
			acres	454.0					9.3																	
127	New Marsh	815.5	%	95				5																	Marsh area of tall and intermediate form saltmarsh cordgrass with areas of short form cordgrass mixed with saltwort; include isolated patch of tall form cordgrass.	I
			acres	774.7					40.8																	
128	Mockhorn Channel	240.0	%	95				5																	Marsh section dominated by tall form salt marsh cordgrass with scattered areas of short form mixed with saltwort; includes scattered patches of mostly tall form cordgrass along channel.	I
			acres	228.0					12.0																	
129	Mockhorn Channel	10.4	%	100																					Recently established patches of tall form saltmarsh cordgrass along edge of channel.	I
			acres	10.4																						
130	Mockhorn Island	754.6	%	95	-	-		5			-														Extensive marsh section dominated by tall and intermediate forms of saltmarsh cordgrass; grades to high marsh ridge which forms center of island.	I
			acres	716.9	-	-			37.7			-														

Section V. Mockhorn Island
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
131	Mockhorn Island	253.2	%	5	20	20		50		5	-													High marsh ridge extending along the center of the island; marsh surrounds upland areas of cedar, myrtle, saltbushes, etc.	XIII
			acres	12.7	50.6	50.6		126.6		12.7	-														
132	Mockhorn Island	936.0	%	95	-			5		-	-													Marsh section of mostly tall and intermediate saltmarsh cordgrass; scattered areas throughout of short form cordgrass and saltwort; grades west to high marsh ridge.	I
			acres	889.2	-			46.8		-	-														
133	Mockhorn Island	196.0	%	85	2	2		10		1	-													Broad marsh section of predominately salt marsh cordgrass; high marsh areas of sea oxeye and saltbushes scattered throughout; grades east to high marsh ridge at center of island.	I
			acres	166.6	3.9	3.9		19.6		2.0	-														
134	Mockhorn Island	804.0	%	90	-	-		10		-	-													Broad marsh section dominated by areas of tall and intermediate saltmarsh cordgrass; scattered ridges of high marsh and areas of short form cordgrass and saltwort.	I
			acres	723.6	-	-		80.4		-	-														
135	Mockhorn Island	736.1	%	80	5	5		10		-	-													Large marsh section dominated by saltmarsh cordgrass; grades to numerous high marsh ridges and at highest elevations to upland; large diked area at south end of marsh.	I
			acres	588.9	36.8	36.8		73.6		-	-														
136	Main Ship Shoal Channel	1580.	%	95				5																Extensive marsh section; tall and intermediate form saltmarsh cordgrass along channels grades to areas of short form mixed with saltwort.	I
			acres	1501.				79.																	
137	Main Ship Shoal Channel	343.8	%	98				2																Extensive marsh section dominated by tall and intermediate forms of saltmarsh cordgrass.	I
			acres	336.9				6.9																	
	Total Section V	10742.	%	90	2	1	-	7	-	-	-			-											
			acres	9646.	196.1	148.9	9.2	723.3	3.8	14.7	-														

Section VI. Wreck, Ship Shoal, Godwin, Myrtle, Mink Islands

This section of shoreline includes those barrier islands and marsh areas located between Cobb Island to the north, Mockhorn Island to the west and Smith Island to the south. Wreck Island, which is the furthest north of these, consists of extensive marsh areas (#142, 143) located behind a barrier of beach and dune. The upland portion of this island has been subject to active erosion and westward movement in recent history and therefore much of the adjacent salt marsh, especially along the southern half, has been subject to storm overwash. The marsh areas which remain are of predominately tall and intermediate height saltmarsh cordgrass (Type I) with new marsh growth evident along the western edge. Scattered throughout these low marsh areas are ridges and short-form saltmarsh cordgrass mixed with saltwort (Type I), while immediately adjacent to the upland section of the island there is a zone of high marsh consisting primarily of saltmeadow grasses with saltbushes (Type II, IV).

West of Wreck Island there are several marsh islands, the largest of which is Man and Boy Marsh (#138). These areas are characterized by predominately tall and intermediate forms of saltmarsh cordgrass with interior sections of short-form saltmarsh cordgrass and saltwort.

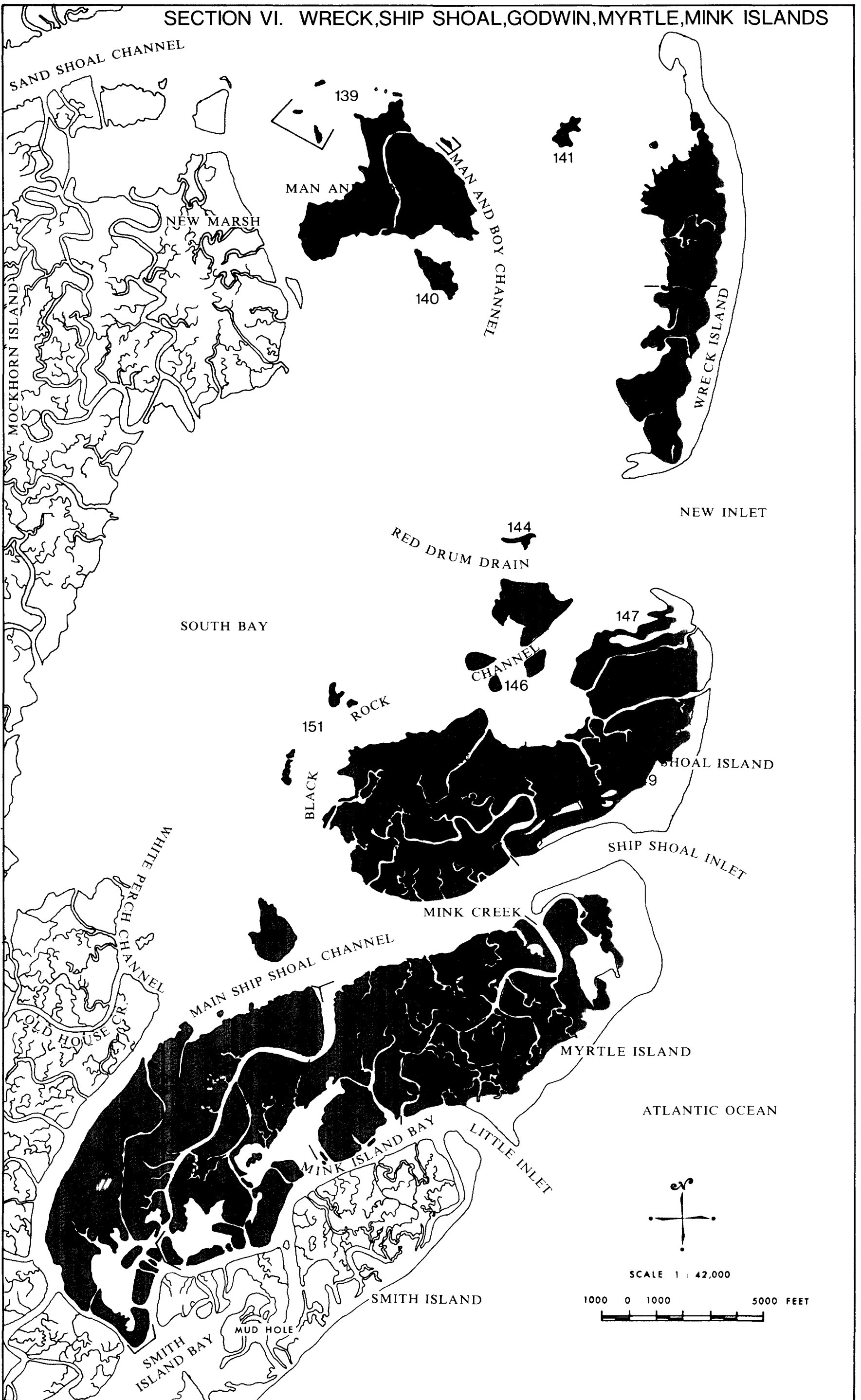
Ship Shoal Island consists of extensive saltmarsh cordgrass dominated marshes located behind an upland barrier of beach and small dunes. Severe erosion along this upland portion results in frequent storm overwashes on to the marsh, especially at the northern end (#147). At the southern end of the island (#149) there are several upland ridges within the marsh. These are vegetated with upland grasses and saltbushes and are surrounded by high marsh zones as well as areas of short-form saltmarsh cordgrass and saltwort.

Godwin Island (#150) lies adjacent to Ship Shoal Island and it is composed primarily of tall and intermediate forms of saltmarsh cordgrass. Scattered throughout, especially along the northern shoreline, are areas of short-form saltmarsh cordgrass mixed with saltwort. There are also numerous smaller marsh islands near both Ship Shoal and Godwin Islands (#144, 146, 151, 152). These are composed primarily of tall-form saltmarsh cordgrass but several contain areas of short-form saltmarsh cordgrass mixed with saltwort.

The marshes of Myrtle Island (#153) are composed primarily of tall-form saltmarsh cordgrass. However, adjacent to the upland section of the island these grade to a zone of short-form saltmarsh cordgrass mixed with saltwort and finally to a high marsh zone of saltbushes.

Mink Island (#154) is an extensive marsh area adjacent to Myrtle Island. It is composed primarily of tall and intermediate forms of saltmarsh cordgrass but at the northeast corner there is an area of high marsh surrounding several remnants of a beach ridge. Big Creek Marsh (#155, 156) extends west from Mink Island to Main Ship Shoal Channel. It too is composed largely of tall-form saltmarsh cordgrass and saltwort found along the edge of its northern channel. Much of the saltmarsh cordgrass along its southern end has been recently established. This appears due to the recent closing of several inlets along Smith Island with the resultant spread of the cordgrass onto the former inlets' flood tide deposits.

SECTION VI. WRECK, SHIP SHOAL, GODWIN, MYRTLE, MINK ISLANDS



Section VI. Wreck, Ship Shoal, Godwin
Myrtle, Mink Islands

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
138	Man and Boy Marsh	414.7	%	95				5		-	-													Large marsh island; dominated by saltmarsh cordgrass with tall form predominately along channels; extensive interior sections with short form cordgrass and saltwort.	I
			acres	394.0					20.7		-	-													
139	Man and Boy Marsh	6.6	%	100				-																Numerous small patches of marsh along tidal flat; predominately tall form saltmarsh cordgrass.	I
			acres	6.6					-																
140	South Bay	27.3	%	95				5		-	-													Marsh islands of predominately tall and intermediate form saltmarsh cordgrass; interior sections of short form cordgrass with saltwort.	I
			acres	25.9					1.4		-	-													
141	South Bay	12.7	%	90				10		-	-													Marsh island; dominated by saltmarsh cordgrass with interior sections mostly short form cordgrass and saltwort; large areas of oyster shell.	I
			acres	11.4					1.3		-	-													
142	Wreck Island	259.5	%	95	1	-		4		-	-													Extensive marsh section formed behind barrier island; predominately tall and intermediate form saltmarsh cordgrass with scattered areas of short form; grades to band of saltwort along upland; then zone of high marsh species.	I
			acres	246.5	2.6	-		10.4		-	-														
143	Wreck Island	227.0	%	95	1	-		4		-	-													Extensive marsh section; predominately tall and intermediate form saltmarsh cordgrass with areas of short form; band of high marsh species along upland, sand overwashed from beach in several sections.	I
			acres	215.6	2.3	-		9.1		-	-														
144	New Inlet	5.2	%	100				-																Marsh island of predominately tall form saltmarsh cordgrass.	I
			acres	5.2					-																
145	New Inlet	91.3	%	98				2																Large marsh island of predominately tall and intermediate form saltmarsh cordgrass; band of short form cordgrass with some saltwort along eastern edge.	I
			acres	89.5					1.8																

Section VI. Wreck, Ship Shoal, Godwin
Myrtle, Mink Islands
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Oiney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
146	Black Rock Channel	28.8	%	98				2																Several marsh islands along sides of channel; predominately tall and intermediate form salt-marsh cordgrass but with ridges of short form cordgrass and saltwort.	I
			acres	28.2			0.6																		
147	Ship Shoal Island	77.0	%	90	5			5		-	-													Extensive marsh section north of marsh channel; dominated by saltmarsh cordgrass but grades to zone of meadow along sand spit.	I
			acres	69.3	3.8		3.8		-	-															
148	Ship Shoal Island	159.5	%	97	-			3		-	-										-			Extensive marsh section formed between two large marsh channels; predominately tall and intermediate form saltmarsh cordgrass with short form areas along beach.	I
			acres	154.7	-		48		-	-												-			
149	Ship Shoal Island	416.0	%	95	-	-		5		-	-													Extensive marsh section formed behind main body of island; tall and intermediate forms of cordgrass grade to wide short form and saltwort areas adjacent to uplands; salt-bushes in several locations.	I
			acres	395.2	-	-	20.8		-	-															
150	Godwin Island	850.0	%	98	-			2		-														Extensive marsh area adjacent to Ship Shoal Island; mostly tall and intermediate form saltmarsh cordgrass; zone of short form cordgrass with saltwort evident around perimeter of marsh.	I
			acres	833.0	-		17.0		-																
151	Black Rock Channel	14.5	%	100				-																Several marsh islands dominated by tall form saltmarsh cordgrass.	I
			acres	14.5			-																		
152	Ship Shoal Channel	56.0	%	97				3		-														Large marsh island of mostly tall and intermediate form saltmarsh cordgrass; short form cordgrass with saltwort evident at north end.	I
			acres	54.3			1.7		-																
153	Myrtle Island	523.5	%	95	-	-		5		-	-													Extensive marsh formed behind beach and dune system of barrier island; short form cordgrass and saltwort with fringe of saltbush along upland; remainder of marsh mostly tall form cordgrass.	I
			acres	497.3	-	-	26.2		-	-															

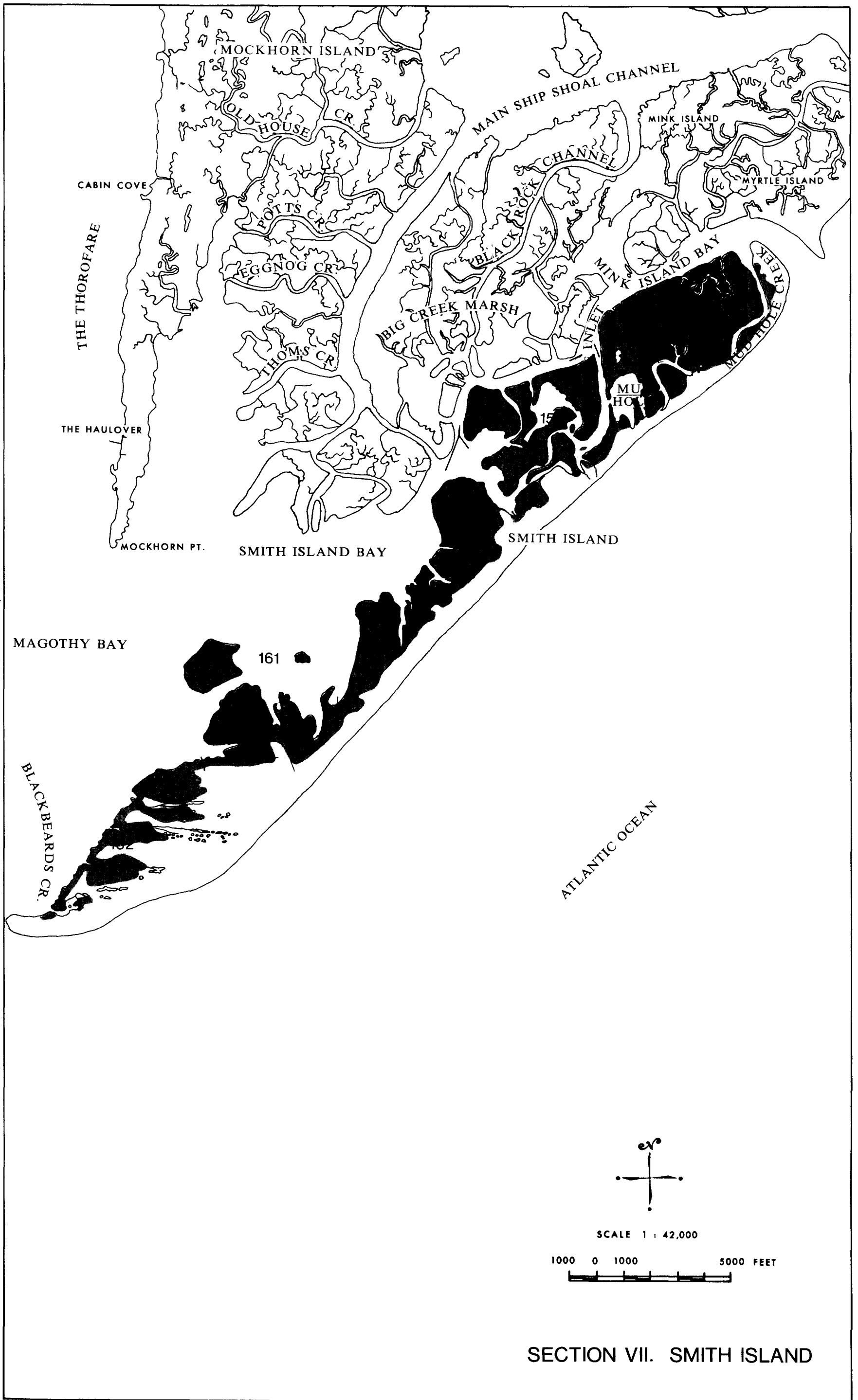
Section VI. Wreck, Ship Shoal, Godwin
Myrtle, Mink Islands
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
154	Mink Island	731.7	%	95	-	-		5		-	-													Extensive marsh area adjacent to Myrtle Island; predominately tall and intermediate form saltmarsh cordgrass; upland area of cedar, grasses, etc. in northeast corner is surrounded by band of high marsh.	I
			acres	695.1	-	-		36.6		-	-														
155	Big Creek Marsh	430.4	%	100				-																Extensive marsh area; predominately tall form saltmarsh cordgrass; new growth at southern end.	I
			acres	430.4				-																	
156	Big Creek Marsh	979.5	%	98				2																Extensive marsh section; southern portion mostly tall form cordgrass with some new growth; short form cordgrass with saltwort along channel at northern end.	I
			acres	959.5				19.6																	
	Total Section VI	5310.8	%	97	-	-		3		-	-														
			acres	5126.8	8.7	-		175.8		-	-														

Section VII. Smith Island

This section describes the marsh areas immediately adjacent to and west of the upland beach, dune and forested ridges of Smith Island. For the most part these marshes are characterized by tall and intermediate forms of saltmarsh cordgrass (Type I) with scattered high marsh species (Type II, IV) along the upland borders. At the northern end of the island overwash and encroachment from the beach is slowly destroying the marsh (#157). In contrast, the marshes (#158, 159, 160) along much of the middle sections of the island are tall-form saltmarsh cordgrass which has become established on sand deposits left after the recent closing of two tidal inlets.

At the southern end of the island the marshes exist as pocket areas between ridges of upland (#162). Saltmarsh cordgrass fringes along the Magothy Bay shoreline and grades inland to a zone of saltwort. The interior section of the marsh pockets are largely high marsh, with salt meadow grasses, saltbushes and sea-oxeye most abundant.



