

# **ESSEX COUNTY TIDAL MARSH INVENTORY**

Special Report No.207 in Applied Marine Science and Ocean Engineering

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ESSEX COUNTY  
TIDAL MARSH INVENTORY

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## Introduction

This publication is one of a series of county-by-county tidal marsh inventory reports compiled by the Department of Wetlands Ecology and Environmental Impact Assessment, Virginia Institute of Marine Science. Previously published reports may be obtained from the VIMS library, Gloucester Point, Virginia 23062.

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. This inventory program is designed to assist wetlands boards and other local, state, and federal agencies which have responsibilities in managing wetlands. Its results are also of interest to scientists and other concerned citizens.

A previously published study, Guidelines for Activities Affecting Virginia Wetlands, Silberhorn, Dawes, and Barnard, 1974, VIMS SRAMSOE No. 46 will be helpful in the utilization of this report. Excerpts from the above document are included in the following text, explaining marsh vegetation types and their evaluation.

The reader is also referred to Tidal Wetland Plants of Virginia, Silberhorn, 1976, VIMS Educational Series No. 19, an illustrated manual describing each of the wetland plants listed in the Act. Both of the above documents are available from the VIMS library.

Essex County is well endowed with tidal marshes, possessing a total of about 5214 acres. In addition, there are several hundred acres of wooded, tidal swamp which are not included in this inventory, even though most of the swamps are considered "wetlands" by definition under the Virginia Wetlands Act. All of the tidal marshes of the county are located either on the Rappahannock River or one of its tributaries and exhibit a variety of marsh types. These types vary from the brackish, low-diversity marshes dominated by cordgrasses at the

lower end of the county to the freshwater, diverse marshes at the upper end. The latter are often vegetated by brightly flowering plants, often none of which is clearly dominant. These freshwater marshes also frequently exhibit a striking seasonal succession, and thus the species composition as estimated by percent cover is strongly dependent on the time of year of observation. For example, many marshes dominated by arrow arum (Peltandra virginica) in May and June are often dominated by rice cutgrass (Leersia oryzoides) and beggar ticks (Bidens spp.) in September. Most of the marshes fall into either the Group One or Group Two classification (page 10) and are therefore highly valuable as detritus producers and for wildlife utilization. In addition, the Rappahannock River and its tributaries adjacent to Essex County are documented spawning and nursery areas for commercially important fishes such as shad, herring, and striped bass.

Shoreline development in Essex County is light, confined mainly to residences with shoreline structures such as bulkheads and private boat ramps. Since many of these structures are located away from wetlands, the amount of marsh acreage historically lost to development is small, and large tracts of marshes are virtually unspoiled. It is hoped that through effective management these pristine areas can be left essentially as they are now.

## Methods

Aerial photographs and topographic maps (USGS) were consulted in order to obtain wetland locations and boundaries. Marsh community zones and patterns were determined by ground truth methods, including observations on foot and by boat, and acreages were obtained by planimetry.

Marshes 0.25 acre or larger are designated by number. Many marshes smaller than 0.25 acre (usually narrow fringing marshes) are designated by the same symbol (shaded) as the larger marshes on the section maps, and some are tabulated. Small marshes (less than one acre) are exaggerated and are not always 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 0.1 acre, except in very small marshes. In those instances where an individual plant species was estimated to amount to less than 0.5 percent or 0.05 acre, the symbol (-) is used to indicate a trace amount. In unusual situations where an individual marsh was estimated to contain 50 percent or more of a species that is not listed as a marsh type, the closest applicable marsh type is used. For example, a marsh judged to contain 60 percent wild rice would be listed as Type XI (Freshwater Mixed).

This inventory report is organized into nine sections. Each section describes one creek drainage system or significant length of shoreline within Essex County. These sections are illustrated individually on 1:24,000 maps after each section description, and collectively on the Reference Map to Wetlands Sections on page 19.

## Marsh Types and Evaluation

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

"It is recognized that most wetlands areas, with the exception of the relatively monospecific cordgrass marshes of the Eastern Shore, are not 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 coastal problem. Marshes can be eroded, but some, particularly the more saline types, are eroded much more slowly than adjacent shores which are unprotected by marsh. This buffering quality is derived from the ability of the vegetation to absorb or dissipate wave energy by establishing a dense root system which stabilizes the substrate. Generally, freshwater species are less effective than saltwater plants in this regard.

"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 grow. 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.

"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."

Marsh Types and Their Environmental Contributions  
(Edited from Guidelines for Activities Affecting Virginia Wetlands)

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 waste 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-Pickerel 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.

Type XII    Brackish Water Mixed Community

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

## Evaluation of Wetland Types

(From Guidelines for Activities Affecting Virginia Wetlands)

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

### Group One:

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

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

### Group Two:

Big Cordgrass (Type V)  
Saltmeadow (Type II)  
Cattail (Type VI)

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

Group Three:

Yellow Pond Lily (Type XI)  
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 Virginia's wetlands in general, the Wetlands Act of 1972, and marsh types and their evaluation, the following publications are recommended:

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

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  
Gene M. Silberhorn, April 1976  
Educational Series No. 19  
Virginia Institute of Marine Science  
Gloucester Point, Virginia 23062

## Wetland Plants

### Common and Scientific Names as Found in the Tables

Arrow Arum	<u>Peltandra virginica</u> (L.) Kunth
Arrowhead**	<u>Sagittaria latifolia</u> Willd. <u>S. falcata</u> Pursh
Aster* **	<u>Aster tenuifolius</u> L. A. spp.
Bedstraw*	<u>Galium</u> spp.
Beggar Ticks	<u>Bidens laevis</u> (L.) BSP.
Big Cordgrass	<u>B. coronata</u> (L.) Britt.
Burreed*	<u>Spartina cynosuroides</u> (L.) Roth
Buttonbush	<u>Sparganium eurycarpum</u> Engelm.
Cardinal Flower*	<u>Cephalanthus occidentalis</u> L.
Cattail	<u>Lobelia cardinalis</u> L.
Narrow-leaved	<u>Typha angustifolia</u> L.
Common	<u>T. latifolia</u> L.
Climbing Hempweed*	<u>Mikania scandens</u> (L.) Willd.
Common Threesquare	<u>Scirpus americanus</u> Pers.
Dayflower*	<u>Aneilema keisak</u> Hassk.
Dodder*	<u>Cuscuta</u> spp.
Duckweed*	<u>Spirodela polyrhiza</u> (L.) Schleid.
Germander*	<u>Teucrium canadense</u> L.
Giant Bulrush	<u>Scirpus validus</u> Vahl
Iris*	<u>Iris</u> spp.
Ironweed*	<u>Vernonia noveboracensis</u> (L.) Michx.
Jewelweed*	<u>Impatiens capensis</u> Meerb.
Lance-leaved Milkweed*	<u>Asclepias lanceolata</u> Walt.
Lizard's Tail*	<u>Saururus cernuus</u> L.
Marsh Fern*	<u>Thelypteris palustris</u> Schott
Marsh Fleabane	<u>Pluchea purpurascens</u> (Sw.) DC.

Wetland Plants (continued)

Marsh Hibiscus  
Marsh Mallow\*  
Meadow Rue\*  
Olney Threesquare  
Orach\*  
Pickerelweed  
Red Maple\*  
Reedgrass  
  
Rice Cutgrass  
River Bulrush  
Royal Fern  
  
Rush\* \*\*  
  
Saltbush  
    Groundsel Tree  
    Marsh Elder  
Saltgrass  
Saltmarsh Bulrush  
Saltmarsh Cordgrass  
Saltmeadow Hay  
Sedge\* \*\*  
  
Sensitive Fern\*  
Southern Wild Rice  
  
Spikerush\*\*

*Hibiscus moscheutos* L.  
*Kosteletskya virginica* (L.) Presl  
*Thalictrum polygamum* Muhl.  
*Scirpus olneyi* Gray  
*Atriplex patula* L.  
*Pontederia cordata* L.  
*Acer rubrum* L.  
*Phragmites australis* (Cav.) Trin.  
    ex Steud.  
*Leersia oryzoides* (L.) Sw.  
*Scirpus fluviatilis* (Torr.) Gray  
*Osmunda regalis* L. var. *spectabilis*  
    (Willd.) Gray  
*Juncus effusus* L.  
*J. acuminatus* Michx.  
  
*Baccharis halimifolia* L.  
*Iva frutescens* L.  
*Distichlis spicata* (L.) Greene  
*Scirpus robustus* Pursh  
*Spartina alterniflora* Loisel.  
*S. patens* (Ait.) Muhl.  
*Carex stricta* Lam.  
*C. hyalinolepis* Steud.  
*C. vulpinoidea* Michx.  
*Onoclea sensibilis* L.  
*Zizaniopsis miliacea* (Michx.)  
    Doll & Aschers.  
*Eleocharis quadrangulata* (Michx.)  
    R. & S.  
*E. parvula* (R. & S.) Link  
*E. fallax* Weath.  
*E. palustris* (L.) R. & S.

Wetland Plants (continued)

Swamp Dogwood\*  
Swamp Milkweed\*  
Swamp Rose\*  
Sweetflag  
Switchgrass  
Tag Alder\*  
Tearthumb  
  
Three-way Sedge\*  
Turk's Cap Lily\*  
Umbrella Sedge\*  
Walter's Millet\*  
Water Dock  
Water Hemlock\*  
Water Hemp  
Water Parsnip\*  
Water Smartweed  
Water Willow\*  
Wax Myrtle  
Wild Rice  
Wood Reedgrass\*  
Woolgrass  
Yellow Pond Lily

Cornus amomum Mill.  
Asclepias incarnata L.  
Rosa palustris Marsh.  
Acorus calamus L.  
Panicum virgatum L.  
Alnus serrulata (Ait.) Willd.  
Polygonum arifolium L.  
P. sagittatum L.  
Dulichium arundinaceum (L.) Britt.  
Lilium superbum L.  
Cyperus strigosus L.  
Echinochloa walteri (Pursh) Nash  
Rumex verticillatus L.  
Cicuta maculata L  
Amaranthus cannabinus (L.) J.D. Sauer  
Sium suave Walt.  
Polygonum punctatum Ell.  
Justicia americana (L.) Vahl  
Myrica cerifera L.  
Zizania aquatica L.  
Cinna arundinacea L.  
Scirpus cyperinus (L.) Kunth  
Nuphar luteum Sibth. & Sm.

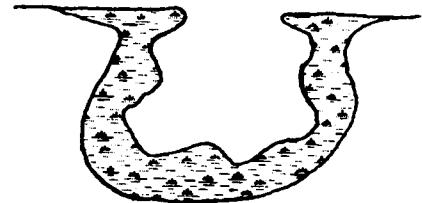
\*Species not included in the Virginia Wetlands Act of 1972.

\*\*Unless otherwise stated in the observations, the first species listed is intended; e.g., "Sedge" in the tables refers to Carex stricta, unless the corresponding observations indicate a different sedge species.

### Glossary of Descriptive Terms

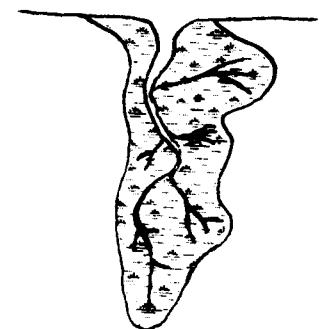
#### Cove Marsh

A marsh contained within a concavity or recessed area on a shoreline. The marsh vegetation is usually found surrounding a central, open-water pond, and tidal flushing is permitted through an inlet.



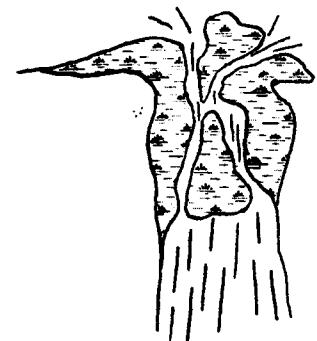
#### Creek or Embayed Marsh

A marsh occupying a drowned creek valley. In many large creek marshes the salinity decreases headward; this type of marsh may be divided for inventory purposes into sections if significant changes in the plant community occur along its length.



#### Delta Marsh

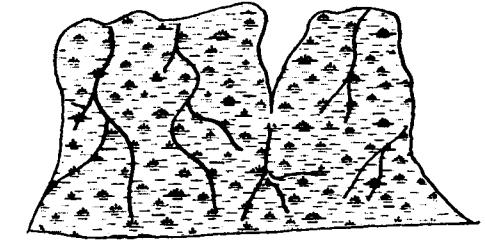
A marsh growing on sediment deposited at the mouth of a tidal creek. Tidal exchange through the creek mouth is usually restricted to narrow channels by the marsh.