SECTION VII. SMITH ISLAND

Section VII. Smith Island

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
157	Smith Island	527.2	%	98	-	-		2		-	-							-			-		-	Extensive marsh sections at northern end of island; predominately tall form saltmarsh with zone of high marsh species along upland edge of island; overwashed from beach in several sections.	I
			acres	516.7	-	-		10.5		-	-									-			-		
158	Smith Island	302.2	%	100	-	-		-		-	-										-		-	Extensive marsh area in the vicinity of the recently closed Bungalow Inlet; predominately tall form saltmarsh cordgrass with much new growth on mud flats.	I
			acres	302.2	-	-		-		-	-											-			
159	Smith Island	368.2	%	95	-	-		5		-	-										-		-	Extensive marsh section formed behind middle portion of island; new growth of saltmarsh cordgrass at north end of section.	I
			acres	349.8	-	-		18.4		-	-											-			
160	Smith Island	226.0	%	85	2	3		10		-	-										-		-	Extensive marsh section; predominately tall form saltmarsh cordgrass grades to band of saltwort along uplands then to high marsh of saltbushes, sea oxeye and salt meadow grasses.	I
			acres	192.1	4.5	6.8		22.6		-	-											-			
161	Smith Island	66.2	%	95	-			5		-	-													Marsh islands dominated by tall form saltmarsh cordgrass; new growth of cordgrass on tidal flats evident; interior of largest island has some high marsh.	I
			acres	62.9	-			3.3		-	-														
162	Smith Island	171.4	%	35	15	10	-	25		10	2										3		-	Saltmarsh cordgrass fringe and pocket areas at south end of island grade to zone of saltwort then high marsh of saltbushes, sea oxeye and meadow grasses.	XII
			acres	60.0	25.7	17.1	-	42.8		17.1	3.4											5.1			
	Total Section VII	1661.2	%	89	2	3	-	6		1	-														
			acres	1484	30.2	23.9	-	97.6		17.1	3.4											5.1			

Section VIII. Cape Charles, Fishermans Island

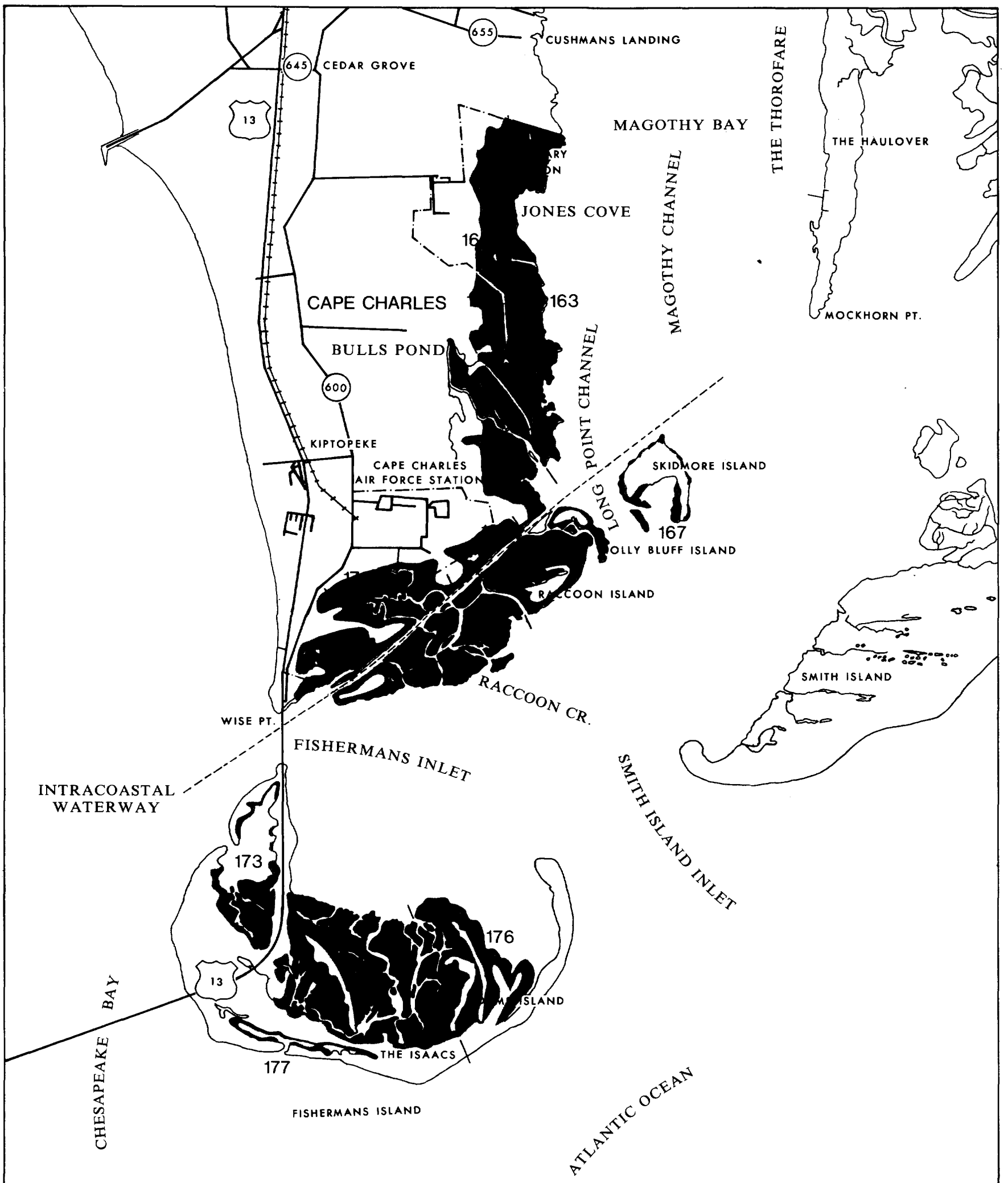
The wetland areas along the ocean side of Cape Charles consist of both broad, fringing marshes found along Magothy Bay (#163-166) and extensive marsh areas at Raccoon Creek (#168-172). The fringing marsh typically grades from a zone of tall-form saltmarsh cordgrass (Type I) along the Magothy Bay shoreline through a zone of short-form saltmarsh cordgrass mixed with saltwort (Type I, X), to high marsh areas (Type II, IV) adjacent to the uplands. Throughout the tall saltmarsh cordgrass zone (#163) there also are found intermittent ridges of high marsh which parallel the upland. These ridges are vegetated largely with sea-oxeye as well as saltwort, saltmeadow grasses and saltwort. Most probably they are a continuation of the ancient beach ridges found further north and described in Section I, III and V. Adjacent to the uplands, the high marsh is composed largely of saltbushes with an understory of saltmeadow grasses and scattered stands of black needlerush. One high marsh area (#165) has been diked, however a culvert allows tidal flushing to the interior.

Further south, the marsh areas located in the vicinity of Raccoon Creek are divided by a dredged channel of the intercoastal waterway. North of this channel the marshes (#170, 171) are largely of tall-form saltmarsh cordgrass although there are also areas of short-form saltmarsh cordgrass and saltwort (#169). There are in addition, several marsh areas which have been filled, probably through spoil deposition, and adjacent to these areas reed grass (Type VIII) is invading the bordering high marsh.

South of the intercoastal waterway, in those marsh areas well drained by tidal channels, there is predominately tall-form saltmarsh cordgrass growing (#172). However, in the vicinity of Raccoon Island (#168) there are several upland ridges which are surrounded by high marsh. These may be a continuation of the ridge areas found along the Mockhorn Island (Section V). Skidmore Island (#167) on the other hand is largely upland. It is surrounded by a fringe of saltmarsh cordgrass which grades to only a narrow zone of high marsh.

Fisherman's Island is the southern-most area of salt marsh found in Northampton County. Because it is an accreting island, much of the marsh associated with it has been recently established and is characteristically dominated by stands of tall-form saltmarsh cordgrass. The construction of highway Route 13 has divided this marsh into two sections. West of Route 13 the marsh (#173) consists largely of saltmarsh cordgrass with some high marsh species growing along the upland edge. Since the highway construction was completed a long spit has developed from north to south, turning this area into a shallow tidal cove and allowing for rapid growth of saltmarsh cordgrass at the northern end.

The majority of marsh found on Fisherman's Island occurs east of Route 13 (#174-177). Because the island has been rapidly growing eastward, much of the marsh is of recent origin and is dominated by tall-form saltmarsh cordgrass. There are, however, numerous upland ridges found throughout the marsh which mark the earlier stages of island development. Adjacent to these ridges areas and along the main upland body of the island there exist high marsh zones with abundant saltwort, saltmeadow grasses, sea-oxeye and saltbushes. Along the southern end of the island there is a narrow lagoon that is formed behind a beach ridge and drained through a central tidal opening (#177). This marsh is of largely saltmarsh cordgrass which grades into a high marsh zone of saltmeadow grasses.



SCALE 1 : 42,000



SECTION VIII. CAPE CHARLES, FISHERMANS ISLAND

Section VIII. Cape Charles, Fisherman's Island

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
163	Magothy Bay	301.3	%	85	5	-	-	10		-	-						-	-				-	-	Tall form saltmarsh cordgrass with intermittent ridge of high marsh species along bay shoreline; grades back to short form cordgrass with saltwort and saltmeadow areas.	I
			acres	256.1	15.1	-	-	30.1																	
164	Magothy Bay	70.5	%		30	50	20	-	-	-	-							-						Interior section of broad fringing marsh; dominated by saltbushes with understory of meadow; abundant needlerush throughout.	V
			acres		21.2	35.2	14.1	-	-	-	-														
165	Magothy Bay	43.5	%	20	40	40		-	-	-	-												-	Diked area of predominately high marsh; tidal flushing permitted through culvert; saltmarsh cordgrass in center near culvert grades to meadow and saltbushes along the upland.	XII
			acres	8.7	17.4	17.4		-	-	-	-														
166	Mill Creek	149.0	%	80	5	5	-	10	-	-	-							-						Embayed marsh area; filled causeway built across marsh forms northern border; predominately saltmarsh cordgrass with zone of high marsh along upland edges.	I
			acres	119.2	7.4	7.4	-	14.9	-	-	-														
167	Skidmore Island	18.4	%	90	5	-		5		-	-													Fringe of tall and intermediate form saltmarsh cordgrass around island; cordgrass grades to zone of high marsh species along upland edge.	I
			acres	16.6	0.9	-	0.9		-	-															
168	Racoon Island	144.2	%	55	20	5	-	20		-	-											-	-	Saltmarsh cordgrass along water grades to interior sections of saltwort then high marsh areas of saltbushes and saltmeadow grasses.	I
			acres	79.3	28.8	7.2	-	28.8		-	-														
169	Cape Charles	39.5	%	60	15	5	-	20		-	-							-					-	Marsh section of predominately short form saltmarsh cordgrass and saltwort; zone of saltbushes and saltmeadow grasses along upland.	I
			acres	23.7	5.9	2.0	-	7.9		-	-														
170	Cape Charles	103.0	%	90	5	-		5		-	-							-						Embayed marsh area north of Intercoastal Waterway; dominated by saltmarsh cordgrass with some areas mixed with saltwort; zone of high marsh around upland perimeter.	I
			acres	92.7	5.2	-	5.2		-	-															

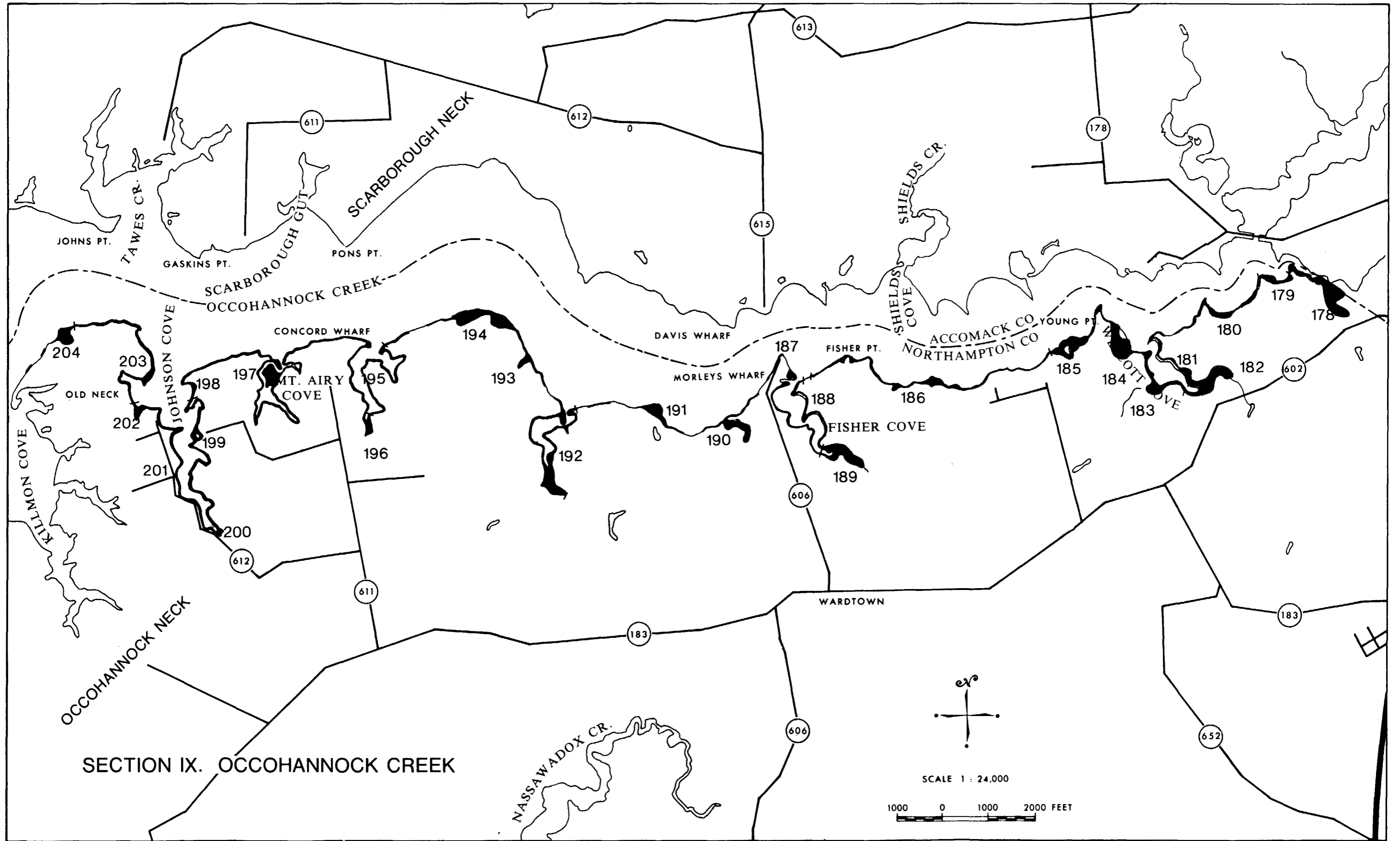
Section VIII. Cape Charles, Fishermans Island
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
171	Raccoon Creek	208.0	%	85	3	2		10		-	-						-	-				-		Extensive marsh area south of intercoastal waterway; predominately saltmarsh cordgrass with areas of saltwort; several ridges of saltbushes and other high marsh species.	I
			acres	176.8	6.2	4.2		20.8		-	-								-	-					
172	Cape Charles	76.0	%	75	5	5	-	15	-	-	-						-	-				-	-	Embayed marsh area; predominately saltmarsh cordgrass with saltwort; grades to zone of high marsh around perimeter; large area of sandy spoil at southern end.	I
			acres	57.0	3.8	3.8	-	11.4	-	-	-								-	-					
173	Fishermans Island	74.5	%	95	3	-		2		-	-							-	-			-	-	Shallow tidal cove dominated by extensive area of saltmarsh cordgrass; high marsh species form zone between cordgrass and upland dunes; high marsh fringe at north end of cove with some pioneer growth of cordgrass.	I
			acres	70.8	2.2	-		1.5		-	-									-	-				
174	Fishermans Island	94.9	%	80	10	4	-	5		1	-							-	-			-	-	Extensive marsh area of predominately tall form saltmarsh cordgrass; partially separated from adjacent marsh by dune ridge; cordgrass grades to zone of saltwort then to zone of saltmeadow and saltbushes.	I
			acres	75.9	9.5	3.8	-	4.7		0.9	-									-	-				
175	Fishermans Island	318.8	%	95	-	-	-	5		-	-							-	-			-	-	Extensive marsh area dominated by tall form saltmarsh cordgrass; grades to zone of high marsh along edge of upland dunes; high marsh grades from saltwort to sea oxeye and saltmeadow.	I
			acres	302.9	-	-	-	15.9		-	-									-	-				
176	Fishermans Island	109.0	%	65	15	2	-	15		2								1				-	-	Marsh area at east end of island; saltmarsh cordgrass extends between ridges of upland dunes and high marsh species; high marsh predominately saltwort, sea oxeye, saltmeadow.	I
			acres	70.8	16.3	2.2	-	16.3		2.2										1.1					
177	Fishermans Island	20.2	%	70	30	-	-	-		-								-	-			-	-	Shallow tidal pond with marsh fringe; saltmarsh cordgrass along open water grades back to areas of saltmeadow grasses.	I
			acres	14.1	6.1	-	-	-		-		-								-	-				
	Total Section VIII.	1770.8	%	77	8	5	1	9	-	-	-							-	-			-	-		
			acres	1365.1	146.0	83.2	14.1	158.4	-	3.1	-	-								-	1.1				

Section IX. Occohannock Creek

This section of Northampton County shoreline includes those marsh areas located along Occohannock Creek as well as several small coves which empty into the creek. It marks the first section of this report describing the Bay side marshes of the county. The wetlands are for the most part either fringe or pocket areas and are largely vegetated with saltmarsh cordgrass (Type I). There are however, numerous areas of high marsh scattered throughout (Type II, IV). Generally these high marsh areas of saltmeadow grasses and saltbushes are found in the interior portions of the pocket or spit marshes. In fringing marshes they occur as a narrow zone between the saltmarsh cordgrass and the upland.

Although the tidal marshes located along this section of shoreline are generally small in size they are very important in helping to protect much of the shoreline from erosion as well as filtering much of the runoff from the upland.



SECTION IX. OCCOANOCK CREEK

Section IX. Occohannock Creek

#	Marsh Location	Total Acres		Saltmarsh	Saltmeadow	Saltbushes	Black	Saltwort	Cattails	Sea	Sea	Saltmarsh	Big	Marsh	Marsh	Water	Saltmarsh	Saltmarsh	Olney	Marsh	Sea	Reed	Suaeda	Observations	Marsh Type
				Cordgrass	Grasses	Needlerush	Oxeye	Lavender	Bulrush	Cordgrass	Hibiscus	Mallow	Hemp	Aster	Fimbristylis	Threesquare	Fleabane	Rocket	Grass						
178	Occohannock Creek	7.2	%	55	10	20	-		5			5	-			5	-							Northampton portion of pocket marsh only; saltbushes more abundant in upstream portion of marsh; saltmarsh cordgrass throughout.	I
			acres	4.0	0.7	1.4	-		0.4			0.4	-				0.4	-							
179	Occohannock Creek	1.2	%	65	-	15	10		5			-	5			-	-							Fringing marsh; dominated by saltmarsh cordgrass with scattered needlerush, cattails and big cordgrass; saltbushes along upland.	I
			acres	0.8	-	0.2	0.1		0.1			-	0.1				-	-							
180	Occohannock Creek	2.0	%	60	-	20	15		-			-	5			-	-							Saltmarsh cordgrass dominated marsh fringe; extends along creek shoreline around several spits and into Wescott Cove.	I
			acres	1.2	-	0.4	0.3		-			-	0.1				-	-							
181	Wescott Cove	0.70	%	40	5	5	45		5			-	-			-	-							Small pocket marsh dominated by saltmarsh cordgrass and black needlerush; cattails at head.	XII
			acres	0.28	0.04	0.04	0.32		0.04			-	-		-		-	-							
182	Wescott Cove	4.3	%	55	10	30	-		5			-	-			-	-							Pocket marsh; grades from saltmarsh cordgrass in lower portion to saltbushes with some cattails in upstream portion.	I
			acres	2.4	0.4	1.3	-		0.2			-	-		-		-	-							
183	Wescott Cove	1.5	%	75	-	5			5			5	-			10	-							Pocket marsh; dominated by saltmarsh cordgrass with abundant water hemp; other species along upland border.	I
			acres	1.1	-	0.1			0.1			0.1	-				0.2	-							
184	Wescott Cove	3.7	%	30	10	-	55		5	-	-							-						Pocket marsh; extends back around area of trees; predominately needlerush with saltmarsh cordgrass along creek channels.	III
			acres	1.1	0.4	-	2.0		0.2	-	-									-					
185	Occohannock Creek	3.5	%	65	5	5	25		-				-			-	-							Broad pocket marsh area; interior section has open pond; mostly saltmarsh cordgrass with large stands of needlerush.	I
			acres	2.3	0.2	0.2	0.9		-				-			-	-								

Section IX. Occohannock Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
186	Occohannock Creek	2.0	%	60	5	5	30		-		-		-			-			-					Saltmarsh cordgrass and black needlerush dominated marsh fringe (5-20 ft. wide); several pocket marsh areas.	I
			acres	1.2	0.1	0.1	0.6		-		-		-		-		-		-		-		-		
187	Morleys Wharf	0.60	%	25	20	25	30			-	-	-					-	-						Marsh area adjacent to parking lot and boat ramp; saltmarsh cordgrass and black needlerush grade to area of high marsh; some fill evident.	XII
			acres	0.15	0.12	0.15	0.18			-	-	-													
188	Fisher Cove	1.9	%	55	10	5	30					-				-	-							Marsh fringe around cove shoreline; dominated by saltmarsh cordgrass and black needlerush.	I
			acres	1.0	0.2	0.1	0.6						-				-	-							
189	Fisher Cove	3.3	%	80	-	-	-		20							-								Pocket marsh area at head of cove; saltmarsh cordgrass grades upstream to stands of cattail.	I
			acres	2.6	-	-	-			0.7							-								
190	Occohannock Creek	4.0	%	75	5				10			5		5	-	-	-		-					Pocket marsh dominated by saltmarsh cordgrass; interior section of pocket is largely cattails and hibiscus.	I
			acres	3.0	0.2					0.4			0.2		0.2	-	-	-		-					
191	Occohannock Creek	3.1	%	20	10	20	50	-		-	-	-					-	-						Spit marsh formed behind berm of saltbush and cedar; dominated by high marsh species.	III
			acres	0.6	0.3	0.6	1.6	-		-	-	-													
192	Occohannock Creek	6.2	%	60	-	2	35		2		-	1		-		-	-							Cove marsh; spits at mouth of creek mostly saltmarsh cordgrass; cordgrass fringe along along cove; needlerush and cordgrass pocket at head.	I
			acres	3.7	-	0.1	2.2		0.1		-	0.1		-		-	-								
193	Occohannock Creek	0.60	%	60	5	15			20		-	-	-	-		-								Small pocket marsh; some cattails in interior but predominately saltmarsh cordgrass with high marsh species along upland edge.	I
			acres	0.36	0.03	0.09			0.12		-	-	-	-		-									