## Glossary of Descriptive Terms

### Extensive Marsh

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



### Fringe Marsh

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



### High Marsh

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

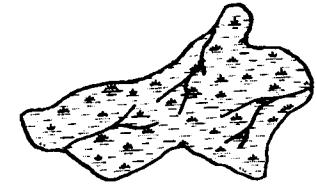
### Low Marsh

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

### Glossary of Descriptive Terms

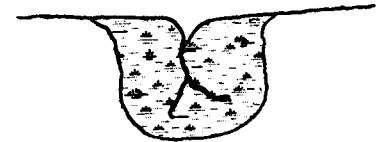
#### Marsh Island

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



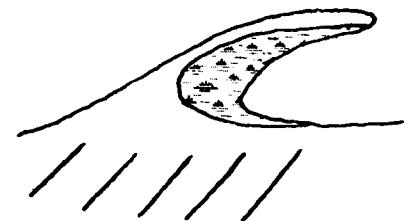
#### Pocket Marsh

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



#### Point or Spit Marsh

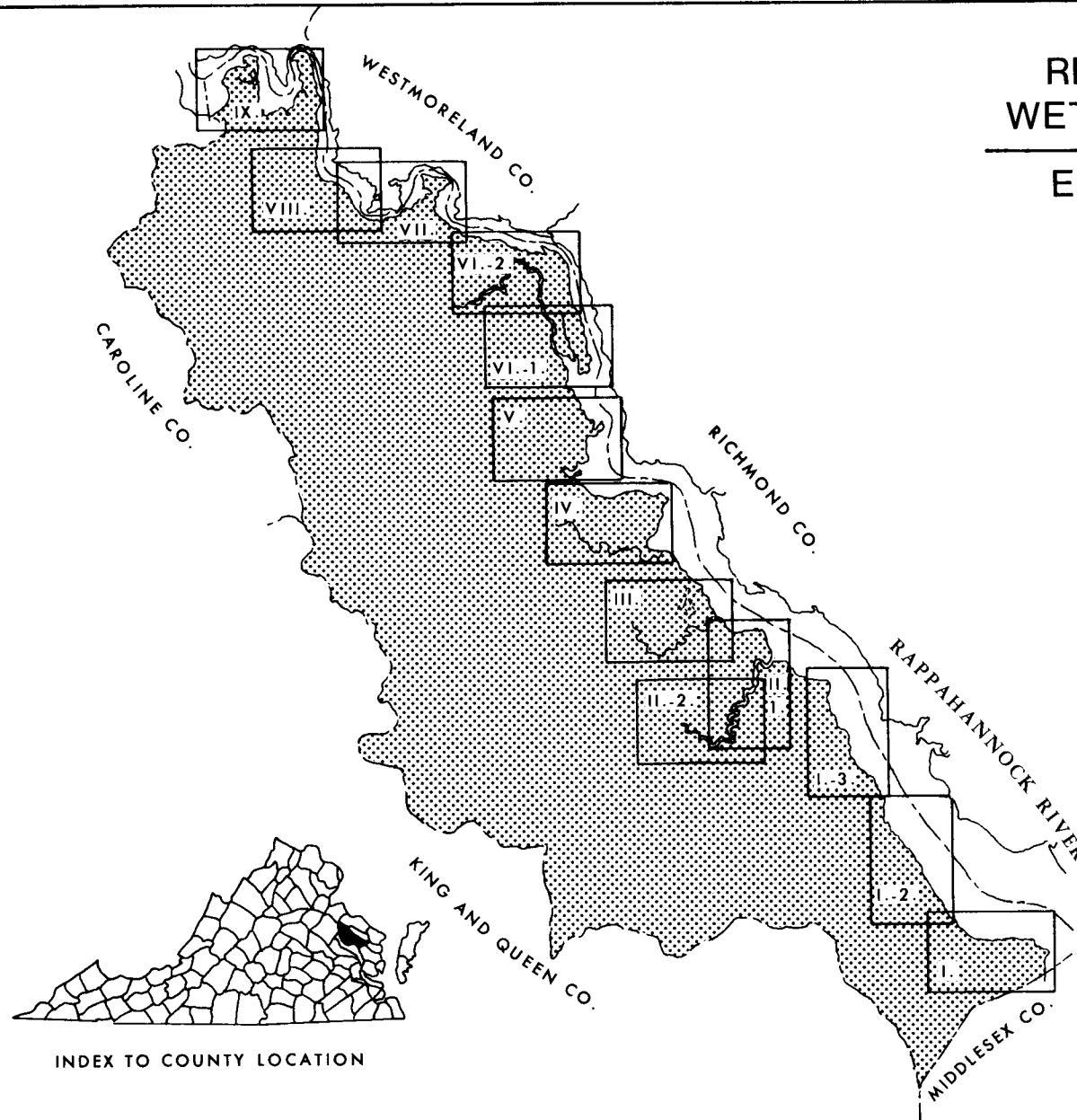
A marsh which extends from the uplands in the form of a point or spit. Its development is usually influenced by tidal currents that form a sand berm behind which the marsh forms.



REFERENCE MAP  
WETLAND SECTIONS

ESSEX COUNTY  
VIRGINIA

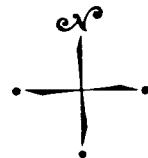
SCALE IN MILES  
1 0 1 2 3 4



### Section I. Rappahannock River--Middlesex County Line to Piscataway Creek

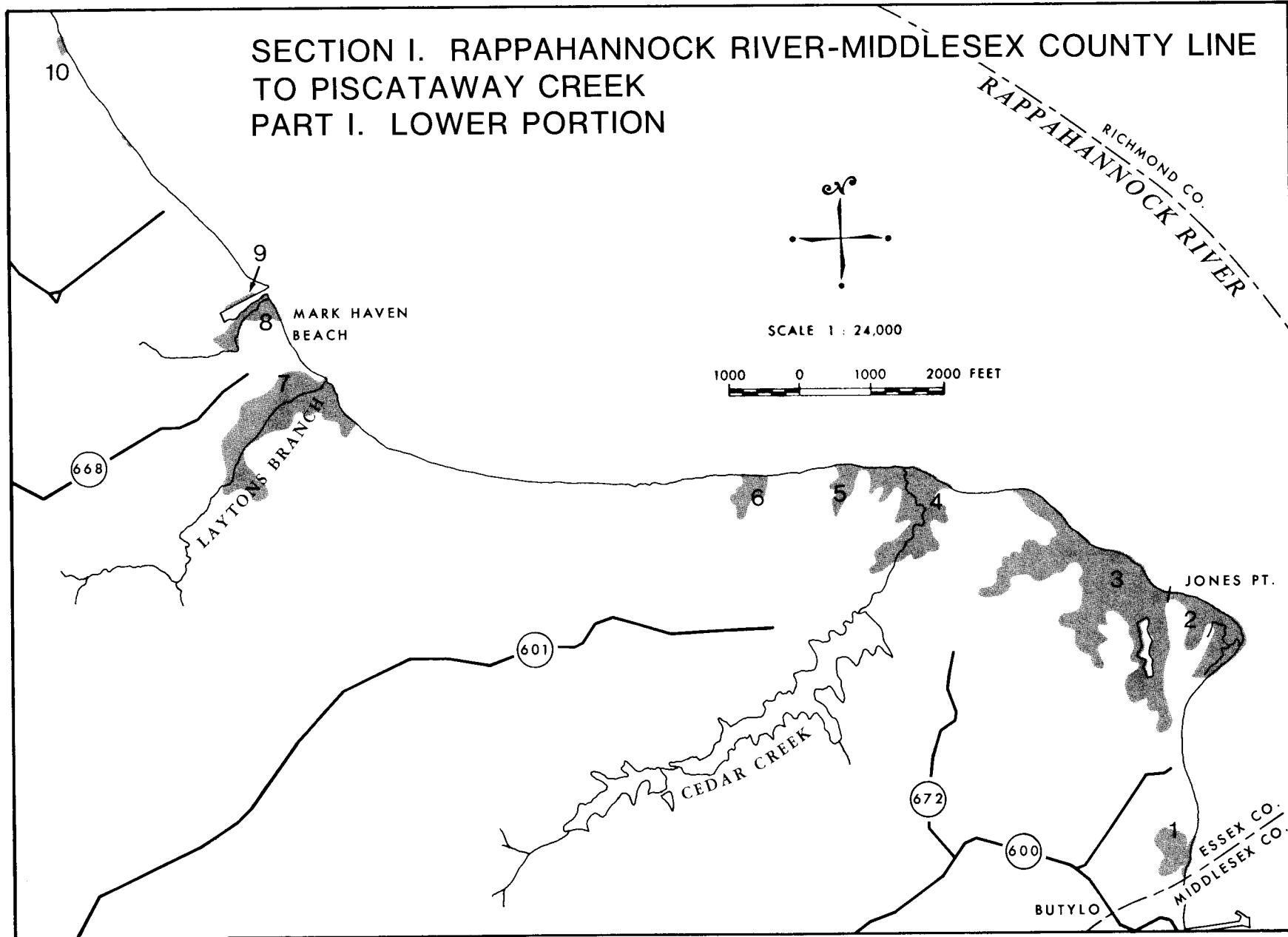
The marshes of this section represent the most downstream of the river marshes of Essex County and thus the most brackish in character. Salt-tolerant plants such as saltmarsh cordgrass, marsh elder, and the saltmeadow grasses are more abundant here than elsewhere in the county. Most of these marshes are small creek and pocket marshes, and therefore any freshwater species such as arrow arum and wild rice (Zizania aquatica), which are characteristic of marshes farther upriver, are found only at headwaters of creeks and areas near freshwater seepage. Practically all of these marshes fall into either Groups One or Two and thus rank high in value as detritus producers and erosion deterrents. As waterfront development in this area is moderately high, care should be taken to ensure that these valuable marshes are not destroyed or unnecessarily altered by activities such as dredging, filling, and bulkheading.