Section IX. Occohannock Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Oney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
194	Occohannock Creek	6.7	%	60	10	15	10		5	-	-	-		-		-	-							Broad fringing marsh; berm of saltbushes and meadow along creek edge; interior dominated by saltmarsh cordgrass.	I
			acres	4.0	0.7	1.0	0.7		0.3	-	-	-		-		-		-	-						
195	Concord Wharf	0.90	%	85	5	10			-	-		-				-	-							Saltmarsh cordgrass fringe around cove shoreline; includes two cordgrass spits at mouth with saltbushes at highest elevations on spit.	I
			acres	0.76	0.04	0.09			-	-		-		-			-	-							
196	Concord Wharf	1.8	%	85	-	5			10		-	-		-		-	-							Small pocket marsh at head of cove; mostly saltmarsh cordgrass with saltbushes along uplands; cattails at head of marsh.	I
			acres	1.5	-	0.1			0.2		-	-		-		-		-	-						
197	Mt. Airy Cove	4.5	%	90	2	5	-	-	3	-	-	-		-		-	-							Small spit of saltbushes across mouth then broad area of saltmarsh cordgrass; marsh fringe around upper portion of cove with small cattail pocket at head.	I
			acres	4.0	0.1	0.2	-	-	0.1	-	-	-		-		-		-	-						
198	Johnson Cove	0.80	%	5	5	90				-		-												Small fringe of saltmarsh cordgrass around high marsh berm that is vegetated with saltbushes.	IV
			acres	0.04	0.04	0.72					-		-												
199	Johnson Cove	1.1	%	90	5	5	-		-		-			-		-	-							Marsh fringe of saltmarsh cordgrass 2-10 ft. wide along a section of cove shoreline; several marsh spits and several pockets with cattails and needlerush.	I
			acres	1.0	0.1	0.1	-		-		-		-		-		-	-							
200	Johnson Cove	0.40	%	35	-	-	60		5			-			-									Small pocket marsh at head of cove; dominated by needlerush with abundant saltmarsh cordgrass.	III
			acres	0.14	-	-	0.24		0.02				-		-										
201	Johnson Cove	0.70	%	90	5	5	-		-		-			-		-	-							Marsh fringe 2-10 ft. wide along section of cove shoreline; includes small marsh spit.	I
			acres	0.63	0.04	0.04	-		-		-		-		-		-	-							

Section IX. Occohannock Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh	Saltmeadow	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olny Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
				Cordgrass	Grasses																				
202	Johnson Cove	1.3	%	85	5	10		-		-	-	-					-							Small pocket marsh area; dominated by salt-marsh cordgrass; high marsh species along upland.	I
			acres	1.1	0.1	0.1		-		-	-	-							-						
203	Johnson Cove	2.0	%	90	5	5		-		-	-	-					-							5 ft. wide saltmarsh cordgrass fringe around small dredged pocket; widens to 50 ft. along a section of shoreline then narrows again.	I
			acres	1.8	0.1	0.1		-		-	-	-							-						
204	Occohannock Creek	2.0	%	90	5	5			-	-	-	-		-				-						Saltmarsh cordgrass dominated pocket marsh formed behind berm of saltbushes and meadow grasses.	I
			acres	1.8	0.1	0.1			-	-	-	-								-					
	Total Section IX	68.0	%	63	6	11	14	-	4	-	-	1	-	-	-	1	-	-	-	-					
			acres	42.6	4.0	7.3	9.7	-	3.0	-	-	0.8	0.2	0.2	-	0.6	-	-	-	-					

Section X. Nassawadox Creek Area

Because of the extensive shoreline found along Nassawadox Creek and its tributaries this section is divided into three parts. Part 1 includes that shoreline which extends from Killmon Cove in the north to the lower portion of Nassawadox Creek. Part 2 includes those marsh areas found along the upper two thirds of Nassawadox Creek as well as along its several large tributaries. Part 3 includes marsh found near the mouth of Nassawadox Creek as well as along Church Creek and Westerhouse Creek.

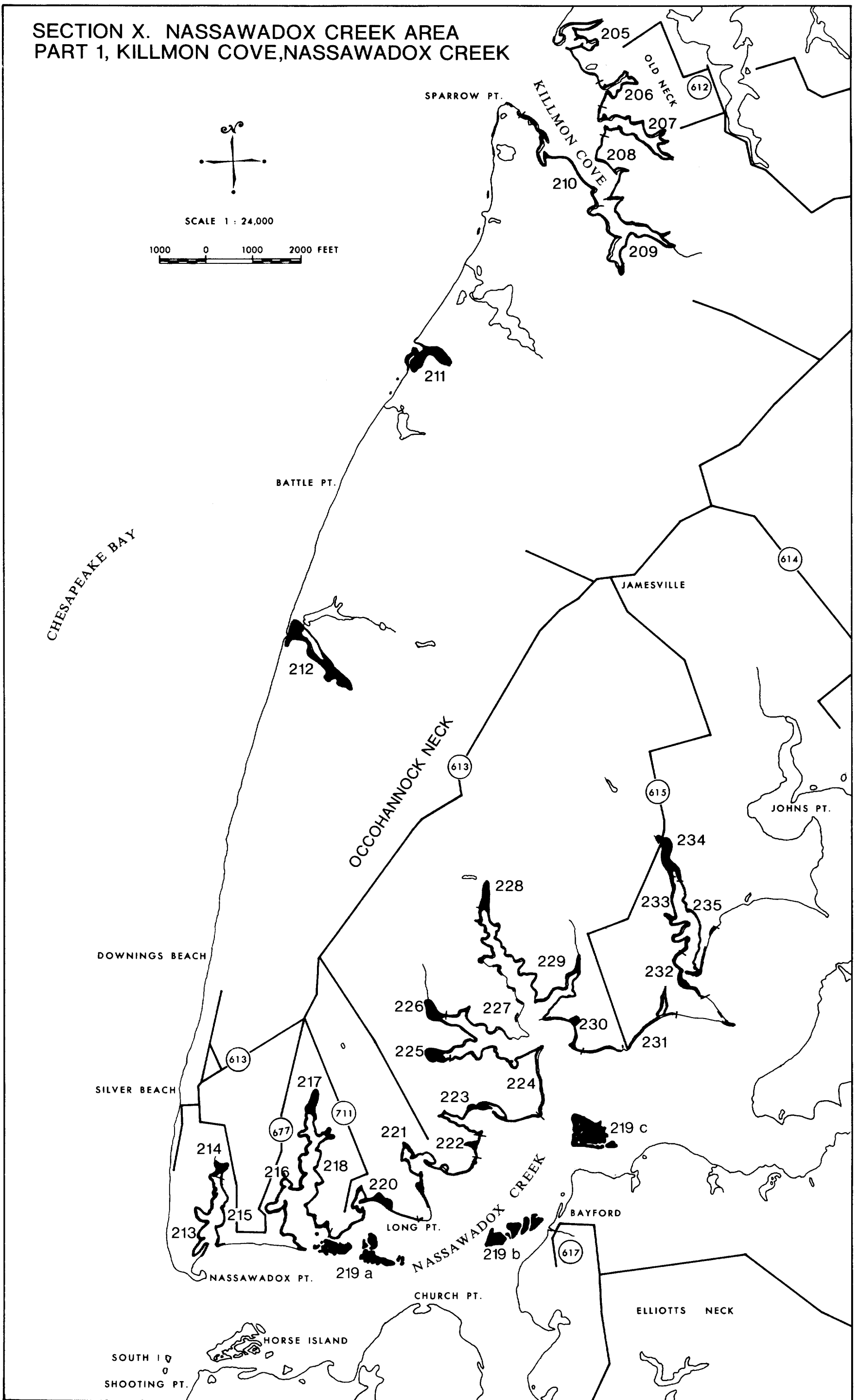
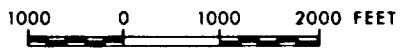
For the most part the shoreline in this section which borders along the Chesapeake Bay is devoid of marsh. This is due to the high energy nature of the area which results from the lack of protection from winds of the north and west. Unfortunately, because there is no established marsh present it is the fastlands which must absorb the storm waves. The results of this situation are severe upland erosion and a steadily retreating shoreline.

In contrast to the sandy beach areas and eroding cliffs found along the Chesapeake Bay front, the shoreline found within the numerous creeks and covers of Nassawadox Creek has an almost continuous fringe of marsh as well as numerous pocket marsh areas. The marsh fringe is generally dominated by saltmarsh cordgrass (Type I) but in areas may be mixed with significant amounts of black needlerush (Type III). These areas then grade to narrow zones of high marsh species which border the uplands and are composed largely of saltbushes (Type V) and saltmeadow grasses (Type II). In the numerous pocket marshes described in this section, saltmarsh cordgrass with black needlerush predominates. However, interior sections of many of the marshes contain large areas of high marsh species as well as species such as cattails and marsh hibiscus (Type VI) which can tolerate only reduced salinities.

SECTION X. NASSAWADOX CREEK AREA
PART 1, KILLMON COVE, NASSAWADOX CREEK



SCALE 1 : 24,000



Section X. Nassawadox Creek Area
Part 1. Killmon Cove, Nassawadox Creek

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type	
205	Killmon Cove	1.2	%	90	5	5	-	-			-	-													Saltmarsh cordgrass marsh fringe 2-30 ft. wide along shoreline; grades back to meadow, saltbush, bulrush; several small pocket and spit marsh areas.	I
			acres	1.1	0.1	0.1	-	-			-	-														
206	Killmon Cove	0.50	%	40	10	10	40		-	-	-	-													10 ft. wide marsh fringe around shoreline of small cove; mostly saltmarsh cordgrass and black needlerush.	XII
			acres	0.20	0.05	0.05	0.20		-	-	-	-														
207	Killmon Cove	0.80	%	80	5	10	5		-	-	-	-													5-10 ft. wide marsh fringe around cove shoreline; several small pockets at head of cove.	I
			acres	0.64	0.04	0.08	0.04		-	-	-	-														
208	Killmon Cove	0.40	%	90	5	5	-		-	-	-	-													Narrow marsh fringe along section of shoreline; includes small pocket area.	I
			acres	0.36	0.02	0.02	-		-	-	-	-														
209	Killmon Cove	1.2	%	85	5	5	-		5		-	-													Saltmarsh cordgrass fringe along shoreline around upper end of cove; several small pocket marsh areas with cattails.	I
			acres	1.0	0.1	0.1	-		0.1		-	-														
210	Killmon Cove	1.00	%	70	10	15	5			-	-	-						-	-						Marsh fringe along section of shoreline; includes small spit with high marsh species and small pocket marsh area.	I
			acres	0.70	0.10	0.15	0.05			-	-	-								-	-					
211	Chesapeake Bay	6.1	%	80	10	10			-		-	-													Pocket marsh with berm of saltbush and meadow grasses partially across front; interior mostly saltmarsh cordgrass.	I
			acres	4.9	0.6	0.6			-		-	-														
212	Chesapeake Bay	8.4	%		25	-	-		50					25	-	-									Irregularly flooded pocket marsh; berm of sand along beach in front restricts flooding during average high tides; branch dammed forming non-tidal pond.	XI
			acres		2.1	-	-		4.2					2.1	-	-										

Section X. Nassawadox Creek Area
Part 1. Killmon Cove, Nassawadox Creek
(continued)

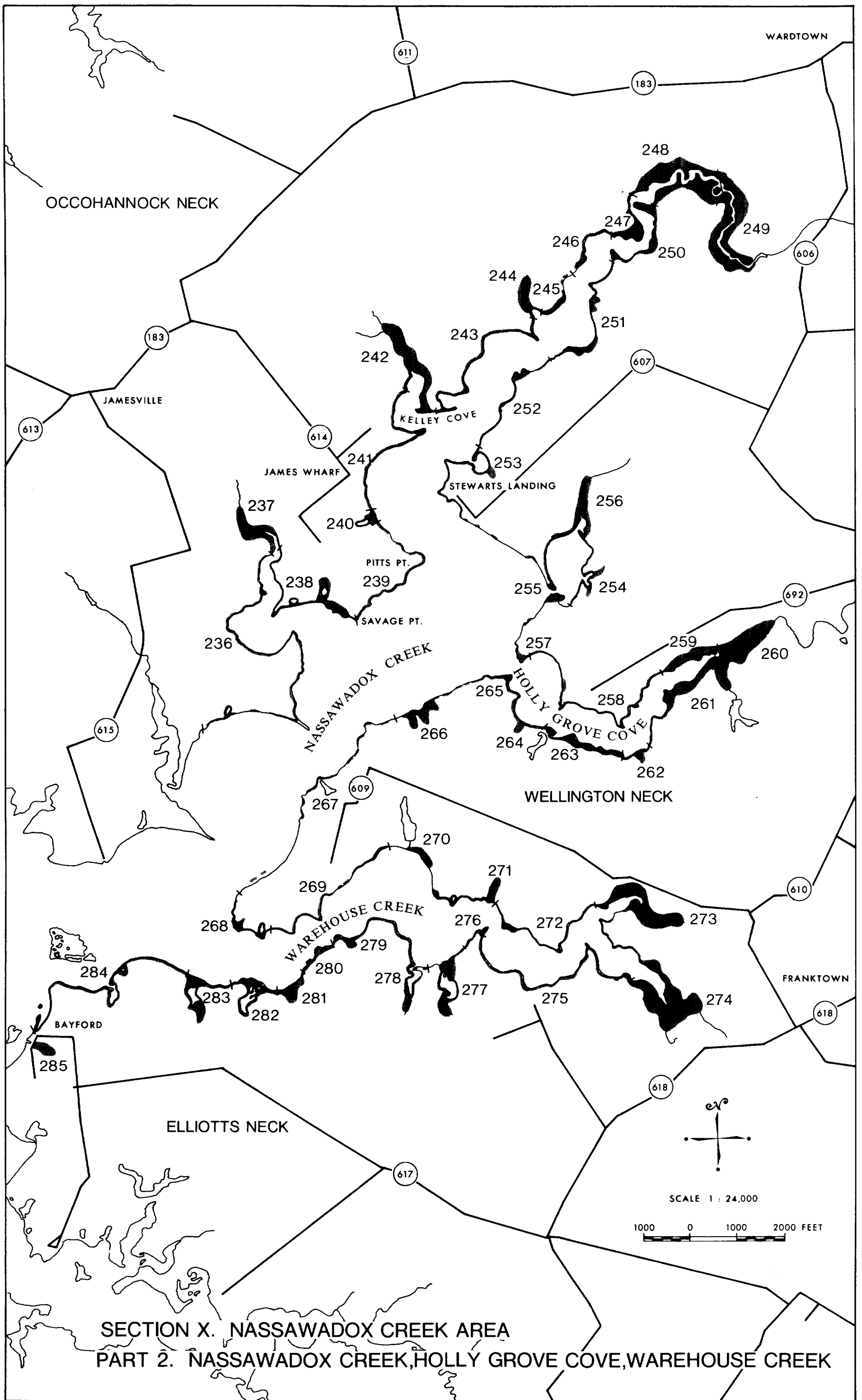
#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
213	Occohannock Neck	0.70	%	95	5	-	-																	Saltmarsh cordgrass dominated marsh fringe along western shoreline of small shallow creek.	I
			acres	0.66	0.04	-	-																		
214	Occohannock Neck	0.50	%	90	5	-	-		5			-									-			Small pocket marsh at head of creek; mostly saltmarsh cordgrass with several areas of cattail.	I
			acres	0.45	0.02	-	-		0.02																
215	Occohannock Neck	0.40	%	95	5	-	-																	Marsh fringe of saltmarsh cordgrass along eastern shoreline of small creek.	I
			acres	0.38	0.02	-	-																		
216	Occohannock Neck	1.2	%	95	4	-	-		1			-												Saltmarsh cordgrass dominated marsh fringe along western shoreline of creek; several small pockets of cattail.	I
			acres	1.1	0.1	-	-																		
217	Occohannock Neck	1.7	%	80	-	-	-		20			-		-										Pocket marsh at head of creek; dominated by saltmarsh cordgrass but with large areas of cattail.	I
			acres	1.4	-	-			0.3																
218	Occohannock Neck	0.80	%	95	-	-	-		5			-												Saltmarsh cordgrass fringe along eastern shoreline at creek; several pocket areas of cattail.	I
			acres	0.76	-	-			0.04																
219 a,b,e	Nassawadox Creek	8.6	%	100							-													Isolated islands of saltmarsh cordgrass bordering along creek the channel.	I
			acres	8.6																					
220	Occohannock Neck	1.4	%	90	5	5			-	-	-	-												Marsh fringe extending along shoreline and around small cove; includes several small spit and pocket areas.	I
			acres	1.3	0.1	0.1																			

Section X. Nassawadox Creek Area
Part I. Killmon Cove, Nassawadox Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh	Saltmeadow	Saltbushes	Black	Saltwort	Cattails	Sea	Sea	Saltmarsh	Big	Marsh	Marsh	Water	Saltmarsh	Saltmarsh	Oiney	Marsh	Sea	Reed	Suaeda	Observations	Marsh Type
				Cordgrass	Grasses	Needlerush		Oxeye	Lavender	Cordgrass	Hibiscus	Mallow	Hemp	Aster	Fimbristylis	Threesquare	Fleabane	Rocket	Grass						
221	Nassawadox Creek	1.00	%	95	-	5			-	-	-	-					-	-						Marsh fringe around shoreline of small embayment; several small marsh spits and pocket areas.	I
			acres	0.95	-	0.05			-	-	-	-							-	-					
222	Nassawadox Creek	1.3	%	75	5	10			10	-	-	-					-	-						Pocket marsh; cattails along interior section; remainder predominately saltmarsh cordgrass.	I
			acres	1.0	0.1	0.1			0.1	-	-	-							-	-					
223	Nassawadox Creek	1.2	%	75	5	-			20	-	-	-					-	-						Narrow saltmarsh cordgrass fringe and marsh spit around shoreline of small cove; several pocket marsh areas, with cattail.	I
			acres	0.9	0.1	-			0.2	-	-	-							-	-					
224	Nassawadox Creek	0.60	%	95	5	-	-		-	-	-	-					-	-						Saltmarsh cordgrass dominated marsh fringe along shoreline; includes several small pocket marsh areas.	I
			acres	0.57	0.03	-	-		-	-	-	-							-	-					
225	Occohannock Neck	2.0	%	65	-	-	10		-	-	-	-					-	-						Pocket marsh dominated by saltmarsh cordgrass; several stands of needlerush and cattail.	I
			acres	1.3	-	-	0.2		-	-	-	-							-	-					
226	Occohannock Neck	2.0	%	80	-	-	15		5	-	-	-					-	-						Pocket marsh at head of creek branch; mostly saltmarsh cordgrass with small stands of needlerush and cattails.	I
			acres	1.6	-	-	0.3		0.1	-	-	-							-	-					
227	Occohannock Neck	0.80	%	95	-	3	-		2	-	-	-					-	-						Saltmarsh cordgrass dominated marsh fringe 3-5 ft. wide; continues around shoreline of all branches of this creek system; intermittent in places.	I
			acres	0.76	-	0.02	-		0.02	-	-	-							-	-					
228	Occohannock Neck	1.7	%	80	-	-	10		10	-	-	-					-	-						Pocket marsh at head of creek branch; small areas of cattail and needlerush but dominated by saltmarsh cordgrass.	I
			acres	1.4	-	-	0.2		0.2	-	-	-							-	-					

Section X. Nassawadox Creek Area
Part I. Killmon Cove, Nassawadox Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh	Saltmeadow	Saltbushes	Black	Saltwort	Cattails	Sea	Sea	Saltmarsh	Big	Marsh	Marsh	Water	Saltmarsh	Saltmarsh	Olney	Marsh	Sea	Reed	Suaeda	Observations	Marsh Type
				Cordgrass	Grasses	Needlerush			Oxeye	Lavender	Bulrush	Cordgrass	Hibiscus	Mallow	Hemp	Aster	Fimbristylis	Threesquare	Fleabane	Rocket	Grass				
229	Occohannock Neck	0.70	%	90	-	-	5		5			-												Saltmarsh cordgrass fringe around shoreline of creek branch; several pocket areas with cattail.	I
			acres	0.63	-	-	0.4		0.4		-														
230	Occohannock Neck	1.1	%	85	5	5	5		-	-		-		-				-						Combined spit and pocket marsh along shoreline near mouth of creek.	I
			acres	0.9	0.1	0.1	0.1		-	-		-							-						
231	Nassawadox Creek	0.40	%	95	-	5	-		-															Saltmarsh cordgrass dominated marsh fringe; continues around shoreline of small tidal pond.	I
			acres	0.38	-	0.02	-		-																
232	Occohannock Neck	0.30	%	95	-	5	-		-		-	-												Marsh fringe along section of shoreline near mouth of creek; saltmarsh cordgrass dominates with scattered saltbushes.	I
			acres	0.28	-	0.02	-		-		-	-													
233	Occohannock Neck	0.50	%	85	5	10	-		-			-												Small pocket marsh and marsh fringe along both sides of creek shoreline.	I
			acres	0.42	0.02	0.05	-		-		-														
234	Occohannock Neck	4.1	%	70	3	-	20		5			-		-		2	-							Pocket marsh at head of creek; stands of needlerush with cattails and hibiscus at upper part but mostly saltmarsh cordgrass.	I
			acres	2.9	0.1	-	0.8		0.2		-		0.1	-											
235	Occohannock Neck	0.30	%	45	30	15	10	-	-		-						-	-						Spit with high marsh species surrounded by fringe of saltmarsh cordgrass.	XII
			acres	0.14	0.09	0.04	0.03	-	-		-		-						-	-					
	Total Section X Part I	52.9	%	71	7	3	4	-	12	-	-	-		-	-	-	-	-		-					
			acres	37.7	3.9	1.6	2.3	-	6.4	-	-	-	-		-	-	0.1	-	-		-				



Section X. Nassawadox Creek Area
Part 2. Nassawadox Creek, Holly Grove Cove, Warehouse Creek

#	Marsh Location	Total Acres																					Observations	Marsh Type
			%	Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olny Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass		
236	Nassawadox Creek	1.8	%	85	5	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Marsh fringe along creek shoreline around several spits and into cove; includes several pocket areas.	I
			acres	1.5	0.1	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
237	Occohannock Neck	5.8	%	55	-	-	40		5														Pocket marsh at head of small creek; abundant stands of needlerush with some cattail; dominated by saltmarsh cordgrass.	I
			acres	3.2	-	-	2.3		0.3															
238	Nassawadox Creek	4.5	%	70	15	10			5														Narrow fringe along shoreline of creek; widens near mouth to broad fringing marsh with zones of high marsh species; includes adjacent pocket marsh area.	I
			acres	3.2	0.7	0.4			0.2															
239	Nassawadox Creek	0.70	%	85	-	5	10																Marsh fringe of saltmarsh cordgrass and needlerush; some meadow and saltbushes at highest elevations.	I
			acres	0.60	-	0.04	0.07																	
240	Nassawadox Creek	0.70	%	25	5	40	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pocket marsh saltmarsh cordgrass along creek; grades back to high marsh area around pond.	XII
			acres	0.18	0.04	0.28	0.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
241	Nassawadox Creek	0.90	%	70	5	5	20			-	-	-	-	-	-	-	-	-	-	-	-	-	Marsh fringe along shoreline and around spit into lower section of small cove.	I
			acres	0.63	0.04	0.04	0.18			-	-	-	-	-	-	-	-	-	-	-	-	-		
242	Kelley Cove	9.2	%	35	5	5	50	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	Fringe and pocket marsh located in small cove; saltbushes and cattails found in upstream portion of marsh.	III
			acres	3.2	0.5	0.5	4.6	-	0.5			-	-	-	-	-	-	-	-	-	-	-		
243	Nassawadox Creek	1.1	%	40	5	-	55			-	-	-	-	-	-	-	-	-	-	-	-	-	Marsh fringe with average width of 10 ft; includes several marsh spits.	III
			acres	0.4	0.1	-	0.6			-	-	-	-	-	-	-	-	-	-	-	-	-		

Section X. Nassawadox Creek Area
Part 2. Nassawadox Creek, Holly Grove Cove, Warehouse Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh	Saltmeadow	Saltbushes	Black	Saltwort	Cattails	Sea	Sea	Saltmarsh	Big	Marsh	Marsh	Water	Saltmarsh	Saltmarsh	Olney	Marsh	Sea	Reed	Suaeda	Observations	Marsh Type
				Cordgrass	Grasses	Needlerush			Oxeye	Lavender	Bulrush	Cordgrass	Hibiscus	Mallow	Hemp	Aster	Fimbristylis	Threesquare	Fleabane	Rocket	Grass				
244	Nassawadox Creek	2.7	%	70	-	-	25		5				-	-	-									Pocket marsh dominated by needlerush and saltmarsh cordgrass; patches of cattail and scattered hibiscus.	I
			acres	1.9	-	-	0.7		0.1					-	-	-									
245	Nassawadox Creek	0.80	%	10	-	-	90		-				-			-								Fringe marsh dominated by needlerush; scattered patches of saltmarsh cordgrass.	III
			acres	0.08	-	-	0.72		-					-											
246	Nassawadox Creek	1.00	%	40	-	3	50		5				-	2	-									Fringe marsh dominated by needlerush and saltmarsh cordgrass; scattered big cordgrass.	III
			acres	0.40	-	0.03	0.50		0.05					-	0.02	-									
247	Nassawadox Creek	2.8	%	10	5	5	80		-				-	-		-	-							Creek marsh section; largely needlerush with some saltmarsh cordgrass at lower elevations such as along channel edges.	III
			acres	0.3	0.1	0.1	2.2		-					-	-		-	-							
248	Nassawadox Creek	13.0	%	20	10	60	10		-				-	-	-	-	-							Lower section of large creek marsh; dominated by saltbushes; understory of saltmeadow; saltmarsh cordgrass along creek channels.	IV
			acres	2.6	1.3	7.8	1.3		-					-	-	-	-	-							
249	Nassawadox Creek	19.7	%	-	10	20			5				5	55	3	2	-							Upper section of creek marsh; predominately big cordgrass with abundant saltbush; cattails, hibiscus and mallow along upland; abundant muskrat lodges.	V
			acres	-	2.0	3.9			1.0				1.0	10.8	0.6	0.4	-								
250	Nassawadox Creek	4.6	%	35	10	20	30		-				-	5			-							Marsh fringe along creek shoreline; includes several spits extending well into creek.	XII
			acres	1.6	0.5	0.9	1.4		-				-	0.2				-							
251	Nassawadox Creek	2.2	%	45	2	4	30		15				-	2	2		-							Marsh fringe along shoreline; mostly black needlerush and saltmarsh cordgrass; several pocket areas with cattails.	XII
			acres	1.0	-	0.1	0.7		0.3				-	-	-			-							

Section X. Nassawadox Creek Area
Part 2. Nassawadox Creek, Holly Grove Cove, Warehouse Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Oiney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
			%	acres																					
252	Nassawadox Creek	1.6	%	50	5	5	40		-	-	-	-				-								Marsh fringe along section of shoreline; dominated by saltmarsh cordgrass and black needlerush.	I
			acres	0.8	0.1	0.1	0.6		-	-	-	-						-							
253	Nassawadox Creek	0.80	%	70	5	5	20		-							-								Cove marsh; saltmarsh cordgrass and needlerush fringe along water; saltbushes and meadow at higher elevations.	I
			acres	0.56	0.04	0.04	0.16		-									-							
254	Nassawadox Creek	1.5	%	40	5	-	55		-															Marsh fringe around shoreline of cove; average width 10-20 ft; includes several pocket marsh areas.	III
			acres	0.6	0.1	-	0.8		-																
255	Nassawadox Creek	1.4	%	50	10	-	40			-	-													Spit marsh at mouth of cove; saltmarsh cordgrass and black needlerush grade to saltmeadow, then upland.	I
			acres	0.7	0.1	-	0.6			-	-														
256	Nassawadox Creek	5.5	%	20	20	-	60		-			-					-							Pocket marsh at head of cove; saltmarsh along creek channels grades to needlerush and meadow grasses; scattered cattails along uplands and at head of pocket.	III
			acres	1.1	1.1	-	3.3		-			-						-							
257	Holly Grove Cove	1.6	%	55	20	10	15	-		-	-	-					-	-						Spit marsh dominated by saltmarsh cordgrass; some cedar and pine growing along berm with high marsh species.	I
			acres	0.9	0.3	0.2	0.2	-		-	-	-						-	-						
258	Holly Grove Cove	1.5	%	75	-	15	10		-															Saltmarsh cordgrass fringe along shoreline with small pocket marsh areas.	I
			acres	1.1	-	0.2	0.2		-																
259	Holly Grove Cove	4.7	%	15	-	5	80		-			-	-											Broad fringing marsh section at head of cove; mostly black needlerush.	III
			acres	0.7	-	0.2	3.8		-			-	-												

Section X. Nassawadox Creek Area
Part 2. Nassawadox Creek, Holly Cove, Warehouse Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh	Saltmeadow	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
				Cordgrass	Grasses																				
260	Holly Grove Cove	15.0	%	10	10	70	5		5			-	-	-		-								Upper marsh section at head of cove; dominated by saltbushes with understory of meadow; saltmarsh cordgrass along channels.	IV
			acres	1.5	1.5	10.5	0.8		0.8				-	-	-		-								
261	Holly Grove Cove	6.3	%	20	-	-	80		-			-	-			-								Fringing marsh section at head of cove; dominated by large stands of black needlerush with patches of saltmarsh cordgrass.	III
			acres	1.3	-	-	5.0		-			-	-			-									
262	Holly Grove Cove	1.6	%	95	5	-	-		-			-	-			-	-							Pocket marsh; almost entirely of saltmarsh cordgrass with some saltmeadow, especially along upland edge.	I
			acres	1.5	0.1	-	-		-			-	-			-	-								
263	Holly Grove Cove	3.6	%	65	2	3	30		-			-	-			-								Marsh fringe 5-30 ft. wide; dominated by saltmarsh cordgrass and black needlerush.	I
			acres	2.3	0.1	0.1	1.1		-			-	-			-									
264	Holly Grove Cove	0.80	%	65	-	5	30		-			-	-			-								Pocket marsh; dominated by saltmarsh cordgrass and black needlerush; saltbushes along upland.	I
			acres	0.52	-	0.04	0.24		-			-	-			-									
265	Holly Grove Cove	0.80	%	20	5	25	50		-	-	-													Spit marsh at mouth of cove; ridge with saltbushes; saltmarsh cordgrass at lowest elevations.	III
			acres	0.16	0.04	0.20	0.40		-	-	-														
266	Nassawadox Creek	3.5	%	25	5		10		35	-		10		10	-									Three adjoining pocket marshes; interior sections mostly cattail and hibiscus; saltmarsh cordgrass along creek.	XII
			acres	0.9	0.2		0.4		1.2	-		0.4		0.4	-										
267	Nassawadox Creek	0.30	%	85	5	-	10		-			-												Intermittent saltmarsh cordgrass fringe along shoreline; scattered patches of black needlerush.	I
			acres	0.26	0.02	-	0.03		-			-													

Section X. Nassawadox Creek Area
Part 2. Nassawadox Creek, Holly Grove Cove, Warehouse Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh	Saltmeadow	Saltbushes	Black	Saltwort	Cattails	Sea	Sea	Saltmarsh	Big	Marsh	Marsh	Water	Saltmarsh	Saltmarsh	Oliney	Marsh	Sea	Reed	Suaeda	Observations	Marsh Type
				Cordgrass	Grasses	Needlerush			Oxeye	Lavender	Bulrush	Cordgrass	Hibiscus	Mallow	Hemp	Aster	Fimbristylis	Threesquare	Fleabane	Rocket	Grass				
268	Warehouse Creek	1.6	%	40	40	20	-			-								-						Fringe marsh at mouth of creek; forms small pocket area; saltmarsh cordgrass grades to high marsh areas.	XII
			acres	0.6	0.6	0.3	-			-										-					
269	Warehouse Creek	0.60	%	60	5	5	30					-						-						Intermittent marsh fringe dominated by saltmarsh cordgrass and black needlerush.	I
			acres	0.36	0.03	0.03	0.18							-						-					
270	Warehouse Creek	2.4	%	20	5	5	70			-		-						-						Broad section of marsh fringe; dominated by black needlerush with saltmarsh cordgrass at lower elevations.	III
			acres	0.5	0.1	0.1	1.7			-				-						-					
271	Warehouse Creek	1.3	%	70	-	5	20			5		-												Small pocket marsh; berm with black needlerush and salt bushes across front; interior mostly saltmarsh cordgrass.	I
			acres	0.9	-	0.1	0.3			0.1				-											
272	Warehouse Creek	1.8	%	40	5	15	40			-		-												Marsh fringe along length of shoreline; dominated by both saltmarsh cordgrass and black needlerush.	XII
			acres	0.7	0.1	0.3	0.7			-				-											
273	Warehouse Creek	10.0	%	20	10	35	35			-		-												Pocket marsh formed by left branch of creek; saltmarsh cordgrass along lower section grades back to needlerush and saltbushes.	XII
			acres	2.0	1.0	3.5	3.5			-				-											
274	Warehouse Creek	17.4	%	20	10	40	20			10		-						-						Large pocket marsh at head of left or main branch of creek, upper section of marsh mostly needlerush and saltbushes.	XII
			acres	3.5	1.7	7.0	3.5			1.7				-						-					
275	Warehouse Creek	2.0	%	30	5	10	40			15		-						-						Marsh fringe along section of shoreline; mostly needlerush and saltmarsh cordgrass with scattered patches of cattail.	XII
			acres	0.6	0.1	0.2	0.8			0.3				-						-					

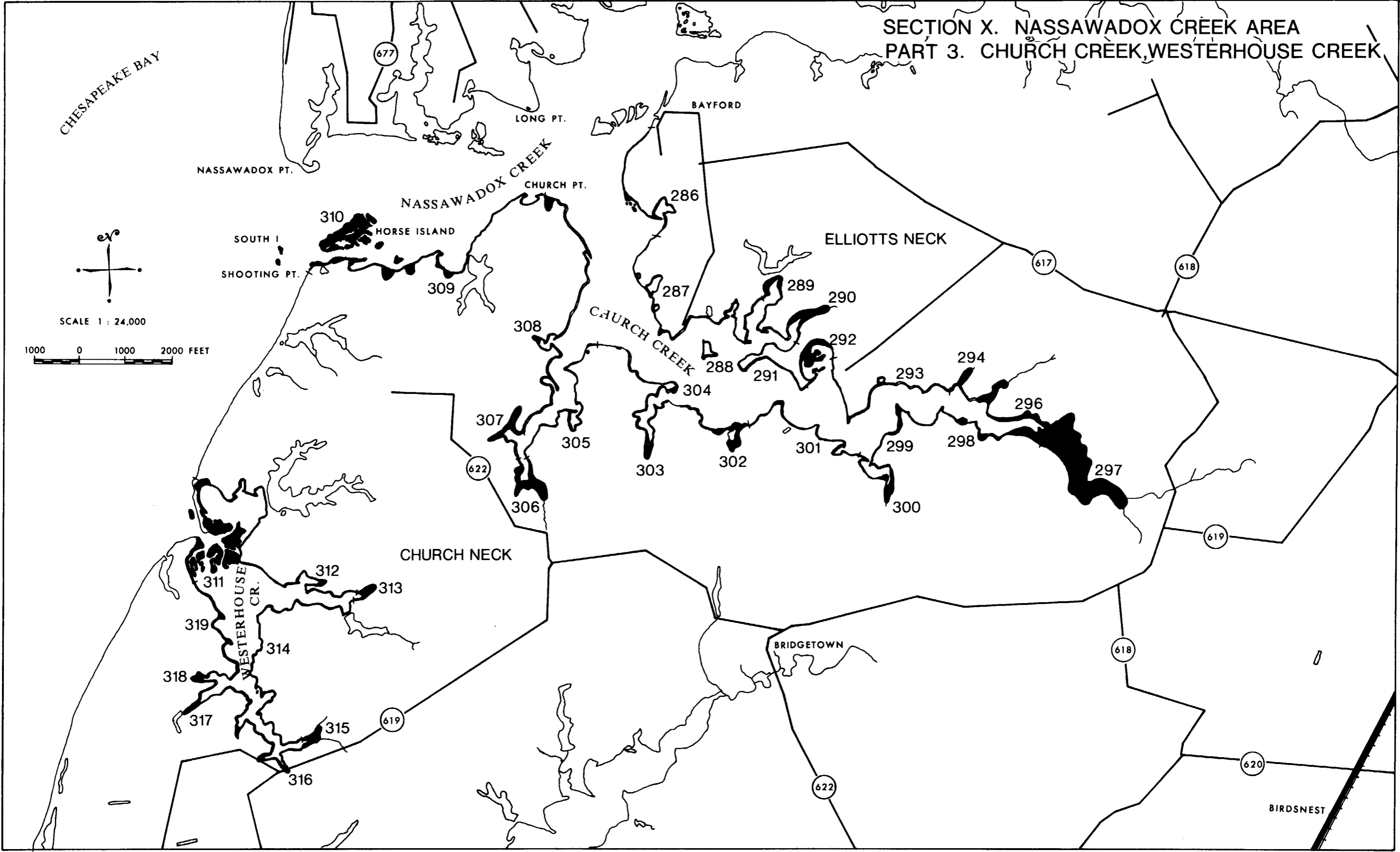
Section X. Nassawadox Creek Area
Part 2. Nassawadox Creek, Holly Grove Cove, Warehouse Creek
(continued)

#	Marsh Location	Total Acres																				Observations	Marsh Type	
				Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket			Reed Grass
276	Warehouse Creek	0.50	%	15	5	20	60	-	-	-	-												Spit marsh; mostly black needlerush with saltmarsh cordgrass at lowest elevations and saltbushes along upland.	III
			acres	0.08	0.02	0.10	0.30	-	-	-	-													
277	Warehouse Creek	4.7	%	50	10	30	10	-	-	-	-					-	-						Pocket marsh in two sections separated by open-water pond; upper section dominated by saltbushes; lower section mostly saltmarsh cordgrass.	I
			acres	2.4	0.5	1.4	0.5	-	-	-	-						-	-						
278	Warehouse Creek	1.3	%	80	2	5	10		-	-	3		-	-		-							Small cove with marsh spits at mouth, fringe along sides and pocket at head; spit of saltbushes has been cut by dredged channel.	I
			acres	1.0	-	0.1	0.1		-	-							-							
279	Warehouse Creek	1.5	%	75	5	5	15		-		-		-		-								Small pocket marsh; dominated by saltmarsh cordgrass but with scattered areas of needlerush.	I
			acres	1.1	0.1	0.1	0.2		-								-							
280	Warehouse Creek	1.2	%	60	30	5	5		-	-			-	-			-						Marsh fringe; saltmarsh cordgrass along creek grades back to high marsh zone of meadow and saltbushes.	I
			acres	0.7	0.4	0.1	0.1		-	-														
281	Warehouse Creek	2.2	%	40	10	5	15			30						-	-	-					Fringing marsh that extends back into small pocket; interior section dominated by cattail.	XII
			acres	0.9	0.2	0.1	0.3			0.7														
282	Warehouse Creek	4.1	%	35	20	20	25	-	-														Pocket marsh extends back to open water pond; saltmarsh cordgrass grades to high marsh areas.	XII
			acres	1.4	0.8	0.8	1.0	-	-															
283	Warehouse Creek	2.2	%	75	10	10	5		-	-													Pocket marsh with berm of high marsh across front; open pond area fringed by saltmarsh cordgrass; some cattail at head.	I
			acres	1.6	0.2	0.2	0.1		-	-														

Section X. Nassawadox Creek Area
 Part 2. Nassawadox Creek, Holly Grove Cove, Warehouse Creek
 (continued)

#	Marsh Location	Total Acres		Saltmarsh	Saltmeadow	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
				Cordgrass	Grasses																				
284	Bayford	2.2	%	65	15	15	3		-	-	-	2						-						Marsh fringe along shoreline and around small cove area; scattered patches of saltmarsh cordgrass extending out from shore.	I
			acres	1.4	0.3	0.3	0.1		-	-	-	-													
285	Bayford	1.4	%	90	3	2			5			-		-		-								Pocket marsh area connected to creek by culvert under road; good tidal flushing permitted.	I
			acres	1.3	-	-			0.1				-												
	Total Section X Part 2	180.4	%	31	8	23	26	-	4	-	-	1	6	1	-	-	-	-							
			acres	56.7	15.2	40.6	46.5	-	7.4	-	-	-	1.4	11.0	1.0	0.4	-	-	-						