SECTION I. RAPPAHANNOCK RIVER-MIDDLESEX COUNTY LINE  
TO PISCATAWAY CREEK  
PART I. LOWER PORTION



SCALE 1 : 24,000

1000 0 1000 2000 FEET



Section I. Rappahannock River - Middlesex County Line to Piscataway Creek  
Part 1. Lower Portion

#	Marsh Location	Total Acres		Arrow Arum-Pickerelweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bullrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olney Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jeweled Jeweled	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
1	McKans Bay	5	%	25	55	5								5	10												Marsh partially enclosed by sand berm, saltmarsh cordgrass fringe channelward.	VI	
			acres	1.2	2.8	0.2								0.2	0.5														
2	Jones Point	16	%	30										10	30	10	20										Point marsh, saltmarsh cordgrass along edge.	XII	
			acres	4.8										1.6	4.8	1.6	3.2												
3	Jones Point	54	%	10	25	-								10	5		25	25									Extensive marsh.	XII	
			acres	5.4	13.5	-								5.4	2.7		13.5	13.5											
4	Cedar Creek	20	%	90	2									5	1		2											V	
			acres	18.0	0.4									1.0	0.2		0.4												
5	Rappahannock River	3	%	30	40									10	20													XII	
			acres	0.9	1.2									0.3	0.6														
6	Rappahannock River	2	%	4	95	1								-													Heavily dominated by cattail.	VI	
			acres	0.1	1.9	-								-															
7	Layton's Branch	40	%	-	30	60	-							5		5												VI	
			acres	-	12.0	24.0	-							2.0		2.0													
8	Rappahannock River	6	%	90										1	8	1											Grades into swamp, spoil present.	V	
			acres	5.4										0.1	0.5	0.1													

a Water Smartweed  
b Royal Fern  
c Wax Myrtle  
d Marsh Mallow  
e Orach  
f Wood Reedgrass

g Germander  
h Saltmarsh Bulrush  
i Arrowhead  
j Water Hemlock  
k Rush  
l Spikerush

m Walter's Millet  
n Dodder  
o River Bulrush  
p Lizard's Tail  
q Beggar Ticks  
r Dayflower

s Marsh Fern  
t Ironweed  
u Iris  
v Swamp Dogwood  
w Cardinal Flower  
x Teartumb

y Burreed  
z Turk's Cap Lily  
aa Buttonbush  
bb Tag Alder  
cc Three-way Sedge  
dd Climbing Hempweed

ee Switchgrass  
ff Sensitive Fern  
gg Southern Wild Rice  
hh Lance-leaved Milkweed  
ii Bedstraw  
jj Water Willow

kk Aster  
ll Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

Section I. Rappahannock River - Middlesex County Line to Piscataway Creek  
Part 1. Lower Portion

#	Marsh Location	Total Acres	%	Arrow Arum-Pickeralweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	- Saltmarsh Cordgrass	Olney Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
9	Rappahannock River	0.18	% acres	20 -									80	0.1	-												Fringe marsh dominated by saltbush.	IV	
10	Rappahannock River	1	% acres	90 0.9	5 -								5	-													V		
	Total Section I Part 1	147	% acres	- 48.7	33 43.8	30 0.2							7 10.7	6 9.3	1 1.6	13 19.2	9 13.5												

a Water Smartweed  
b Royal Fern  
c Wax Myrtle  
d Marsh Mallow  
e Orach  
f Wood Reedgrass

g Germanender  
h Saltmarsh Bulrush  
i Arrowhead  
j Water Hemlock  
k Rush  
l Spikerush

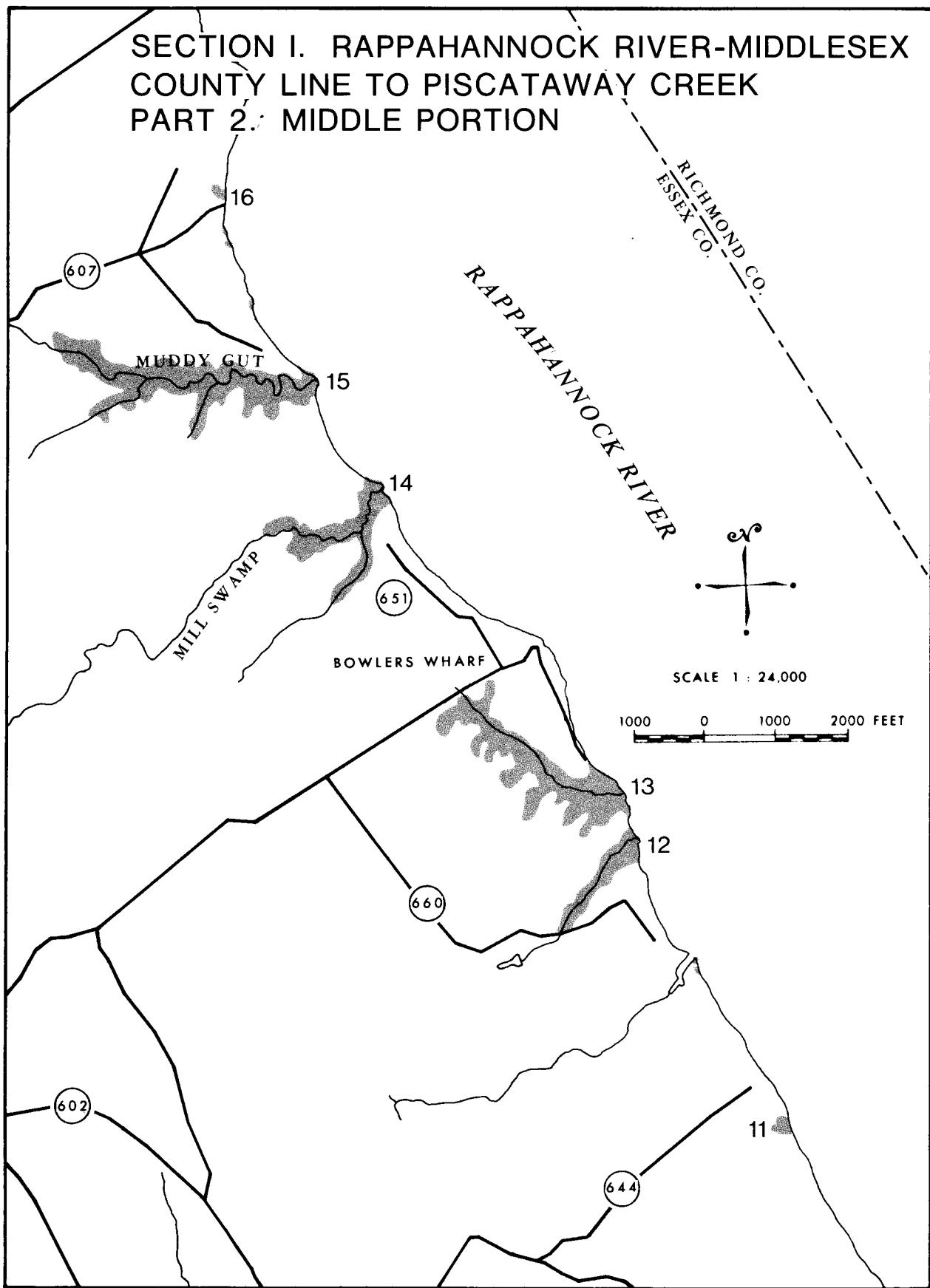
m Walter's Millet  
n Dodder  
o River Bulrush  
p Lizard's Tail  
q Beggar Ticks  
r Dayflower

s Marsh Fern  
t Ironweed  
u Iris  
v Swamp Dogwood  
w Cardinal Flower  
x Teartumb

y Burreed  
z Turk's Cap Lily  
aa Buttonbush  
bb Tag Alder  
cc Three-way Sedge  
dd Climbing Hempweed

ee Switchgrass  
ff Sensitive Fern  
gg Southern Wild Rice  
hh Lance-leaved Milkweed  
ii Bedstraw  
jj Water Willow

kk Aster  
ll Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge



Section I. Rappahannock River - Middlesex County Line to Piscataway Creek  
Part 2. Middle Portion