SECTION X. NASSAWADOX CREEK AREA
PART 3. CHURCH CREEK, WESTERHOUSE CREEK



Section X. Nassawadox Creek Area
Part 3. Church Creek, Westerhouse Creek

#	Marsh Location	Total Acres																				Observations	Marsh Type	
			Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass			Suaeda
286	Church Creek	1.8	%	70	5	5	10		5		-	5											Marsh fringe along creek shoreline and around small cove; includes several saltmarsh cordgrass spits.	I
			acres	1.3	0.1	0.1	0.2		0.1		-	0.1												
287	Church Creek	3.1	%	60	10	15	15		-		-	-											Marsh fringe along length of shoreline; includes several small marsh spits and pocket areas.	I
			acres	1.9	0.3	0.5	0.5		-		-	-												
288	Church Creek	0.40	%	95	3	2	-				-	-											Saltmarsh cordgrass dominated fringe around shoreline of small island; average width 10-20 ft.	I
			acres	0.38	0.01	0.01	-				-	-												
289	Church Creek	0.80	%	60	-	-	40		-		-	-											Marsh fringe along upper edge of cove where crossed by dirt road; road fill dams upper section of creek.	I
			acres	0.48	-	-	0.32		-		-	-												
290	Church Creek	3.1	%	75	-	5	20		-		-	-											Pocket marsh at head of small creek branch; mostly saltmarsh cordgrass with large patches of needlerush.	I
			acres	2.3	-	0.2	0.6		-		-	-												
291	Church Creek	0.80	%	70	10	10	10				-	-											Marsh fringe along section of creek shoreline; saltmarsh cordgrass grades back to high marsh species.	I
			acres	0.6	0.1	0.1	0.1				-	-												
292	Church Creek	4.4	%	70	10	5	15				-	-											Broad fringe of marsh in tidal cove; spit of saltmarsh cordgrass at mouth of cove.	I
			acres	3.1	0.4	0.2	0.7				-	-												
293	Church Creek	0.70	%	85	-	5	10				-	-											Marsh fringe along section of creek shoreline; includes several spit and pocket areas.	I
			acres	0.60	-	0.04	0.07				-	-												

Section X. Nassawadox Creek Area
Part 3. Church Creek, Westerhouse Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh	Saltmeadow	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
				Cordgrass	Grasses																				
294	Church Creek	1.2	%	40	5	25	25		5			-		-			-							Pocket marsh; saltmarsh cordgrass at lower elevations; grades back to areas of high marsh.	XII
			acres	0.5	0.1	0.3	0.3		0.1		-		-		-										
295	Church Creek	2.5	%	30	5	35	25		5			-		-	-		-		-					Pocket marsh; dominated by saltbushes and needlerush; saltmarsh cordgrass at lower elevations with pockets of cattail along uplands.	XII
			acres	0.8	0.1	0.9	0.6		0.1		-		-		-										
296	Church Creek	6.7	%	75	2	3	15		5			-				-	-		-					Lower section of large pocket marsh; partially separated from upper section by dike; includes fringe along both sides of creek.	I
			acres	5.0	0.1	0.2	1.0		0.3		-		-		-										
297	Church Creek	25.5	%	25	5	35	10		25			-	-	-	-	-	-							Upper section of large pocket marsh; partially separated from lower section by dike; abundant stands of cattail.	XII
			acres	6.4	1.3	8.9	2.6		6.4		-		-		-										
298	Church Creek	0.90	%	40	5	5	50		-							-	-							Small pocket marsh; dominated by needlerush and saltmarsh cordgrass.	III
			acres	0.36	0.04	0.04	0.45		-		-		-		-										
299	Church Creek	1.6	%	50	5	-	40		2		-	3												Marsh fringe including small spit; mostly patches of saltmarsh cordgrass or black needlerush.	I
			acres	0.8	0.1	-	0.6		-		-		-												
300	Church Creek	2.6	%	80	3	2	15		-			-		-	-	-	-							Small cove with fringe of saltmarsh cordgrass and needlerush along shoreline; pocket marsh at head.	I
			acres	2.1	0.1	0.1	0.4		-		-		-		-										
301	Church Creek	1.4	%	45	5	15	30		-			5		-		-	-							Marsh fringe along section of shoreline includes several marsh spits; mixed areas of saltmarsh cordgrass and black needlerush.	XII
			acres	0.6	0.1	0.2	0.4		-		-		0.1		-		-								

Section X. Nassawadox Creek Area
Part 3. Church Creek, Westerhouse Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbriatilis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
				%	acres	%	acres	%	acres	%	acres	%	acres	%	acres	%	acres	%	acres	%	acres	%	acres		
302	Church Creek	3.5	%	75	5	10	5		5		-	-		-	-		-		-					Fringing marsh; in one section extends back around small pond to form pocket marsh.	I
			acres	2.6	0.2	0.4	0.2		0.2		-	-		-	-		-		-		-				
303	Church Creek	1.8	%	85	5	5	5		-		-	-			-		-							Small cove with a saltmarsh cordgrass fringe along shoreline; small pocket marsh at head of cove.	I
			acres	1.5	0.1	0.1	0.1		-		-	-		-	-		-		-		-				
304	Church Creek	0.70	%	65	5	10	20	-		-	-	-						-						Spit marsh; dominated by needlerush and saltmarsh cordgrass; meadow and saltbushes at highest elevations.	I
			acres	0.46	0.04	0.07	0.14	-		-	-	-		-	-		-		-		-				
305	Church Creek	1.9	%	90	4	5	5		1		-	-			-		-	-						Marsh fringe along shoreline; includes small spit and pocket marsh areas.	I
			acres	1.7	0.1	0.1	0.1		-		-	-		-	-		-		-		-				
306	Church Creek	5.5	%	80	-	-	15		3			1		1	-									Pocket marsh at head of creek; includes two branches; mostly saltmarsh cordgrass with patches of black needlerush.	I
			acres	4.4	-	-	0.8		0.2				0.1		0.1	-									
307	Church Creek	3.3	%	75	-	-	20		5			-		-	-									Pocket marsh with two branches; dominated by saltmarsh cordgrass and needlerush with several stands of cattail.	I
			acres	2.5	-	-	0.7		0.2				-		-	-									
308	Church Creek	2.9	%	85	3	5	5					2				-								Marsh fringe dominated by saltmarsh cordgrass; includes several small pocket marsh areas.	I
			acres	2.5	0.1	0.1	0.1						0.1				-								
309	Nassawadox Creek	3.7	%	75	5	15	-		5		-	-		-	-									Marsh fringe along shoreline; dominated by saltmarsh cordgrass; several pocket areas with some cattail and hibiscus.	I
			acres	2.8	0.2	0.6	-		0.2		-	-		-	-		-								

Section X. Nassawadox Creek Area
Part 3. Church Creek, Westerhouse Creek
(continued)

#	Marsh Location	Total Acres																				Observations	Marsh Type		
			%	Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket			Reed Grass	Suaeda
310	Horse Island	10.3	%	95	-	5				-	-													Marsh island near mouth of Nassawadox Creek; almost entirely saltmarsh cordgrass with scattered ridges of saltbush.	I
			acres	9.8	-	0.5				-	-														
311	Westerhouse Creek	11.9	%	80	-	15	5	-			-													Spit and delta marshes surrounding mouth of Westerhouse Creek; saltbushes along highest elevations of spits.	I
			acres	9.5	-	1.8	0.6	-			-														
312	Westerhouse Creek	1.9	%	55	5	15	25			-		-	-											Marsh fringe along length of creek shoreline; some cattail in small pocket areas.	I
			acres	1.0	0.1	0.3	0.5			-		-	-												
313	Westerhouse Creek	1.00	%	60	-	-	20			20		-	-											Pocket marsh at head of creek branch; stands of cattails and needlerush but mostly saltmarsh cordgrass.	I
			acres	0.60	-	-	0.20			0.20		-	-												
314	Westerhouse Creek	1.7	%	55	5	15	25			-		-	-											Marsh fringe along length of creek shoreline; some cattail in small pocket areas.	I
			acres	0.9	0.1	0.3	0.4			-		-	-												
315	Westerhouse Creek	1.4	%	60	-	-	30			10		-	-											Pocket marsh at head of creek branch; dominated by saltmarsh cordgrass with stands of needlerush.	I
			acres	0.8	-	-	0.4			0.1		-	-												
316	Westerhouse Creek	1.00	%	60	5	10	25			-		-	-											Marsh fringe along length of creek shoreline; includes several small pocket marshes.	I
			acres	0.60	0.05	0.10	0.25			-		-	-												
317	Westerhouse Creek	0.60	%	65	5	-				30		-	-											Small pocket marsh; dominated by saltmarsh cordgrass with abundant cattail.	I
			acres	0.39	0.03	-				0.18		-	-												

Section X. Nassawadox Creek Area
Part 3. Church Creek, Westerhouse Creek
(continued)

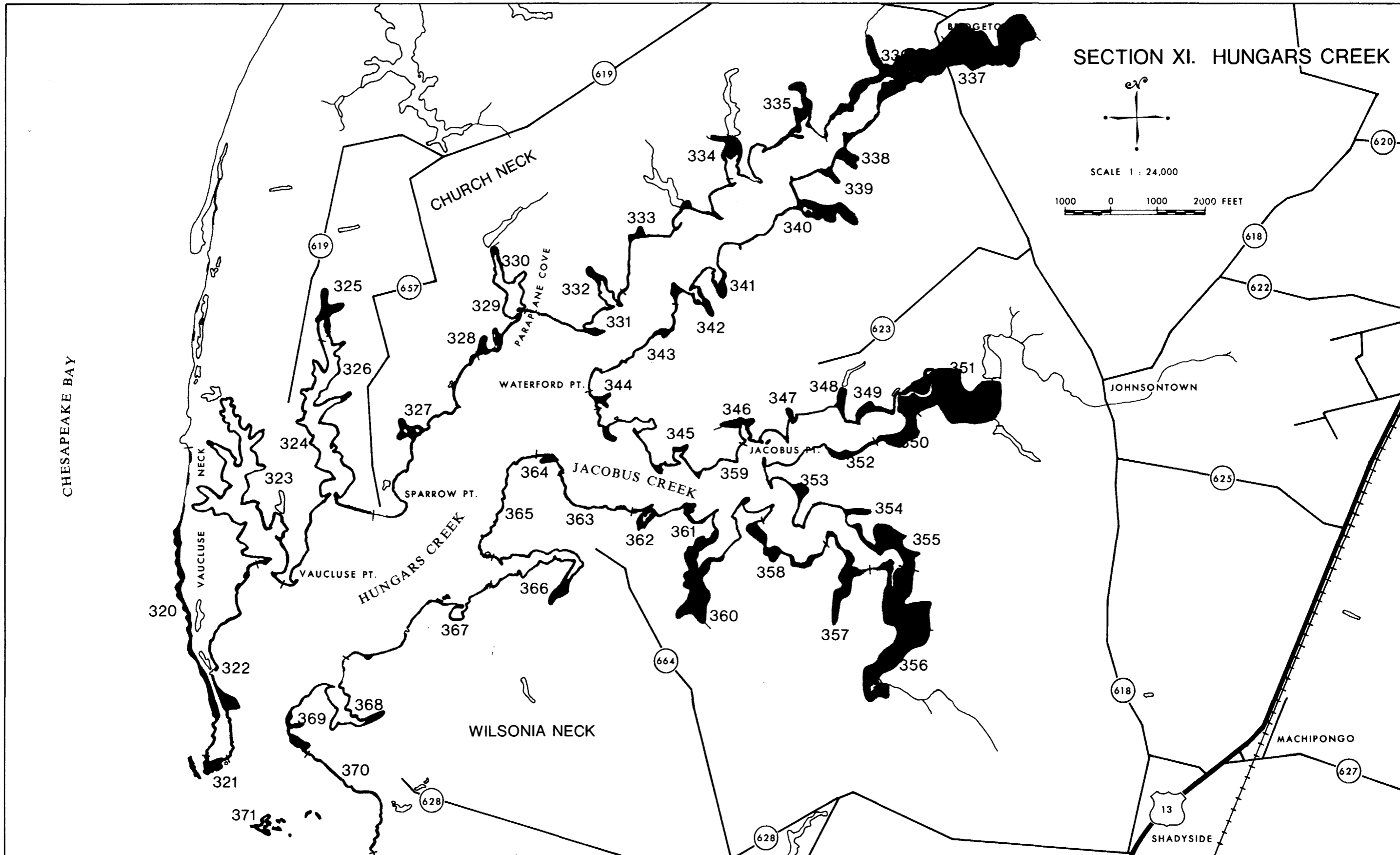
#	Marsh Location	Total Acres		Saltmarsh	Saltmeadow	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Oliney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
				Cordgrass	Grasses																				
318	Westerhouse Creek	0.50	%	65	-	5			30			-		-	-									Small pocket marsh; dominated by saltmarsh cordgrass but with large stands of cattail.	I
			acres	0.32	-	0.02				0.15			-		-	-									
319	Westerhouse Creek	0.70	%	55	5	15	25		-	-	-	-		-										Marsh fringe along length of shoreline; includes several small marsh spits.	I
			acres	0.38	0.04	0.10	0.10			-	-	-	-		-										
	Total Section X Part 3	111.8	%	63	3	15	12	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
			acres	70.0	3.9	16.3	13.5	-	8.4	-	-	-	0.4	-	0.1	-	-	-	-	-	-	-	-		
	Total Section X Parts 1,2,3	345.1	%	48	7	17	18	-	6	-	-	1	3	-	-	-	-	-	-	-	-	-	-		
			acres	164.4	23.0	58.5	62.3	-	22.2	-	-	1.8	11.0	1.1	0.4	0.1	-	-	-	-	-	-	-		

Section XI. Hungars Creek

The marsh areas found along Hungars Creek are similar to those found in Nassawadox Creek to the north (Section X) and Cherrystone Creek to the south (Section XIII). As with these other large creek systems found along Northampton County's Bay side, the marshes located here are generally small in size. They perform important functions, however, such as stabilizing the shoreline and filtering runoff from the uplands, as well as serving as a wildlife habitat and source of organic material for the tidal creek system.

The shoreline of Hungars Creek is almost completely fringed by salt marsh which is dominated by saltmarsh cordgrass (Type I). However, in many of the fringing areas the saltmarsh cordgrass grades back to a zone of high marsh (Type II & IV). Also extensive high marsh zones are found in the interior sections of many pocket areas. Several embayed marshes are located at the heads of the large creek branches (#337, 351, 356). These are generally dominated by high marsh species including saltbushes and saltmeadow grasses. In addition, large stands of giant cordgrass (Type V) may be present. This species occurs where both salinities are low and the marsh surface is close to the mean high water level.

As with similar areas fronting on the Chesapeake Bay to the north and south, the Bay shoreline in the vicinity of Hungar's Creek is devoid of marsh except for an intermittent marsh fringe along Vaucluse Neck (#320). The value of marsh as an erosion deterrent is greatly evident here, for where the marsh is present the adjacent upland is stable and well vegetated. On the other hand, where the marsh is absent the upland has retreated significantly and is characterized by undercut cliffs and rapid erosion during storm periods.



Section XI. Hungars Creek

#	Marsh Location	Total Acres																				Observations	Marsh Type	
			Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass			Suaeda
320	Vaucluse Neck	4.5	%	90	10	-		-			-					-				-			Marsh fringe 10-50 ft. wide along shoreline; saltmarsh cordgrass grades back to narrow zone of meadow grasses.	I
			acres	4.0	0.4	-		-			-						-				-			
321	Vaucluse Neck	2.4	%	90	10	-		-			-	-				-				-			Marsh fringe at tip of long spit of upland; saltmarsh cordgrass grades back to zone of high marsh.	I
			acres	2.2	0.2	-		-			-	-					-				-			
322	Vaucluse Neck	5.2	%	75	15	10		-		-	-	-				-				-			Marsh fringe along creek side of long spit of upland; dominated by saltmarsh cordgrass with other species at higher elevations along upland edge.	I
			acres	3.9	0.8	0.5		-		-	-	-					-				-			
323	Vaucluse Neck	2.5	%	95	-	5		-	-	-	-	-				-							Marsh fringe 2-10 ft. wide around shoreline of cove; road construction has cut off tidal flushing to most upstream branch; marsh spits at mouth.	I
			acres	2.4	-	0.1		-	-	-	-	-					-							
324	Hungars Creek	1.2	%	95	-	5	-		-		-					-							Marsh fringe along length of shoreline that continues up one side of long cove; includes small spit and pocket areas.	I
			acres	1.1	-	0.1	-	-		-		-					-							
325	Hungars Creek	3.7	%	80	-	-	15		5		-					-	-						Pocket marsh at head of cove; dominated by saltmarsh cordgrass with patches of needle-rush and cattails.	I
			acres	3.0	-	-	0.6		0.2		-		-	-			-	-						
326	Hungars Creek	2.2	%	90	-	5	-		5		-					-	-						Marsh fringe along eastern shoreline of cove; includes several pocket areas with some cattail.	I
			acres	2.0	-	0.1	-		0.1		-		-	-			-	-						
327	Hungars Creek	3.8	%	90	5	5			-	-	-					-	-						Section of shoreline with saltmarsh cordgrass dominated marsh fringe; includes several pocket marsh areas which grade back to high marsh.	I
			acres	3.4	0.2	0.2			-	-	-						-	-						

Section XI. Hungars Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh	Saltmeadow	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
				Cordgrass	Grasses																				
328	Hungars Creek	0.90	%	80	5	15	-		-		-						-							Small pocket marsh; saltbushes and saltmeadow along upland edge; remainder mostly saltmarsh cordgrass.	I
			acres	0.72	0.04	0.14	-		-		-														
329	Hungars Creek	1.2	%	80	5	10	5		-		-						-							Small pocket marsh; dominated by saltmarsh cordgrass but grades back to high marsh.	I
			acres	1.0	0.1	0.1	0.1		-		-														
330	Paraplave Cove	2.0	%	90	2	5			3		-						-							Cove with fringe of saltmarsh cordgrass along shoreline; cattails in several small pockets; saltmarsh cordgrass spits at mouth.	I
			acres	1.8	-	0.1			0.1		-														
331	Hungars Creek	1.5	%	70	15	15	-	-		-	-							-						Spit marsh; berm of high marsh species; remainder mostly saltmarsh cordgrass.	I
			acres	1.0	0.2	0.2	-	-		-	-														
332	Hungars Creek	2.4	%	90	2	3			5		-						-							Pocket marsh at head of small cove; saltmarsh cordgrass fringe along lower section of cove.	I
			acres	2.2	-	0.1			0.1		-														
333	Hungars Creek	1.9	%	85	3	5	2	-	2		1					2	-							Marsh fringe along length of shoreline; includes several marsh spits; dominated by saltmarsh cordgrass.	I
			acres	1.6	0.1	0.1	-	-		-															
334	Hungars Creek	5.1	%	75	4	5	10		3							1	-					2		Pocket marsh at head of cove; one branch has been dammed forming pond.	I
			acres	3.8	0.2	0.3	0.5		0.2								0.1	-					0.1		
335	Hungars Creek	5.8	%	50	10	20	20		-		-					-	-							Pocket marsh; dominated by saltmarsh cordgrass in lower section; grades back to meadow and saltbushes.	I
			acres	2.9	0.6	1.2	1.2		-		-						-	-							

Section XI. Hungars Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
336	Hungars Creek	31.0	%	30	20	20	20		2			-	5	-	-	3	-							Creek marsh at head of creek but below road; saltmarsh cordgrass dominates lower portion but grades into high marsh with stands of needlerush and big cordgrass.	XII
			acres	9.3	6.2	6.2	6.2		0.6				-	1.6	-	-	0.9	-							
337	Bridgetown	29.0	%	-	5	40			10			-	30	10	5	-							-	Large pocket marsh area above road; tidal flushing permitted through culverts; big cordgrass and saltbushes grade upstream to cattails & hibiscus.	XII
			acres	-	1.4	11.6			2.9				-	8.7	2.9	1.4	-								
338	Hungars Creek	3.3	%	55	10	30	5		-			-	-	-	-	-	-	-						Pocket marsh; mostly saltmarsh cordgrass but interior is dominated by saltbushes.	I
			acres	1.8	0.3	1.0	0.2		-				-	-	-	-	-	-	-						
339	Hungars Creek	1.9	%	80	5	15	-		-		-	-	-	-	-	-	-	-						Pocket marsh; predominately saltmarsh cordgrass with saltbushes along upland and in areas of high elevation.	I
			acres	1.5	0.1	0.3	-		-			-	-	-	-	-	-	-	-						
340	Hungars Creek	7.2	%	85	5	5	2		2		-	-	-	-	-	1								Pocket marsh predominately saltmarsh cordgrass with other species scattered throughout.	I
			acres	6.1	0.4	0.4	0.1		0.1			-	-	-	-	-	0.1								
341	Hungars Creek	3.1	%	55	-	-	45		-		-	-												Pocket marsh; abundant saltmarsh cordgrass with stands of needlerush.	I
			acres	1.7	-	-	1.4		-			-	-												
342	Hungars Creek	4.4	%	85	5	5	2		3		-	-		-		-								Includes both pocket marsh area with some cattails at the head and spit marsh with some saltbushes and meadow.	I
			acres	3.7	0.2	0.2	0.1		0.1			-	-		-		-								
343	Hungars Creek	2.3	%	85	5	10	-		-		-	-	-	-	-								-	Marsh fringe predominately of saltmarsh cordgrass; saltbushes and meadow along upland edge.	I
			acres	2.0	0.1	0.2	-		-			-	-	-	-	-									

Section XI. Hungars Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
344	Hungars Creek	1.8	%	85	5	10			-		-	-												Small pocket marsh dominated by saltmarsh cordgrass; high marsh species along upland edge.	I
			acres	1.5	0.1	0.2			-		-	-													
345	Jacobus Creek	2.5	%	80	-	10	10	-			-					-								Saltmarsh cordgrass dominated marsh fringe; includes several marsh spits with some high marsh areas.	I
			acres	2.0	-	0.2	0.2	-			-		-												
346	Jacobus Creek	2.4	%	80	-	5	15		-			-	-			-								Small cove and pocket marsh; mostly saltmarsh cordgrass with stands of needlerush.	I
			acres	1.9	-	0.1	0.4		-		-		-												
347	Jacobus Creek	0.30	%	80	-	-	20		-							-								Small pocket marsh; mostly saltmarsh cordgrass with stand of needlerush.	I
			acres	0.24	-	-	0.06		-		-		-												
348	Jacobus Creek	1.1	%	75	-	10	15		-			-				-								Small pocket marsh; some saltbushes along upland; patches of needlerush but mostly saltmarsh cordgrass.	I
			acres	0.8	-	0.1	0.2		-		-		-												
349	Jacobus Creek	2.9	%	50	10	10	30		-			-				-	-							Fringing marsh; mostly saltmarsh cordgrass but includes large stands of needlerush.	I
			acres	1.4	0.3	0.3	0.9		-		-		-												
350	Jacobus Creek	7.9	%	35	25	15	25		-			-				-	-							Lower portion of creek marsh; saltmarsh cordgrass predominates along creek but grades to high marsh species.	XII
			acres	2.8	2.0	1.2	2.0		-		-		-												
351	Jacobus Creek	35.0	%	20	10	50	5		-			-	15			-	-							Upper portion of creek marsh; dominated by saltbushes with understory of meadow; saltmarsh cordgrass along channels.	IV
			acres	7.0	3.5	17.5	1.8		-		-	5.2		-	-										

Section XI. Hungars Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh	Saltmeadow	Saltbushes	Black	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh	Big	Marsh	Marsh	Water	Saltmarsh	Saltmarsh	Olney	Marsh	Sea	Reed	Suaeda	Observations	Marsh Type
				Cordgrass	Grasses	Needlerush				Cordgrass	Hibiscus	Mallow	Hemp	Aster	Fimbristylis	Threesquare	Fleabane	Rocket	Grass						
352	Jacobus Creek	1.5	%	50	-	5	35		5			-	5				-							Wide fringing marsh along upper section of creek shoreline; cattails along upland edge.	I
			acres	0.8	-	0.1	0.5		0.1		-	0.1													
353	Jacobus Creek	2.3	%	85	5	5	5					-					-							Pocket marsh; mostly saltmarsh cordgrass with other species along upland edge.	I
			acres	2.0	0.1	0.1	0.1				-														
354	Jacobus Creek	1.5	%	70	-	5	10		15					-	-	-								Pocket marsh; lower portion mostly saltmarsh cordgrass; cattails at head.	I
			acres	1.0	-	0.1	0.2		0.2						-	-	-								
355	Jacobus Creek	12.3	%	30	15	10	40		5				-											Broad fringing creek marsh section; large stands of needlerush; cattails along uplands.	XII
			acres	3.7	1.8	1.2	4.9		0.6																
356	Jacobus Creek	37.9	%	20	20	40	15		-				5	-		-								Creek marsh; mostly saltbushes with meadow grasses; saltmarsh cordgrass along creek channels and in downstream section of marsh.	XII
			acres	7.6	7.6	15.2	5.7		-					1.9	-		-								
357	Jacobus Creek	7.7	%	45	20	5	30		-				-											Pocket marsh; dominated by saltmarsh cordgrass with areas of meadow and needlerush.	XII
			acres	3.5	1.5	0.4	2.3		-																
358	Jacobus Creek	7.7	%	35	35	5	25		-															Fringing marsh which is quite wide in sections; saltmarsh cordgrass with large areas of needlerush and meadow.	XII
			acres	2.7	2.7	0.4	1.9		-																
359	Jacobus Creek	0.40	%	60	5	10	25			-	-													Spit marsh; fringe of saltmarsh cordgrass around interior section of high marsh species	I
			acres	0.24	0.02	0.04	0.10				-	-													

Section XI. Hungars Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
360	Jacobus Creek	16.6	%	50	15	10	25		-		-	-		-			-							Large pocket marsh; saltmarsh cordgrass meadow and needlerush dominate lower section; upper section mostly saltbushes and needlerush.	I
			acres	8.3	2.5	1.7	4.2		-		-	-				-									
361	Jacobus Creek	2.3	%	80	5	5	10							-	-									Fringe and spit marsh; dominated by saltmarsh cordgrass with high marsh species along upland.	I
			acres	1.8	0.1	0.1	0.2									-	-								
362	Jacobus Creek	2.3	%	95	-	-	5	-	-		-	-												Pocket marsh almost completely of saltmarsh cordgrass; scattered black needlerush.	I
			acres	2.2	-	-	0.1	-	-		-	-													
363	Jacobus Creek	1.4	%	85	5	15											-							Saltmarsh cordgrass dominated marsh fringe; meadow grasses and saltbushes in zone along upland.	I
			acres	1.2	0.1	0.2													-						
364	Jacobus Creek	1.4	%	40	40	15	5	-			-	-	-											Marsh fringe; saltmarsh cordgrass fringe along water; large pocket of meadow behind.	XII
			acres	0.6	0.6	0.2	0.1	-			-	-	-												
365	Hungars Creek	2.0	%	85	5	10											-							Saltmarsh cordgrass dominated marsh fringe; meadow grasses and saltbushes along upland.	I
			acres	1.7	0.1	0.2													-						
366	Masden Gut	4.6	%	80	-	10	10		-			-		-										Long cove with saltmarsh cordgrass and needlerush fringe along lower section of shoreline; pocket marsh of mostly saltmarsh cordgrass at head.	I
			acres	3.7	-	0.5	0.5		-			-													
367	Hungars Creek	3.0	%	85	-	15	-			-		-						-						Saltmarsh cordgrass dominated marsh fringe 5-30 ft. wide; several small spit and pocket areas.	I
			acres	2.6	-	0.4	-				-														

Section XI. Hungars Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh	Saltmeadow	Saltbushes	Black	Saltwort	Cattails	Sea	Sea	Saltmarsh	Big	Marsh	Marsh	Water	Saltmarsh	Saltmarsh	Olney	Marsh	Sea	Reed	Suaeda	Observations	Marsh Type
				Cordgrass	Grasses	Needlerush			Oxeye	Lavender	Bulrush	Cordgrass	Hibiscus	Mallow	Hemp	Aster	Fimbristylis	Threesquare	Fleabane	Rocket	Grass				
368	Hungars Creek	1.7	%	90	-	5	5		-			-												Cove with saltmarsh cordgrass dominated marsh fringe along shoreline; several small pocket marsh areas.	I
			acres	1.5	-	0.1	0.1			-			-												
369	Hungars Creek	3.2	%	60	25	15	-			-	-	-					-	-						Two pocket marshes surrounded by saltbushes; marsh dominated by saltmarsh cordgrass but with large patches of meadow.	I
			acres	1.9	0.8	0.5	-			-	-	-						-	-						
370	Hungars Creek	1.5	%	95	-	5	-			-	-	-												Saltmarsh cordgrass dominated marsh fringe 5-20 ft. wide; some meadow and saltbushes along upland edge.	I
			acres	1.4	-	0.1	-			-	-	-													
371	Hungars Creek	1.4	%	90	5	5		-		-	-	-												Several small marsh islands almost completely saltmarsh cordgrass; largest island has saltbushes and meadow.	I
			acres	1.3	0.1	0.1		-		-	-	-													
	Total Section XI	295.1	%	44	12	22	12	-	2	-	-	-	6	1	-	-	-	-				-	-		
			acres	130.5	35.5	64.4	36.9	-	5.3	-	-	-	-	17.5	2.9	1.4	1.1	-	-				-		

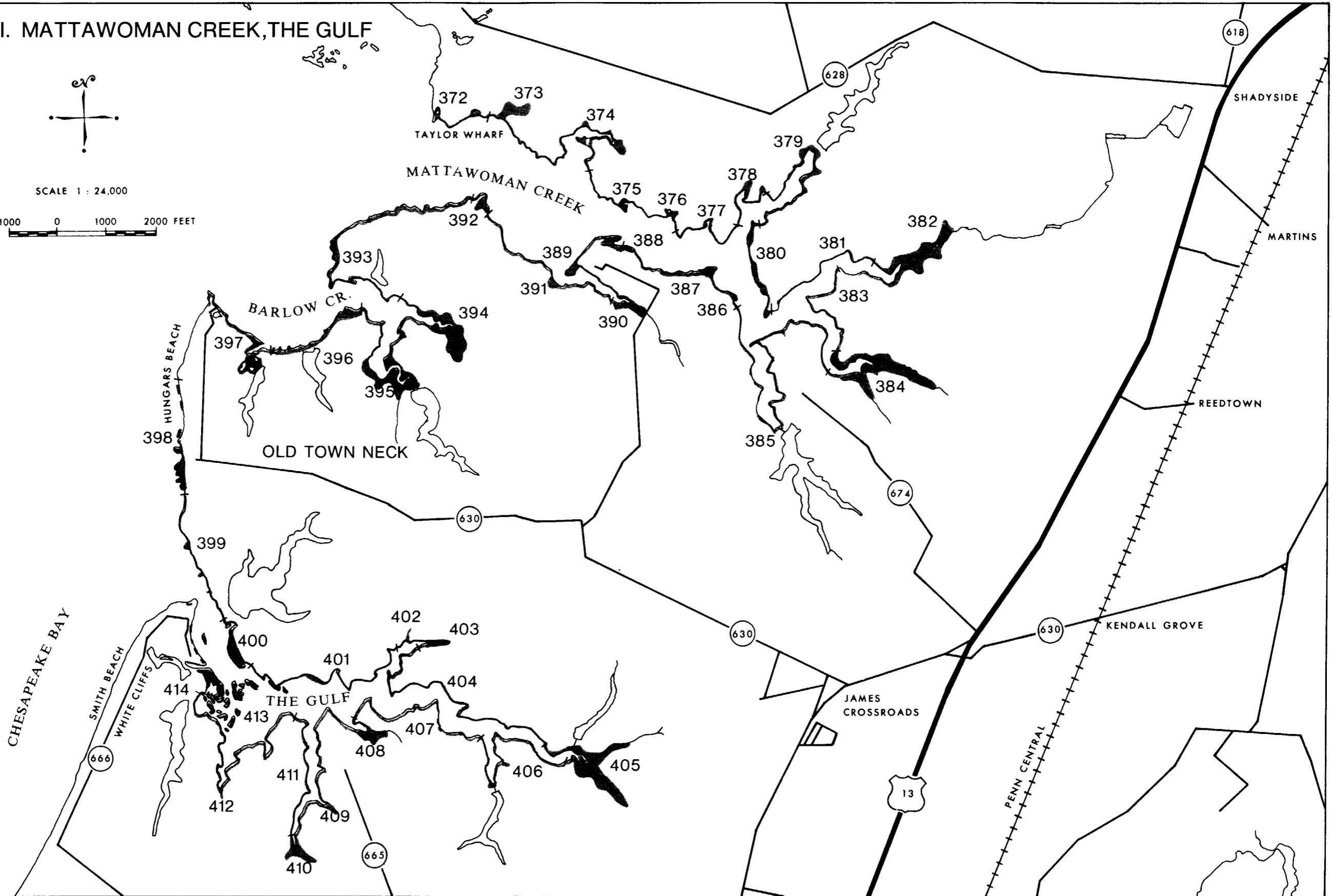
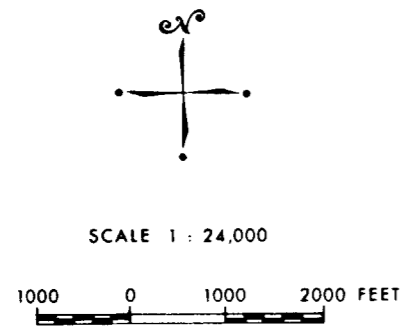
Section XII. Mattawoman Creek, The Gulf

The creeks described in this section are characterized by numerous fringe and pocket marsh areas. In fact, the shoreline is almost completely bordered with marsh, except for those sections such as Smith's Beach which are located along the Chesapeake Bay. For the most part the marsh areas described here are dominated by saltmarsh cordgrass (Type I) with black needlerush (Type III) which then usually grade landward to a zone of high marsh species (Type II, IV). These high marsh areas consisting of saltbushes and saltmeadow grasses may be found in the interior portions of the pocket marshes or along the uplands in the marsh fringes.

Besides their values as wildlife habitats and serving as a source of organic material, the marsh areas of this section help to filter out runoff from the uplands as well as serving as an erosion deterrent. This ability to protect the fastlands from erosion is evident along the Hungars Beach (#398) section of Chesapeake Bay shoreline. Those sections of shoreline fringed by marsh are relatively stable and well vegetated while adjacent areas with no marsh fringe are being rapidly undercut during storm periods.

The fringing marshes found along the Hungars Beach section of shoreline (#398) were some of the most heavily impacted areas resulting from the Chesapeake Bay oil spill of February 1976. Fortunately, wise clean up procedures combined with the lack of toxicity of the No. 6 oil to the grass and the dormancy of the plants during the period of the spill contributed to little plant mortality in these and similarly affected marsh areas to the north.

SECTION XII. MATTAWOMAN CREEK, THE GULF



Section XII. Mattawoman Creek, the Gulf

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
372	Mattawoman Creek	1.5	%	80	5	15				-														Small pocket and fringe marsh; mostly salt marsh cordgrass with saltbushes and saltmeadow grasses along upland edge.	I
			acres	1.2	0.1	0.2						-													
373	Mattawoman Creek	2.2	%	80	-	10	10			-		-												Pocket marsh dominated by saltmarsh cordgrass; berm with saltbushes partly across mouth.	I
			acres	1.8	-	0.2	0.2					-		-											
374	Mattawoman Creek	3.5	%	85	5	5	5			-		-										-		Cove with fringe of saltmarsh cordgrass along shoreline; several spits and pocket areas; some reed grass evident.	I
			acres	3.0	0.2	0.2	0.2					-		-											
375	Mattawoman Creek	0.90	%	85	5	10	-			-	-													Spit marsh of mostly saltmarsh cordgrass; meadow grasses and saltbushes at higher elevations.	I
			acres	0.76	0.04	0.09	-					-	-												
376	Mattawoman Creek	0.80	%	90	-	10	-			-														Small pocket marsh dominated by saltmarsh cordgrass; saltbushes around upland edge.	I
			acres	0.72	-	0.08	-					-													
377	Mattawoman Creek	0.50	%	45	5	25	25			-														Fringe marsh along shoreline and around small pocket area; mostly saltmarsh cordgrass and needlerush with saltbushes behind.	XII
			acres	0.22	0.2	0.12	0.12					-													
378	Mattawoman Creek	0.90	%	95	-	2	2			1														Pocket marsh area; some cattails at head but mostly saltmarsh cordgrass.	I
			acres	0.86	-	0.02	0.02				0.01														
379	Mattawoman Creek	3.5	%	95	-	-	5			-		-				-								Broad fringing marsh around shoreline of creek branch; several pocket areas include some cattail.	I
			acres	3.3	-	-	0.2				-		-				-								

Section XII. Mattawoman Creek, the Gulf
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
380	Mattawoman Creek	3.1	%	70	5	10	15			-		-						-						Fringing and spit marsh; dominated by saltmarsh cordgrass but other species at higher elevations throughout.	I
			acres	2.2	0.2	0.3	0.5			-		-								-					
381	Mattawoman Creek	0.40	%	95	-	5	-		-			-				-	-							Narrow saltmarsh cordgrass dominated marsh fringe; average width 5 ft; several small pocket areas.	I
			acres	0.38	-	0.02	-			-		-		-				-	-						
382	Mattawoman Creek	11.3	%	65	15	15	-		5			-		-	-	-	-							Pocket marsh at head of creek branch; dominated by saltmarsh cordgrass with saltbush and meadow areas.	I
			acres	7.3	1.7	1.7	-		0.6		-		-		-	-	-	-							
383	Mattawoman Creek	0.30	%	95	-	5	-					-												Saltmarsh cordgrass dominated marsh fringe; average width 5 ft.	I
			acres	0.28	-	0.02	-						-												
384	Mattawoman Creek	12.6	%	65	10	15	5		5			-		-		-	-							Pocket marsh with two branches; mostly saltmarsh cordgrass with saltbushes and meadow grasses in upstream sections.	I
			acres	8.2	1.3	1.9	0.6		0.6				-		-		-	-							
385	Mattawoman Creek	0.70	%	100	-	-	-		-			-				-								Saltmarsh cordgrass dominated marsh fringe 1-5 ft. wide; marsh absent in areas shaded by trees.	I
			acres	0.70	-	-	-			-			-				-								
386	Mattawoman Creek	0.40	%	90	-	10	-				-													Fringing marsh; mostly saltmarsh cordgrass with saltbushes along upland edge.	I
			acres	0.36	-	0.04	-					-		-											
387	Mattawoman Creek	1.00	%	80	2	5	10		1	-	-	2				-	-							Fringing marsh; mostly saltmarsh cordgrass with patches of needlerush; other species along upland edge.	I
			acres	0.64	0.02	0.04	0.08		0.01	-	-	0.02					-	-							

Section XII. Mattawoman Creek, the Gulf
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
388	Mattawoman Creek	2.0	%	75	10	5	10			-								-						Pocket marsh; dominated by saltmarsh cordgrass with areas of meadow grasses and needlerush.	I
			acres	1.5	0.02	0.01	0.02																		
389	Mattawoman Creek	0.90	%	95	4	1				-	-							-						Spit marsh; mostly saltmarsh cordgrass with other species at higher elevations along spit.	I
			acres	0.86	0.04	0.01																			
390	Mattawoman Creek	2.3	%	95	1	1	-		2			1		-				-						Pocket marsh at head of cove but below road; mostly saltmarsh cordgrass with scattered patches of cattail.	I
			acres	2.2	-	-	-																		
391	Mattawoman Creek	1.6	%	75	10	10	5			-	-							-						Marsh fringe along shoreline with small marsh pockets mostly saltmarsh cordgrass with high marsh in pocket areas.	I
			acres	1.2	0.2	0.2	0.1																		
392	Mattawoman Creek	1.00	%	35	30	20	15				-	-						-						Pocket marsh; saltmarsh cordgrass along creek grades back to interior of high marsh.	XII
			acres	0.35	0.30	0.20	0.15																		
393	Mattawoman Creek	5.3	%	85	5	10						-						-						Fringing marsh along long section of shoreline 5-100 ft. wide; mostly saltmarsh cordgrass with zone of saltbushes and meadow along upland.	I
			acres	4.5	0.3	0.5																			
394	Barlow Creek	7.4	%	50	-	-	45		5			-						-						Pocket marsh at head of creek branch; saltmarsh cordgrass dominated with large stands of needlerush.	I
			acres	3.7	-	-	3.3		0.4																
395	Barlow Creek	9.4	%	70	-	1	25		2			2												Pocket marsh; mostly saltmarsh cordgrass with stands of needlerush; scattered cattails and bulrush.	I
			acres	6.6	-	0.1	2.4		0.2				0.2												