#	Marsh Location	Total Acres		Arrow Arum-Pickeralweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Oliney Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
11	Rappahannock River	2	%	35	35																						Extensive stands of reedgrass.	XII	
			acres	0.7	0.7																								
12	Rappahannock River	10	%	-	5	95			-				-	-													d,-	VI	
			acres	-	0.5	9.5			-				-	-													d,-		
13	Rappahannock River	31	%	20	60	8			-			-	10	-	-	-	-										Trace amounts of q, kk, oo.	VI	
			acres	6.2	18.6	2.5			-			-	3.1	-	-	-	-												
14	Mill Swamp	17	%	-	80	10	-	-					5					-	2	-						Trace amounts of d, q, kk, oo, pp.	V		
			acres	-	13.6	1.7	-	-					0.8					-	0.3	-									
15	Muddy Gut	41	%	-	70	5	3					-	15	-	2	3			-							Trace amounts of f, l ( <i>Eleocharis parvula</i> ).	V		
			acres	-	28.7	2.0	1.2					-	6.2	-	0.8	1.2			-										
16	Rappahannock River	1	%	90								10															V		
			acres	0.9								0.1																	
Total Section I Part 2		102	%	-	50	32	4	-	-			-	10	-	1	1	-	-	-		1	-			Trace amounts of e, f, h, l, q, kk, oo, pp.				
			acres	-	50.6	32.5	3.7	-	-			-	10.2	-	0.8	1.2	-	0.3	-		0.6	-	a,-	d,-					

a Water Smartweed  
b Royal Fern  
c Wax Myrtle  
d Marsh Mallow  
e Orach  
f Wood Reedgrass

g Germander  
h Saltmarsh Bulrush  
i Arrowhead  
j Water Hemlock  
k Rush  
l Spikerush

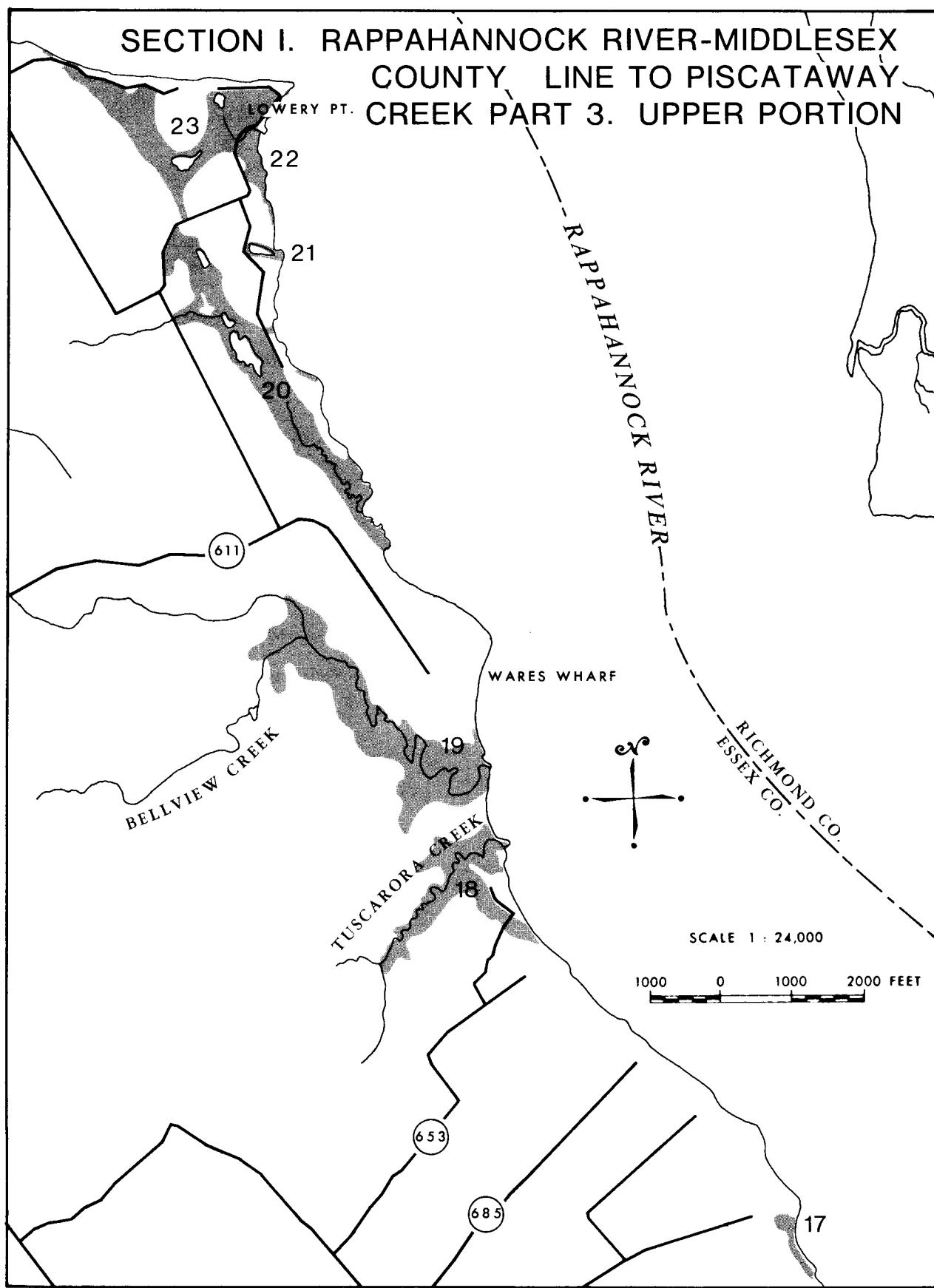
m Walter's Millet  
n Dodder  
o River Bulrush  
p Lizard's Tail  
q Beggar Ticks  
r Dayflower

s Marsh Fern  
t Ironweed  
u Iris  
v Swamp Dogwood  
w Cardinal Flower  
x Tearthumb

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cc Three-way Sedge  
dd Climbing Hempweed

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gg Southern Wild Rice  
hh Lance-leaved Milkweed  
ii Bedstraw  
jj Water Willow

kk Aster  
ll Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge



Section I. Rappahannock River - Middlesex County Line to Piscataway Creek  
Part 3. Upper Portion