Section XII. Mattawoman Creek, the Gulf
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
396	Old Town Neck	2.0	%	65	10	20	5		-		-	-						-						Marsh fringe; grades from saltmarsh cordgrass along water to saltbushes and salt meadow along upland.	I
			acres	1.3	0.2	0.4	0.1			-		-	-							-					
397	Old Town Neck	3.6	%	80	5	10	5		-	-	-	-												Pocketmarsh dominated by saltmarsh cordgrass; grades to high marsh in interior section and along uplands.	I
			acres	2.9	0.2	0.4	0.2			-	-	-	-												
398	Hungars Beach	1.8	%	95	5	-	-				-							-						Marsh fringe 5-50 ft. wide along shoreline; saltmarsh cordgrass along water grades back to narrow zone of saltmeadow and saltbushes.	I
			acres	1.7	0.1	-	-			-		-							-						
399	Hungars Beach	2.0	%	85	10	5		-		-								-						Marsh fringe with 30 ft. average width; saltmarsh cordgrass along water grades back to zone of high marsh species along upland.	I
			acres	1.7	0.2	0.1		-		-									-						
400	The Gulf	3.9	%	95	-	5	-	-			-							-						Wide saltmarsh cordgrass dominated marsh fringe near mouth of creek system.	I
			acres	3.7	-	0.2	-	-			-								-						
401	The Gulf	1.6	%	75	-	5	20		-			-						-						Saltmarsh cordgrass dominated marsh fringe along length of shoreline; abundant needlerush scattered throughout.	I
			acres	1.2	-	0.1	0.3		-			-							-						
402	The Gulf	0.30	%	80	-	-	5		15			-												Small pocket marsh dominated by saltmarsh cordgrass; significant stand of cattails.	I
			acres	0.24	-	-	0.02		0.04			-													
403	The Gulf	0.90	%	80	-	-	5		10			-												Pocket marsh dominated by saltmarsh cordgrass but with stands of cattails, hibiscus and needlerush.	I
			acres	0.72	-	-	0.04		0.09			-			0.04										

Section XII, Mattawoman Creek, the Gulf
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Oiney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
404	The Gulf	1.4	%	75	-	5	20		-			-												Saltmarsh cordgrass dominated marsh fringe along length of shoreline; abundant needlerush scattered throughout.	I
			acres	1.0	-	0.1	0.3		-				-												
405	The Gulf	9.1	%	90	-	-	5		5			-		-	-	-	-							Pocket marsh with two branches at head of creek; mostly saltmarsh cordgrass with scattered cattail and needlerush.	I
			acres	8.2	-	-	0.5		0.5				-		-	-	-	-							
406	The Gulf	0.60	%	70	-	-	20		10							-	-							Cove with saltmarsh cordgrass dominated marsh fringe and several small pocket areas.	I
			acres	0.42	-	-	0.12		0.06								-	-							
407	The Gulf	0.40	%	85	5	5	5									-	-							Intermittent saltmarsh cordgrass dominated marsh fringe; average width 5 ft.	I
			acres	0.34	0.02	0.02	0.02										-	-							
408	The Gulf	1.2	%	95	-	2	1		2															Small pocket marsh dominated by saltmarsh cordgrass; scattered cattail.	I
			acres	1.1	-	-	-		-																
409	The Gulf	0.40	%	75		-			25							-								Small pocket marsh of saltmarsh cordgrass; large stand of cattails.	I
			acres	0.30		-				0.10							-								
410	The Gulf	2.0	%	95	-	-	-		5					-		-	-							Pocket marsh at head of creek branch; dominated by saltmarsh cordgrass with cattails in uppermost sections.	I
			acres	1.9	-	-	-		0.1						-		-	-							
411	The Gulf	0.70	%	95	-	-	5																	Saltmarsh cordgrass dominated marsh fringe along length of shoreline; scattered black needlerush; both sides of creek branch included.	I
			acres	0.66	-	-	0.04																		

Section XII. Mattawoman Creek, the Gulf
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
412	The Gulf	1.4	%	95	-	5			-			-				-								Saltmarsh cordgrass dominated marsh fringe along length of shoreline; cattails in pocket areas.	I
			acres	1.3	-	0.1				-			-					-							
413	The Gulf	4.0	%	100							-													Saltmarsh cordgrass inlands scattered across creek mouth.	I
			acres	4.0								-													
414	The Gulf	3.0	%	95	5		-			-														Saltmarsh cordgrass dominated spit marsh; saltmeadow and other species along upland edge.	I
			acres	2.8	0.2		-		-																
	Total Section XII	113.6	%	78	5	7	8	-	2	-	-	-		-	-	-	-	-							
			acres	88.3	5.5	7.4	9.5	-	2.7	-	-	-	0.2		-	-	-	-	-						

Section XIII. Cherrystone Inlet

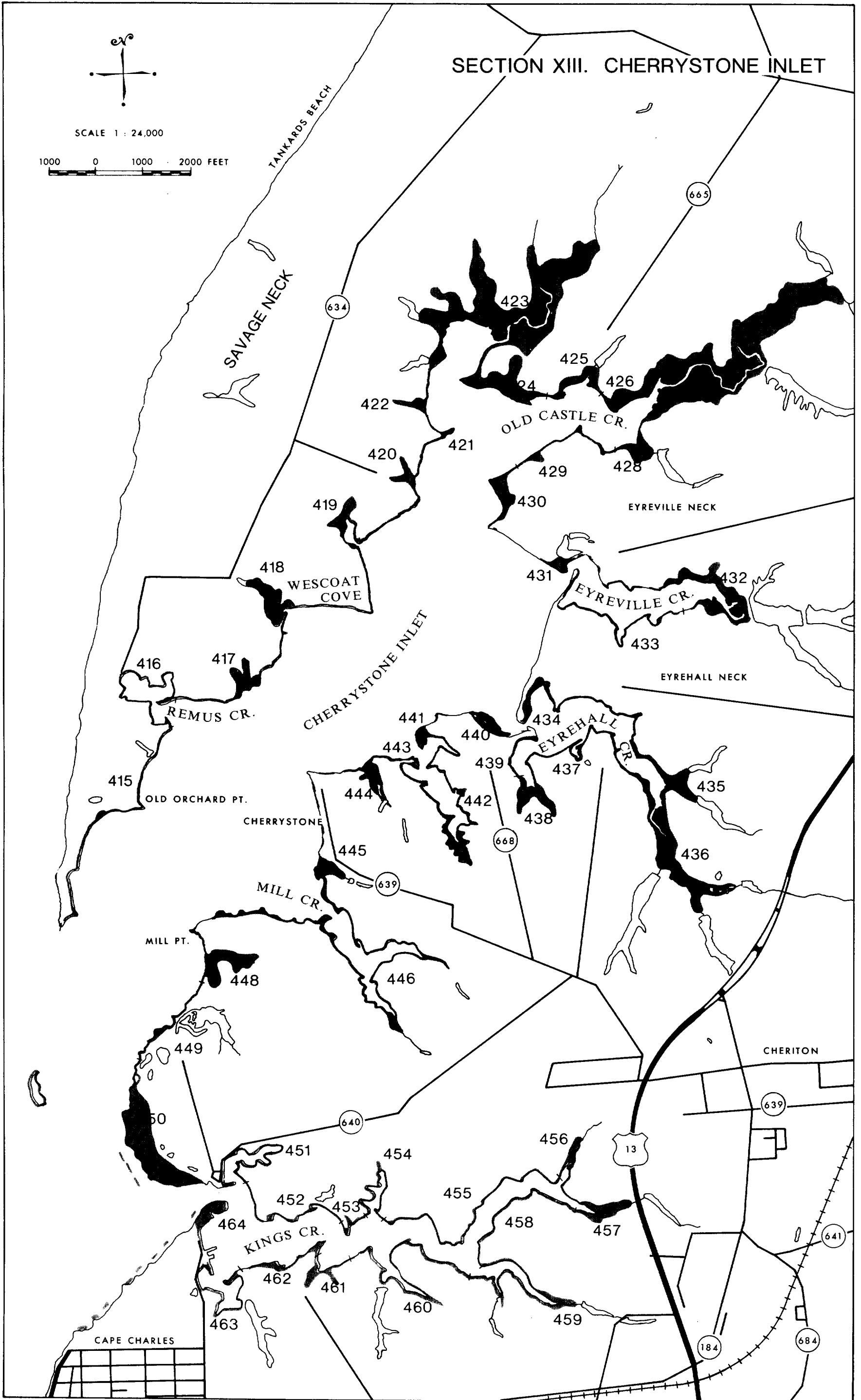
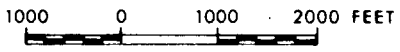
The tidal marshes found within the Cherrystone Inlet region are very similar to the other marsh areas found further north in both Hungars and Nassawadox Creeks (Sections XI and X). The shorelines within Cherrystone Inlet and its adjacent creeks are almost completely vegetated with saltmarsh cordgrass (Type I) dominated fringe and pocket marsh areas. In most sections, especially in the interior sections of the pocket marshes, this low marsh grades to adjacent high marsh areas of saltbushes (Type IV) and saltmeadow grasses (Type II). There are several large creek marshes located at the head of Cherrystone Inlet (#423, 427). These marshes grade from lower portions dominated by saltmarsh cordgrass to upstream areas vegetated by saltbushes and saltmeadow grasses.

In contrast to the shoreline within Cherrystone Inlet, the shoreline of Savage Neck which fronts along the Chesapeake Bay is devoid of marsh. This is due to the high energy nature of the area and rapid erosion is evident along much of its length.

SECTION XIII. CHERRYSTONE INLET



SCALE 1 : 24,000



Section XIII, Cherrystone Inlet

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type	
415	Cherrystone Inlet	1.5	%	55	20	25				-								-							Saltmarsh cordgrass dominated marsh fringe; small pocket marsh area partially blocked by sand beach; interior mostly saltbushes and meadow.	I
			acres	0.8	0.3	0.4						-								-						
416	Remus Creek	2.0	%	90	-	10			-	-	-														Cove with two marsh spits of mostly saltmarsh cordgrass at mouth; fringe of cordgrass around shoreline; pocket marsh of saltbushes and cattails at head.	I
			acres	1.8	-	0.2					-	-	-													
417	Cherrystone Inlet	4.1	%	40	20	40				-		-							-						Pocket marsh with saltmarsh cordgrass dominating portion of marsh nearest creek; interior section mostly saltbushes and meadow.	XII
			acres	1.6	0.8	1.6					-		-							-						
418	Wescoat Cove	8.8	%	95	-	5			-			-													Cove completely filled with recently established saltmarsh cordgrass; saltbushes around upland as well as on spit at mouth.	I
			acres	8.4	-	0.4					-		-													
419	Cherrystone Inlet	4.1	%	85	5	5	-		5		-	-							-						Cove marsh dominated by saltmarsh cordgrass; several pockets of cattail at head of cove while high marsh species fringe along upland.	I
			acres	3.5	0.2	0.2	-		0.2		-		-							-						
420	Cherrystone Inlet	3.1	%	85	5	10			-	-		-							-						Pocket marsh dominated by saltmarsh cordgrass; saltbushes and meadow fringe along upland.	I
			acres	2.6	0.2	0.3					-	-		-						-						
421	Cherrystone Inlet	0.90	%	50	15	35				-									-						Spit marsh; areas of highest elevation on spit vegetated with saltbushes and meadow grasses; remainder mostly saltmarsh cordgrass.	I
			acres	0.45	0.14	0.32					-									-						
422	Cherrystone Inlet	3.1	%	40	25	35			-				-	-											Pocket marsh; saltmarsh cordgrass dominates lower portion; grades to high marsh of saltbushes and meadow grasses.	XII
			acres	1.2	0.8	1.1					-			-	-											

Section XIII. Cherrystone Inlet
(continued)

#	Marsh Location	Total Acres		Saltmarsh	Saltmeadow	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
				Cordgrass	Grasses																				
423	Cherrystone Inlet	68.8	%	30	30	40	-		-			-	-	-	-	-	-	-	-	-				Large pocket marsh areas with several branches; lower portions dominated by saltmarsh cordgrass; grades upstream to saltbush and meadow areas.	XII
			acres	20.6	20.6	27.5	-		-					-	-	-	-	-	-	-	-				
424	Cherrystone Inlet	11.8	%	15	55	30				-								-						Saltmarsh cordgrass along waters edge; grades back to high marsh dominated by saltbushes and meadow grasses mixed with cedar, holly, pine.	II
			acres	1.8	6.5	3.5					-														
425	Old Castle Creek	5.1	%	85	5	5			5			-	-			-						-		Pocket marsh; dominated by saltmarsh cordgrass; upper section has been dammed forming pond.	I
			acres	4.3	0.3	0.3			0.3				-	-			-						-		
426	Old Castle Creek	4.3	%	90	2	6			2			-	-											Marsh fringe dominated by saltmarsh cordgrass; cattails and saltbushes along upland edge.	I
			acres	3.9	0.1	0.3			0.1				-	-											
427	Old Castle Creek	78.3	%	35	30	30	-		-			-	5	-	-	-	-					-		Large creek marsh; downstream section dominated by salt marsh cordgrass; upstream portion mostly saltbushes and meadow grasses with scattered big cordgrass.	XII
			acres	27.4	23.5	23.5	-		-				-	3.9	-	-	-	-					-		
428	Old Castle Creek	5.2	%	80	8	10	-		2		-	-												Pocket marsh dominated by saltmarsh cordgrass; upper portion dammed forming pond.	I
			acres	4.2	0.4	0.5	-		0.1			-	-												
429	Old Castle Creek	1.9	%	75	5	20						-												Saltmarsh cordgrass dominated marsh fringe; includes two pocket marsh areas.	I
			acres	1.4	0.1	0.4							-												
430	Cherrystone Inlet	4.5	%	50	20	30	-			-		-												Wide fringing marsh; saltmarsh cordgrass areas grade to saltbushes and meadow grasses.	I
			acres	2.2	0.9	1.4	-				-		-												

Section XIII. Cherrystone Inlet
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
431	Eyreville Creek	1.4	%	40	15	40	-			5		-					-							Large spit marsh at mouth of creek; saltmarsh cordgrass grades into large, high marsh areas; sea oxeye at highest elevations.	XII
			acres	0.6	0.2	0.6	-			0.1		-													
432	Eyreville Creek	12.5	%	80	5	2	5		3			3	2	-	-			-				-		Creek marsh dominated by saltmarsh cordgrass; needlerush, big cordgrass, cattails bulrush in pockets fringing uplands.	I
			acres	10.0	0.6	0.2	0.6		0.4				0.4	0.2	-	-									
433	Eyreville Creek	1.2	%	85	5	10	-		-			-	-	-	-			-						Saltmarsh cordgrass dominated marsh fringe 5-20 ft. wide; saltbushes and meadow grass at highest elevations along uplands.	I
			acres	1.0	0.1	0.1	-		-				-	-	-	-									
434	Eyrehall Creek	3.7	%	85	5	10		-		-		-						-						Saltmarsh cordgrass dominated marsh formed behind large sand spit at mouth of creek.	I
			acres	3.1	0.2	0.4		-					-												
435	Eyrehall Creek	7.6	%	70	10	20			-			-						-						Pocket marsh with two branches that have been dammed forming ponds; saltmarsh cordgrass grades upstream to saltbushes and meadow grass.	I
			acres	5.3	0.8	1.5		-					-												
436	Eyrehall Creek	21.3	%	80	15	5			-			-						-						Creek marsh dominated throughout by saltmarsh cordgrass; scattered meadow grasses and saltbushes; cattails along upland.	I
			acres	17.0	3.2	1.1		-					-												
437	Eyrehall Creek	2.9	%	90	5	5			-			-												Pocket marsh dominated by saltmarsh cordgrass; saltmeadow grasses and saltbushes fringe along uplands.	I
			acres	2.6	0.1	0.1		-					-												
438	Eyrehall Creek	6.9	%	85	-	15			-			-		-	-	-								Pocket marsh with two branches; dominated by saltmarsh cordgrass; saltbushes in upstream portions.	I
			acres	5.9	-	1.0		-					-		-	-	-								

Section XIII. Cherrystone Inlet
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
431	Eyreville Creek	1.4	%	40	15	40	-			5		-					-							Large spit marsh at mouth of creek; saltmarsh cordgrass grades into large, high marsh areas; sea oxeye at highest elevations.	XII
			acres	0.6	0.2	0.6	-			0.1		-													
432	Eyreville Creek	12.5	%	80	5	2	5		3			3	2	-	-			-						Creek marsh dominated by saltmarsh cordgrass; needlerush, big cordgrass, cattails bulrush in pockets fringing uplands.	I
			acres	10.0	0.6	0.2	0.6		0.4			0.4	0.2	-	-										
433	Eyreville Creek	1.2	%	85	5	10	-		-			-	-	-	-			-						Saltmarsh cordgrass dominated marsh fringe 5-20 ft. wide; saltbushes and meadow grass at highest elevations along uplands.	I
			acres	1.0	0.1	0.1	-		-		-	-	-	-	-										
434	Eyrehall Creek	3.7	%	85	5	10	-		-			-						-						Saltmarsh cordgrass dominated marsh formed behind large sand spit at mouth of creek.	I
			acres	3.1	0.2	0.4	-		-		-			-											
435	Eyrehall Creek	7.6	%	70	10	20			-			-						-						Pocket marsh with two branches that have been dammed forming ponds; saltmarsh cordgrass grades upstream to saltbushes and meadow grass.	I
			acres	5.3	0.8	1.5			-		-			-											
436	Eyrehall Creek	21.3	%	80	15	5			-			-						-						Creek marsh dominated throughout by saltmarsh cordgrass; scattered meadow grasses and saltbushes; cattails along upland.	I
			acres	17.0	3.2	1.1			-		-			-											
437	Eyrehall Creek	2.9	%	90	5	5			-			-												Pocket marsh dominated by saltmarsh cordgrass; saltmeadow grasses and saltbushes fringe along uplands.	I
			acres	2.6	0.1	0.1			-		-			-											
438	Eyrehall Creek	6.9	%	85	-	15			-			-												Pocket marsh with two branches; dominated by saltmarsh cordgrass; saltbushes in upstream portions.	I
			acres	5.9	-	1.0			-		-			-											

Section XIII. Cherrystone Inlet
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
439	Eyrehall Creek	0.70	%	85	5	10																		Saltmarsh cordgrass dominated fringe marsh; saltbushes and saltmeadow grasses are found along uplands.	I
			acres	0.60	0.04	0.07																			
440	Eyrehall Creek	3.7	%	85	5	10				-	-													Fringe marsh at mouth of creek; saltmarsh cordgrass behind spit; saltbushes and meadow along spit at higher elevations.	I
			acres	3.1	0.2	0.4																			
441	Cherrystone Inlet	2.6	%	85	5	10				-	-	-												Spit marsh at mouth of small creek; berm of saltbushes and meadow with saltmarsh cordgrass behind.	I
			acres	2.2	0.1	0.3																			
442	Cherrystone Inlet	7.2	%	90	3	5	2		-	-	-	-												Saltmarsh cordgrass dominated fringe and pocket marsh areas within small creek.	I
			acres	6.5	0.2	0.4	0.1																		
443	Cherrystone Inlet	1.2	%	80	5	10				2	-	-												Spit marsh at mouth of small creek; high marsh species along upland spit; saltmarsh cordgrass dominates remainder of marsh.	I
			acres	1.0	0.1	0.1																			
444	Cherrystone Inlet	4.5	%	85	5	10				-	-	-												Pocket marsh dominated by saltmarsh cordgrass; berm with saltbushes partially across mouth; interior of high marsh species.	I
			acres	3.8	0.2	0.4																			
445	Cherrystone Inlet	6.7	%	80	10	10				-	-	-												Pocket marsh dominated by saltmarsh cordgrass; berm dominated by saltbushes and saltmeadow grasses partially across mouth.	I
			acres	5.4	0.7	0.7																			
446	Mill Creek	5.3	%	80	5	10	3		2	-	-	-												Creek with saltmarsh cordgrass dominated marsh fringe along shoreline; two branches with pocket marshes at heads; some cattails and needlerush in these pockets.	I
			acres	4.2	0.3	0.5	0.2			0.1															

Section XIII. Cherrystone Inlet
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
447	Cherrystone Inlet	1.00	%	75	10	15		-			-						-							Saltmarsh cordgrass dominated marsh fringe; zone of saltbushes and meadow grasses along upland.	I
			acres	0.75	0.10	0.15		-					-												
448	Cherrystone Inlet	9.1	%	80	5	5	10		-	-	-	-		-	-			-						Pocket marsh dominated by saltmarsh cordgrass; significant stands of black needlerush.	I
			acres	7.3	0.5	0.5	0.9		-	-	-	-		-	-										
449	Cherrystone Inlet	1.9	%	85	5	10					-						-							Intermittent saltmarsh cordgrass dominated marsh fringe; saltmeadow grasses and saltbushes along uplands.	I
			acres	1.6	0.1	0.2						-													
450	Cherrystone Inlet	25.0	%	90	5	5					-													Wide fringing marsh dominated by saltmarsh cordgrass; heavily eroding at south end.	I
			acres	22.5	1.2	1.2						-													
451	Kings Creek	2.0	%	90	-	10				-														Cove with 5-30 ft. wide fringe of saltmarsh cordgrass along shoreline; spit with saltbushes partially across mouth.	I
			acres	1.8	-	0.2					-														
452	Kings Creek	1.2	%	85	5	10					-							-						Marsh fringe dominated by saltmarsh cordgrass; new boat basin dredged across marsh and into upland.	I
			acres	1.0	0.1	0.1						-													
453	Kings Creek	0.90	%	85	5	10			-	-		-												Small marsh spit with adjacent pocket marsh area; high marsh species on spit with saltmarsh cordgrass dominating pocket area.	I
			acres	0.76	0.04	0.09				-	-		-												
454	Kings Creek	0.80	%	95	-	2			3			-												Cove with saltmarsh cordgrass fringe along shoreline; cattails in several small pocket areas.	I
			acres	0.76	-	0.02				0.02			-												

Section XIII. Cherrystone Inlet
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
455	Kings Creek	1.3	%	80	5	15			-	-		-			-	-	-	-						Marsh fringe 5-20 ft. wide along length of shoreline; several small marsh spits with some high marsh.	I
			acres	1.0	0.1	0.2			-	-		-		-		-	-	-	-						
456	Kings Creek	3.3	%	75	-	10	-		3			2				10		-						Pocket marsh dominated by saltmarsh cordgrass; abundant water hemp; several stands of cattail.	I
			acres	2.5	-	0.3	-		0.1				0.1				0.3		-						
457	Kings Creek	5.5	%	70	5	15	2		2			1		-		5		-						Pocket marsh; lower portion mostly saltmarsh cordgrass and marsh hemp; upper portion dominated by saltbushes.	I
			acres	3.8	0.3	0.8	0.1		0.1				0.1		-		0.3		-						
458	Kings Creek	0.90	%	90	-	10	-			-								-						Marsh fringe dominated by saltmarsh cordgrass; average width 10 ft; includes several small pocket marsh areas.	I
			acres	0.81	-	0.09	-				-									-					
459	Kings Creek	3.2	%	90	-	3			1			3		-	-	3		-						Fringe and pocket marsh areas along creek branch; saltmarsh cordgrass dominates along water with other species towards uplands.	I
			acres	2.9	-	0.1				-			0.1		-	-	0.1		-						
460	Kings Creek	1.3	%	80	5	10	-		-	-		-		-	-	-		5				-		Marsh fringe along length of shoreline; includes several pocket and spit areas; saltmarsh cordgrass along creek with other species along uplands.	I
			acres	1.0	0.1	0.1	-			-	-		-		-	-	-		0.1				-		
461	Kings Creek	2.1	%	90	3	4			-	1				-		-		1				1		Two pocket marshes dominated by saltmarsh cordgrass; hibiscus and reed grass at heads of pockets.	I
			acres	1.9	0.1	0.1				-	-				-		-								
462	Kings Creek	3.5	%	80	10	10	-				-	-			-									Saltmarsh cordgrass dominated fringe and spit marsh; saltmarsh cordgrass dominates along water with high marsh species behind.	I
			acres	2.8	0.4	0.4	-					-	-			-									

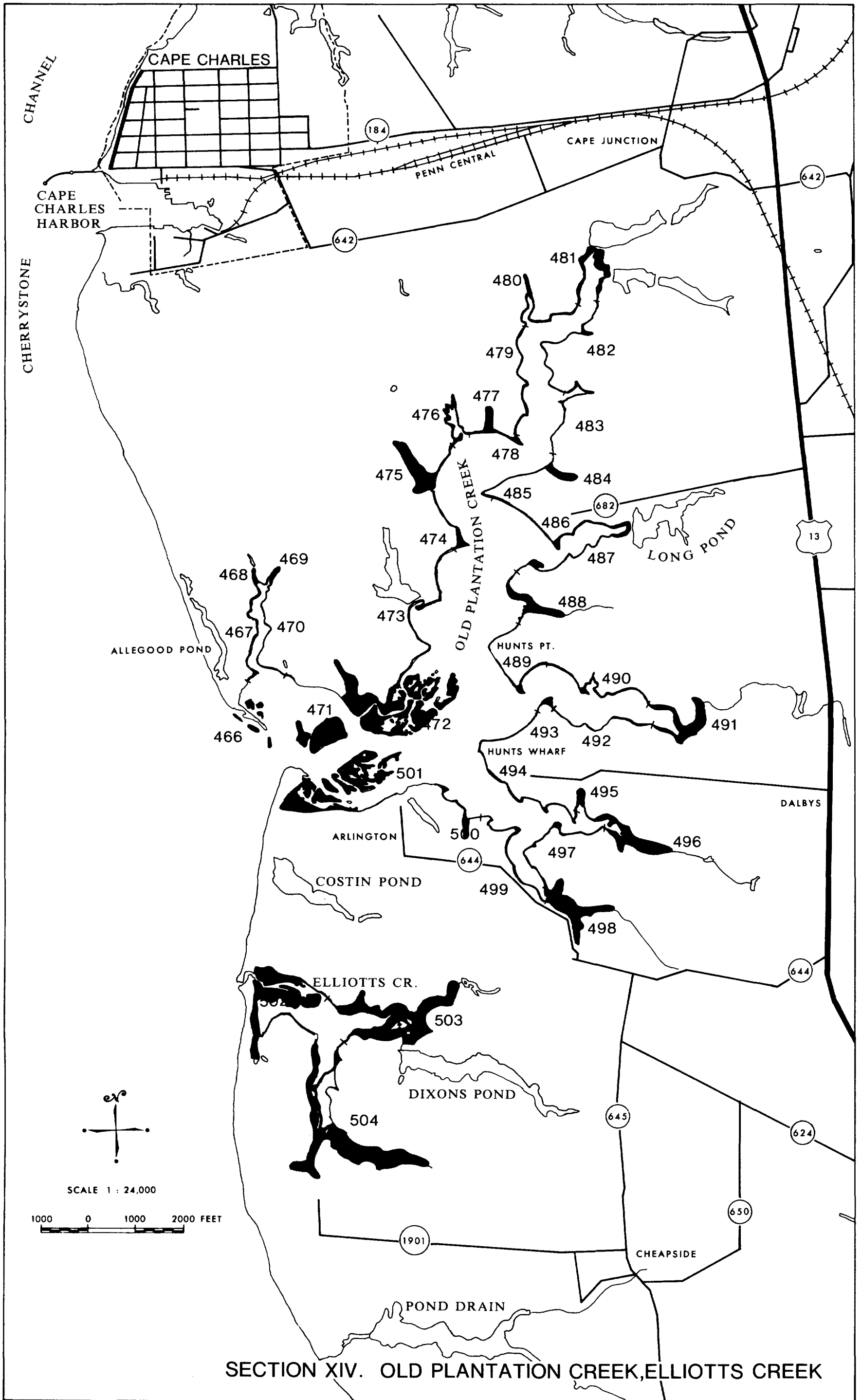
Section XIII. Cherrystone Inlet
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
463	Kings Creek	1.2	%	75	10	15				-		-		-				-						Cove with saltmarsh cordgrass dominated fringe around shoreline; two marsh spits at mouth with cordgrass surrounding high marsh species.	I
			acres	0.9	0.1	0.2				-		-		-		-				-					
464	Kings Creek	1.7	%	85	10	5				-	-						-				-			Saltmarsh cordgrass dominated marsh formed behind large sand spit at mouth of creek.	I
			acres	1.4	0.2	0.1				-	-								-						
465	Cape Charles	1.0	%	100	-																-			Scattered patches of saltmarsh cordgrass along shoreline that is of predominately sand beach.	I
			acres	1.0	-																	-			
	Total Section XIII	363.8	%	59	18	21	1	-	-	-	-	-	1	-	-	-	-	-		-	-	-			
			acres	214.9	65.2	74.6	1.9	-	1.4	0.1	-	0.7	4.1	-	-	0.7	-	0.1		-	-	-			

Section XIV. Old Plantation, Elliotts Creek

The shoreline within Old Plantation Creek is for the most part bordered by fringe and pocket marsh areas that are vegetated with saltmarsh cordgrass (Type I). Interior sections of the pocket marshes grade to high marsh zones vegetated with saltmeadow grasses (Type II) and saltbushes (Type IV). Many of these pockets also contain stands of cattails that are located in areas where the freshwater supply is adequate. Old Plantation Creek also has several large delta marshes that have formed on sediments deposited just inside its mouth (#471, 472, 501). These are almost completely vegetated with saltmarsh cordgrass.

Other than Old Plantation Creek, Elliotts Creek is the only other marsh area found along Northampton County's Bayside shoreline between the City of Cape Charles and Fisherman's Island. The remainder of the shoreline is of sand beach with no marsh present. The marsh within Elliotts Creek consists of two large pocket areas (#503, 504) which fill in most of the two creek branches. These pocket marshes are vegetated with saltmarsh cordgrass, with stands of black needle-rush (Type III) and high marsh species found in the upstream sections. A large delta marsh has been formed inside the mouth of the creek (#502) and it is dissected by several, narrow drainage channels. This marsh area is again dominated by saltmarsh cordgrass with high marsh species present only along the upland border.



Section XIV. Old Plantation, Elliotts Creek

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
466	Old Plantation Creek	2.0	%	95	5	-				-														Scattered patches of saltmarsh cordgrass along both creek and bay side of sand spit; scattered high marsh areas.	I
			acres	1.9	0.1	-					-														
467	Old Plantation Creek	0.60	%	90	5	5				-					-									Saltmarsh cordgrass dominated marsh fringe; scattered saltmeadow grasses and saltbushes at higher elevations.	I
			acres	0.54	0.03	0.03					-					-									
468	Old Plantation Creek	0.80	%	100	-	-		-	-													-		Pocket marsh at head of creek branch; almost entirely saltmarsh cordgrass.	I
			acres	0.80	-	-			-	-													-		
469	Old Plantation Creek	1.00	%	80	-	-			10													10		Pocket marsh at head of creek branch; several patches of cattails and reed grass.	I
			acres	0.80	-	-				0.10													0.10		
470	Old Plantation Creek	0.60	%	90	5	5				-					-									Saltmarsh cordgrass dominated marsh fringe; 10-15 ft. average width.	I
			acres	0.36	0.03	0.03					-					-									
471	Old Plantation Creek	8.7	%	100	-	-				-														Saltmarsh cordgrass marsh islands at mouth of creek extending over tidal flats.	I
			acres	8.7	-	-					-														
472	Old Plantation Creek	26.6	%	95	3	2			-		-													Creek marsh of saltmarsh cordgrass; marsh is dissected by many shallow marsh channels; high marsh along uplands and extending into pocket area.	I
			acres	25.3	0.8	0.5				-		-													
473	Old Plantation Creek	1.00	%	75	20	5					-													Long marsh fringe along section of shoreline dominated by saltmarsh cordgrass with saltbushes and meadow along upland edge.	I
			acres	0.75	0.20	0.05						-													

Section XIV. Old Plantation Creek, Elliotts Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
474	Old Plantation Creek	1.10	%	70	10	15				-							-	5						Spit marsh; saltmarsh cordgrass along creek; interior section dominated by high marsh species.	I
			acres	0.77	0.11	0.16													-	0.06					
475	Old Plantation Creek	8.4	%	80	10	5	3		2	-		-		-									-	Creek marsh dominated by saltmarsh cordgrass; patches of needlerush, cattails and reed grass in upper section.	I
			acres	6.7	0.8	0.4	0.3			0.2	-		-												
476	Old Plantation Creek	1.5	%	90	5	5			-	-		-		-									-	Small cove with saltmarsh cordgrass around shoreline; spit partially across mouth.	I
			acres	1.4	0.1	0.1				-	-		-												
477	Old Plantation Creek	1.7	%	95	-	5			-	-														Pocket marsh dominated by saltmarsh cordgrass; saltbushes along upland edge.	I
			acres	1.6	-	0.1				-	-														
478	Old Plantation Creek	0.60	%	80	10	10				-														Small spit marsh; mostly saltmarsh cordgrass but with some high marsh areas.	I
			acres	0.48	0.06	0.06																			
479	Old Plantation Creek	0.60	%	90	5	5	-			-		-												Marsh fringe of 5-15 ft. width; saltmarsh cordgrass predominates with zone of high marsh species along upland.	I
			acres	0.54	0.03	0.03	-																		
480	Old Plantation Creek	1.7	%	95	-	-			5															Pocket marsh dominated by saltmarsh cordgrass; stands of cattail in interior section.	I
			acres	1.6	-	-				0.1															
481	Old Plantation Creek	5.0	%	90	5	-	-		5															Marsh fringe formed below dam at head of creek branch; mostly saltmarsh cordgrass with some cattail.	I
			acres	4.5	0.2	-	-			0.2															

Section XIV. Old Plantation Creek, Elliotts Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
482	Old Plantation Creek	1.00	%	95	5	-												-						Fringe marsh 5-30 ft. wide; predominately saltmarsh cordgrass.	I
			acres	0.95	0.05	-														-					
483	Old Plantation Creek	0.90	%	90	5	5			-															Small cove with fringe and pocket marsh areas dominated by saltmarsh cordgrass; includes adjacent fringing marsh area.	I
			acres	0.81	0.04	0.04					-														
484	Old Plantation Creek	2.9	%	55	15	25				5		-		-	-									Pocket marsh; lower portion dominated by saltmarsh cordgrass; grades back to high marsh of saltbushes and meadow grasses.	I
			acres	1.6	0.4	0.7					0.1		-		-	-									
485	Old Plantation Creek	0.90	%	60	30	10				-							-	-						Spit marsh; saltmarsh cordgrass along water; grades to high marsh species.	I
			acres	0.54	0.27	0.09					-								-	-					
486	Old Plantation Creek	1.10	%	90	5	5						-												Marsh fringe dominated by saltmarsh cordgrass; average width 10 ft.; includes marsh spit with some high marsh species.	I
			acres	0.99	0.06	0.06								-											
487	Old Plantation Creek	2.1	%	85	5	5			1			4		-	-									Saltmarsh cordgrass dominated section of marsh fringe; includes spit and pocket areas and extends in front of dam, as well as marsh spit at front of creek branch.	I
			acres	1.8	0.1	0.1					-		0.1		-	-									
488	Old Plantation Creek	5.2	%	90	5	3			1			1		-	-			-	-					Fringe and pocket marsh dominated by saltmarsh cordgrass; hibiscus and cattails found in interior of pocket.	I
			acres	5.6	0.3	0.2					-		-		-	-									
489	Old Plantation Creek	1.00	%	90	-	5				5	-													Section of shoreline with fringing marsh dominated by saltmarsh cordgrass; includes spit with interior of high marsh species.	I
			acres	0.90	-	0.05					0.05	-													

Section XIV. Old Plantation Creek, Elliotts Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
490	Old Plantation Creek	0.80	%	90	5	5			-			-												Fringe marsh dominated by saltmarsh cordgrass; average width 10 ft.; high marsh species along upland edge.	I
			acres	0.72	0.04	0.04				-															
491	Old Plantation Creek	7.7	%	80	5	5			5			5		-										Fringe and pocket marsh at head of creek branch; dominated by saltmarsh cordgrass with stands of cattails and abundant bulrush.	I
			acres	6.2	0.4	0.4				0.4			0.4		-										
492	Old Plantation Creek	0.50	%	90	5	5			-			-												Fringe marsh dominated by saltmarsh cordgrass; average width 10 ft.; high marsh species along upland edge.	I
			acres	0.45	0.02	0.02				-															
493	Old Plantation Creek	1.2	%	90	5	5					-	-					-							Spit marsh of predominately saltmarsh cordgrass; high marsh species along upland.	I
			acres	1.1	0.1	0.1							-						-						
494	Old Plantation Creek	1.8	%	90	5	5						-												Marsh fringe along length of shoreline; includes several small marsh spits.	I
			acres	1.6	0.1	0.1																			
495	Old Plantation Creek	1.3	%	85	5	-	10					-		-										Small pocket marsh dominated by saltmarsh cordgrass; significant stand of needlerush.	I
			acres	1.1	0.1	-	0.1																		
496	Old Plantation Creek	7.2	%	95	-	-			5			-		-			-							Pocket marsh at head of creek branch; almost entirely saltmarsh cordgrass with scattered stands of cattail.	I
			acres	6.8	-	-				0.4															
497	Old Plantation Creek	1.10	%	90	5	5						-												Marsh fringe along section of shoreline; average width 15 ft.; saltmarsh cordgrass grades back to high marsh species along uplands.	I
			acres	0.99	0.06	0.06																			

Section XIV. Old Plantation Creek, Elliotts Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh	Saltmeadow	Saltbushes	Black	Saltwort	Cattails	Sea	Sea	Saltmarsh	Big	Marsh	Marsh	Water	Saltmarsh	Saltmarsh	Olney	Marsh	Sea	Reed	Suaeda	Observations	Marsh Type
				Cordgrass	Grasses	Needlerush			Oxeye	Lavender	Bulrush	Cordgrass	Hibiscus	Mallow	Hemp	Aster	Fimbristylis	Threesquare	Fleabane	Rocket	Grass				
498	Old Plantation Creek	10.0	%	95	-	-			2			3		-	-									Pocket marsh at head of creek branch; almost entirely saltmarsh cordgrass with scattered cattails and bulrush.	I
			acres	9.5	-	-			0.2			0.3			-	-									
499	Old Plantation Creek	1.10	%	90	5	5			-			-												Marsh fringe along length of shoreline; dominated by saltmarsh cordgrass with saltbushes and meadow along upland.	I
			acres	0.99	0.06	0.06			-			-													
500	Old Plantation Creek	2.6	%	95	5	-			-			-												Fringe and pocket marsh dominated by saltmarsh cordgrass; high marsh species along upland and at head of pocket.	I
			acres	2.5	0.1	-			-			-													
501	Old Plantation Creek	21.5	%	98	2	-	-		-	-														Creek marsh almost completely of saltmarsh cordgrass; some high marsh species along upland and along sand spit.	I
			acres	21.1	0.4	-			-		-	-													
502	Elliotts Creek	19.5	%	90	3	2	3	-		-		2												Marsh dominated by saltmarsh cordgrass formed behind sand berm at mouth of creek; high marsh species including bulrush along upland border.	I
			acres	17.6	0.6	0.4	0.6	-		-		0.4													
503	Elliotts Creek	29.0	%	80	4	2	10		2			1		-	-	-	-					1		Large pocket marsh formed along one branch of creek; dominated by saltmarsh cordgrass with stands of needlerush; other species scattered throughout.	I
			acres	23.2	1.2	0.6	2.9		0.6			0.3			-	-	-	-					0.3		
504	Elliotts Creek	37.0	%	85	5	3	5		2					-	-	-	-							Large pocket marsh with two branches; dominated by saltmarsh cordgrass; other species scattered throughout.	I
			acres	31.4	1.8	1.1	1.8		0.7						-	-	-	-							
	Total Section XIV.	219.3	%	89	4	3	3	-	1	-	-	1		-	-	-	-	-							
			acres	195.2	8.7	5.6	5.7	-	2.9	0.15	-	1.5			-	-	-	-	0.06						

Section XIV. Old Plantation Creek, Elliotts Creek
(continued)

#	Marsh Location	Total Acres		Saltmarsh Cordgrass	Saltmeadow Grasses	Saltbushes	Black Needlerush	Saltwort	Cattails	Sea Oxeye	Sea Lavender	Saltmarsh Bulrush	Big Cordgrass	Marsh Hibiscus	Marsh Mallow	Water Hemp	Saltmarsh Aster	Saltmarsh Fimbristylis	Olney Threesquare	Marsh Fleabane	Sea Rocket	Reed Grass	Suaeda	Observations	Marsh Type
	Total Ocean Side Sections I-XIII	36220.3	%	90	2	1	-	7	-	-	-			-			-	-	-		-	-	-		
			acres	32686	650.5	377.6	75.4	2368.	3.8	47.2	3.4			-			-	1.1	-		5.1	-	-		
	Total Bay Side Section IX-XIII	1404.9	%	59	10	16	9	-	3	-	-	-	2	-	-	-	-	-	-	-	-	-	-		
			acres	835.9	141.9	217.8	126.0	-	37.5	0.3	-	5.0	32.8	4.2	1.8	2.5	-	0.2	-	-	-	0.5	-		
	Total Northampton County	37625.2	%	89	2	2	1	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
			acres	33522	792.4	595.4	201.4	2368.	41.3	47.5	3.4	5.0	32.8	4.2	1.8	2.5	-	1.3	-	-	5.1	0.5	-		

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