#	Marsh Location	Total Acres		Arrow Arum	Pickelweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olney Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
17	Rappahannock River	3	%			90		5																						V
			acres			2.7		0.2																						V
18	Tuscarora Creek	28	%			85	1													2		12								V
			acres			23.8	0.3													0.6		3.4								V
19	Bellview Creek	63	%	-	90		-												-	8	-	2						n,-	Horned pondweed growing in creek.	V
			acres	-	56.7		-												-	5.0	-	1.3						n,-		V
20	Rappahannock River	45	%	-	55	25	8											-	-	2	-	10		-				g,- i,- j,-	Long creek marsh with several ponds. Trace amount of sedge ( <i>Carex vulpinoidea</i> ).	V
			acres	-	24.8	11.2	3.6											-	-	0.9	-	4.5		-				g,- i,- j,-		V
21	Lowery Point	1	%		80	-	-												-		20	-						h,-	Fringe surrounding tidal pond.	V
			acres		0.8	-	-											-		0.2	-						h,-		V	
22	Lowery Point	5	%		55														20	20	5						c,-	Separated from No. 23 by causeway.	V	
			acres		2.8													-	1.0	1.0	0.2						c,-		V	
23	Lowery Point	35	%	-	30	10	5											-	-	35	20	-	-				-	c,- g,- h,-	Trace amounts of k, l ( <i>Eleocharis parvula</i> ), o, p. Recent fill activity, restricted tidal flow.	XII
			acres	-	10.5	3.5	1.8											-	-	12.2	7.0	-	-				-	c,- g,- h,-		
	Total Section I Part 3	180	%	-	68	8	3											-	-	4	7	9	-	-	-		-	c,- g,- h,-	Trace amounts of i, j, k, l, n, o, p.	
			acres	-	122.1	15.0	5.6											-	-	7.5	13.2	16.8	-	-	-		-	c,- g,- h,-		

a Water Smartweed  
b Royal Fern  
c Wax Myrtle  
d Marsh Mallow  
e Orchid  
f Wood Reedgrass

g Germander  
h Saltmarsh Bulrush  
i Arrowhead  
j Water Hemlock  
k Rush  
l Spikerush

m Walter's Millet  
n Dodder  
o River Bulrush  
p Lizard's Tail  
q Beggar Ticks  
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s Marsh Fern  
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w Cardinal Flower  
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aa Buttonbush  
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ee Switchgrass  
ff Sensitive Fern  
gg Southern Wild Rice  
hh Lance-leaved Milkweed  
ii Bedstraw  
dd Climbing Hempweed  
jj Water Willow

kk Aster  
ll Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

Section I. Rappahannock River - Middlesex County Line to Piscataway Creek  
Part 3. Upper Portion

- a Water Smartweed
- b Royal Fern
- c Wax Myrtle
- d Marsh Mallow
- e Orach
- f Wood Reedgrass

g Germander  
h Saltmarsh Bulrush  
i Arrowhead  
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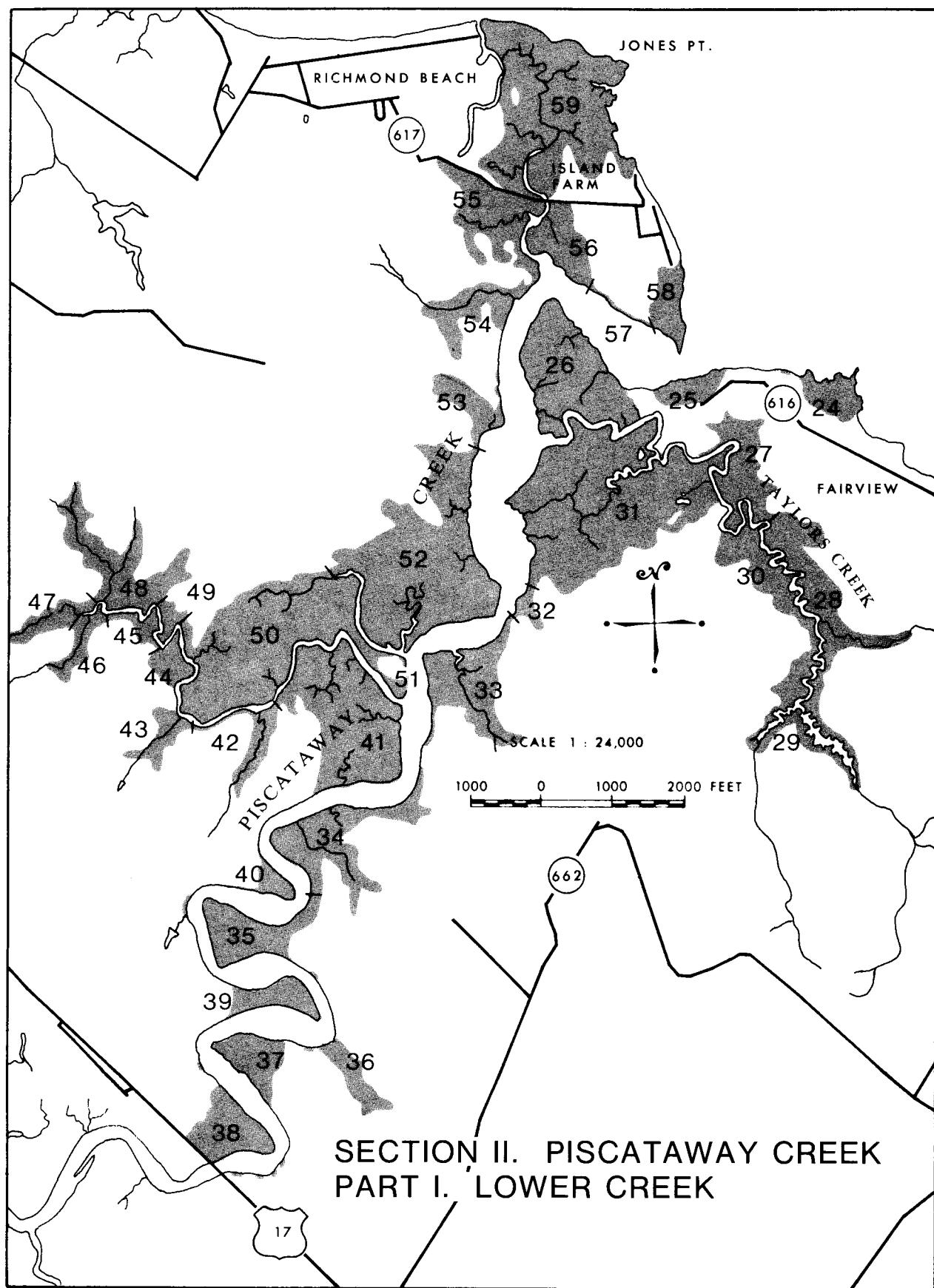
## Section II. Piscataway Creek

A variety of marsh types is found in Piscataway Creek, one of the larger creeks of Essex County. The waterway is divided into two parts separated approximately by the Route 17 highway crossing. This crossing roughly forms the boundary between freshwater marshes upstream and brackish marshes downstream, though the actual break occurs shortly downstream, near marsh No. 37.

The downstream marshes (Part 1) of this mostly undisturbed creek are heavily dominated by big cordgrass (Spartina cynosuroides), with freshwater species such as wild rice and pickerelweed (Pontederia cordata) becoming more abundant at the heads of tributaries. The upstream marshes (Part 2), however, are characterized by arrow arum, pickerelweed, and cattail (Typha spp.), with yellow pond lily (Nuphar luteum) at the uppermost reaches. These uppermost reaches (Nos. 73-79) presented problems in that many of the marsh islands depicted on topographic maps are actually interconnected by yellow pond lily. Since the pond lily is not depicted on maps and photographs, its location is uncertain and is not outlined on the maps in this section.

The upper reaches of Piscataway Creek are also unique in their abundance of submerged aquatic vegetation, abundant enough to hinder navigation in many places. This vegetation consists mainly of tapegrass (Vallisneria americana), hornwort (Ceratophyllum demersum), waterweed (Elodea canadensis) and pondweed (Potamogeton nodosus). All of these species are very valuable waterfowl food sources, as are the adjacent Type VII and Type XI marshes. Also, fishes such as gars were noted to be active in this area, which also serves as a spawning and nursery ground for such game and commercial fishes as shad, herring, striped bass, and white perch.

Because of the extent of the marshes of Piscataway Creek, their value to wildlife, and their unspoiled state, they are of prime ecological and commercial importance and should not be unnecessarily disturbed.



Section II. Piscataway Creek  
Part 1. Lower Creek

#	Marsh Location	Total Acres		Arrow Arum-Pickerelweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olive Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jeweled	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
24	Rappahannock River	12	%		60		1																						V
			acres		7.2	0.1										3.6	1.1												V
25	Piscataway Creek	8	%	100		-																							V
			acres		8.0	-																							V
26	Piscataway Creek	41	%	-	84	5	1												5	5									V
			acres	-	34.4	2.0	0.4												2.0	2.0								V	
27	Taylors Creek	20	%	-	80	-	10									2	-		5									V	
			acres	-	16.0	-	2.0									0.4	-		1.0									V	
28	Taylors Creek	32	%	-	55	10	25	-								5			5									V	
			acres	-	17.6	3.2	8.0	-								1.6			1.6									V	
29	Taylors Creek	5	%	2	80	10	-	5								3			-	-								V	
			acres	0.1	4.0	0.5	-	0.2								0.2			-	-								V	
30	Taylors Creek	23	%	5	75	5	10	-								5			-									V	
			acres	1.2	17.2	1.2	2.3	-								1.2			-									V	
31	Taylors Creek	46	%	-	90	5	5									-												V	
			acres	-	41.4	2.3	2.3									-												V	

a Water Smartweed  
b Royal Fern  
c Wax Myrtle  
d Marsh Mallow  
e Orach  
f Wood Reedgrass

g Germander  
h Saltmarsh Bulrush  
i Arrowhead  
j Water Hemlock  
k Rush  
l Spikerush

m Walter's Millet  
n Dodder  
o River Bulrush  
p Lizard's Tail  
q Beggar Ticks  
r Dayflower

s Marsh Fern  
t Ironweed  
u Iris  
v Swamp Dogwood  
w Cardinal Flower  
x Tearthumb

y Burreed  
z Turk's Cap Lily  
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oo Marsh Fleabane  
pp Umbrella Sedge

Section II. Piscataway Creek  
Part 1. Lower Creek

#	Marsh Location	Total Acres	%	Acres	Arrow Arum	Pickeralweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olney Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type	
32	Piscataway Creek	2	%	-	90	8	-																							g,-	V	
			acres	-	1.8	0.2	-	-	-																				g,-			
33	Piscataway Creek	22	%	-	92	5	3	-											-												V	
			acres	-	20.2	1.1	0.7	-											-													
34	Piscataway Creek	25	%	5	68	15	5	2										5	-										a,-	V		
			acres	1.2	17.0	3.8	1.2	0.5										1.2	-										a,-			
35	Piscataway Creek	19	%	20	52	15	3	-										10												Water dock along creek edge.	V	
			acres	3.8	9.9	2.8	0.6	-										1.9												Water dock along creek edge.		
36	Piscataway Creek	9	%	30	25	30	10											-													XII	
			acres	2.7	2.2	2.7	0.9											-														
37	Piscataway Creek	13	%	60	-	15	3	15										6												Approximate boundary between freshwater marshes upstream and brackish marshes downstream	VII	
			acres	7.8	-	2.0	0.4	2.0										0.8														
38	Piscataway Creek	18	%	65	-	20	5	10																						b,-	VII	
			acres	11.7	-	3.6	0.9	1.8																						b,-		
39	Piscataway Creek	10	%	30	30	20	10	-										10														XII
			acres	3.0	3.0	2.0	1.0	-										1.0														

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mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

Section II. Piscataway Creek

Part 1. Lower Creek

#	Marsh Location	Total Acres		Arrow Arum-Pickerelweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olnay Threesquare	Salicgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
40	Piscataway Creek	4	%	60	30	10		-																					VII
			acres	2.4	1.2	0.4		-																					
41	Piscataway Creek	53	%	1	95	-	2						2															e,-g,-	V
			acres	0.5	50.4	-	1.1						1.1															e,-g,-	
42	Piscataway Creek	7	%	1	95	-	2						2															g,-h,-	V
			acres	0.1	6.6	-	0.1						0.1															g,-h,-	
43	Piscataway Creek	4	%	3	50	45							2															g,-	V
			acres	0.1	2.0	1.8							0.1															g,-	
44	Piscataway Creek	8	%	10	80	10	-						-																V
			acres	0.8	6.4	0.8	-						-																
45	Piscataway Creek	5	%	5	80	-	10	-					2															g,-	V
			acres	0.2	4.0	-	0.5	-					0.1															g,-	
46	Piscataway Creek	6	%	20	35	10	20	-					5														s,-	Diverse creek marsh.	XII
			acres	1.2	2.1	0.6	1.2	-					0.3														s,-		
47	Piscataway Creek	8	%	30	-	5	30	-	25		-																	Wild rice abundant.	XI
			acres	2.4	-	0.4	2.4	-	2.0		-																		

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nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

**Section II. Piscataway Creek**  
**Part 1. Lower Creek**

#	Marsh Location	Total Acres	Arrow Arum	Pickeralweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bullrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Oiley Threesquare	Saltgrass- Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
48	Piscataway Creek	22	%	10	75	10	-	-						1														Very diverse; submerged aquatic plants in creek.	V
			acres	2.2	16.5	2.2	-	-						0.2															
49	Piscataway Creek	4	%	3	95		-						1							1									V
			acres	0.1	3.8		-						-							-									
50	Piscataway Creek	70	%	10	45	25	1	1				-	1			15			-									XII	V
			acres	7.0	31.5	17.5	0.7	0.7				-	0.7			10.5			-										
51	Piscataway Creek	1	%	1	98								1																V
			acres	-	1.0								-																
52	Piscataway Creek	78	%	-	98	2	-						-			-													V
			acres	-	76.4	1.6	-						-			-													
53	Piscataway Creek	9	%	-	90	8	-						2			-													V
			acres	-	8.1	0.7	-						0.2			-													
54	Piscataway Creek	13	%		100								-	-		-	-	-									Creek marsh heavily dominated by big cordgrass.	V	
			acres		13.0								-	-		-	-	-											
55	Piscataway Creek	26	%	-	88	-	-	-					-	5		5	2											Separated from No. 59 by causeway.	V
			acres	-	22.9	-	-	-					-	1.3		1.3	0.5												

- a Water Smartweed
- b Royal Fern
- c Wax Myrtle
- d Marsh Mallow
- e Orach
- f Wood Reedgrass

- g *Germander*
- h *Saltmarsh Bulrush*
- i *Arrowhead*
- j *Water Hemlock*
- k *Rush*
- l *Spikerush*

- m Walter's Millet
- n Dodder
- o River Bulrush
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ff Sensitive Fern  
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hh Lance-leaved Milkweed  
ii Bedstraw  
jj Water Willow

*Aster*  
*Woolgrass*  
*Duckweed*  
*Water Parsnip*  
*Marsh Fleabane*  
*Umbrella Sedge*

**Section II. Piscataway Creek  
Part 1. Lower Creek**

- a Water Smartweed
- b Royal Fern
- c Wax Myrtle
- d Marsh Mallow
- e Orach
- f Wood Reedgrass

- g Germannder
- h Saltmarsh Bulrush
- i Arrowhead
- j Water Hemlock
- k Rush
- l Spikerush

- m Walter's Millet
- n Dodder
- o River Bulrush
- p Lizard's Tail
- q Beggar Ticks
- r Dayflower

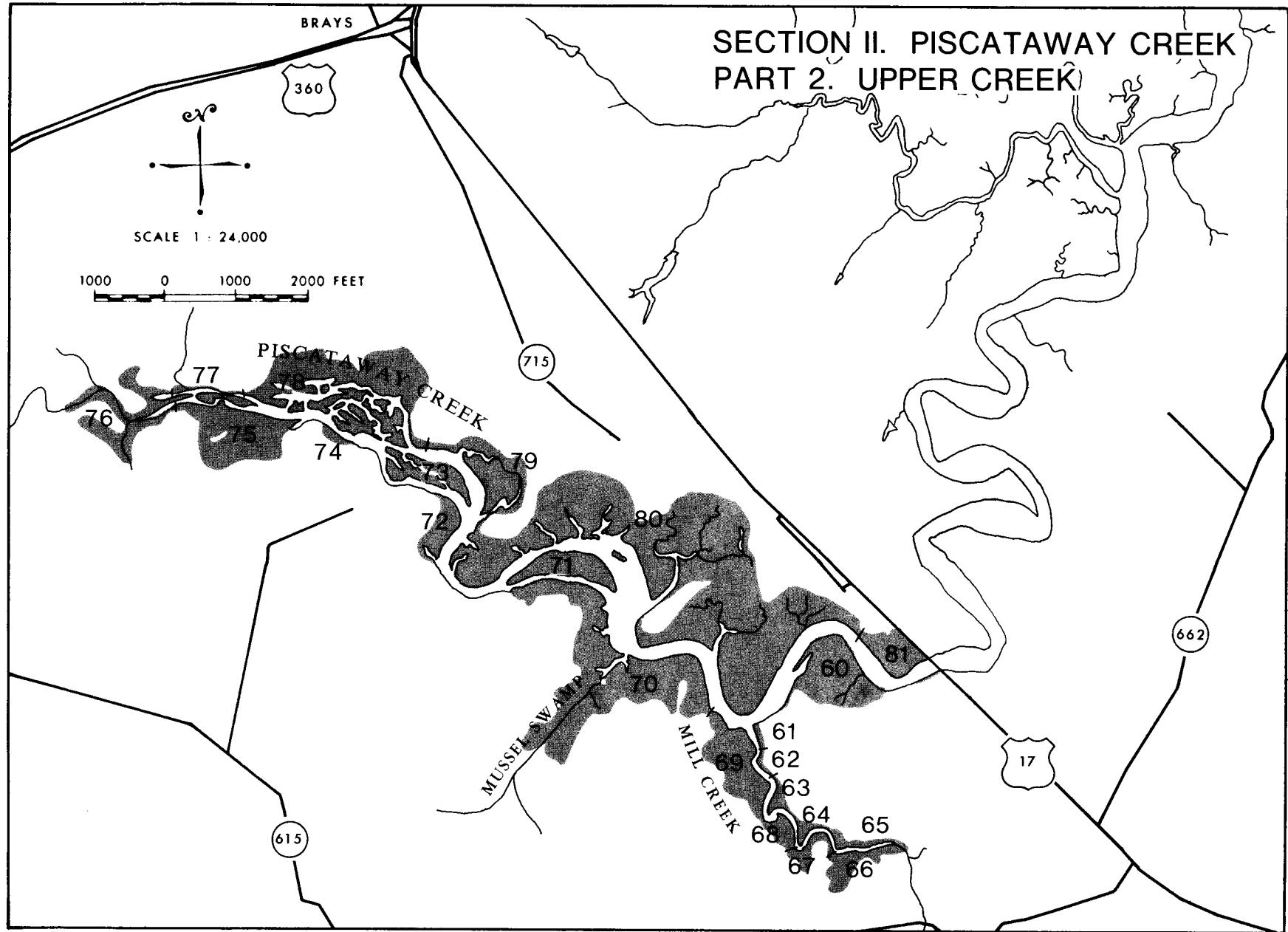
- s Marsh Fern
- t Ironweed
- u Iris
- v Swamp Dogwood
- w Cardinal Flower
- x Tearthumb

y Burreed  
z Turk's Cap Lily  
aa Buttonbush  
bb Tag Alder  
cc Three-way Sedge  
dd Climbing Hempweed

ee Switchgrass  
ff Sensitive Fern  
gg Southern Wild Rice  
hh Lance-leaved Milkweed  
ii Bedstraw  
jj Water Willow

KK Aster  
11 Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

SECTION II. PISCATAWAY CREEK  
PART 2. UPPER CREEK



Section II. Piscataway Creek  
Part 2. Upper Creek

#	Marsh Location	Total Acres	Part 2. Upper Creek																		Marsh Type				
			%	Acres	Arrow Arum-Pickerelweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bullrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Oliney Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue
60	Piscataway Creek	19	%	55	1	40	1	2	1	-	-	-	-	-	-	-	-	-	-	b,-	Scattered maples throughout marsh.	VII			
			acres	10.4	0.2	7.6	0.2	0.4	0.2											u,-					
61	Mill Creek	1	%	45	-	45	-	10	-	-	-	-	-	-	-	-	-	-	-	u,-		XI			
			acres	0.4	-	0.4	-	0.1	-	-										u,-					
62	Mill Creek	1	%	97	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-			VII		
			acres	1.0	-	-	-	-	-	-															
63	Mill Creek	2	%	60	2	15	4	10	8	-	-	-	-	-	-	-	-	-	-	m,-			VII		
			acres	1.2	-	0.3	0.1	0.2	0.2											m,-					
64	Mill Creek	2	%	93	-	-	-	1	5	-	-	-	-	-	-	1	-	-	-	-	m,-			VII	
			acres	1.9	-	-	-	-	0.1	-	-	-	-	-	-	-	-	-	-	a,-	s,-	v,-			
65	Mill Creek	3	%	95	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	f,-			VII		
			acres	2.8	-	-	-	0.2	-	-	-	-	-	-	-	-	-	-	-	f,-	1,-				
66	Mill Creek	7	%	50	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	m,-	a, <sup>5</sup> <sub>40</sub>	Very diverse; traces of f, r, s, t.	VII		
			acres	3.5	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	a, <sub>0.4</sub> <sup>2.8</sup>	m,-				
67	Mill Creek	4	%	95	-	2	-	2	-	-	-	-	-	-	-	-	-	-	-	a,-	Submerged aquatics in creek.	VII			
			acres	3.8	-	0.1	-	0.1	-	-	-	-	-	-	-	-	-	-	a,-	q,-					

- a Water Smartweed
- b Royal Fern
- c Wax Myrtle
- d Marsh Mallow
- e Orach
- f Wood Reedgrass

- g** Germannder
- h** Saltmarsh Bulrush
- i** Arrowhead
- j** Water Hemlock
- k** Rush
- l** Spikerush

- m Walter's Millet
- n Dodder
- o River Bulrush
- p Lizard's Tail
- q Beggar Ticks
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u Iris  
v Swamp Dogwood  
w Cardinal Flower  
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gg Southern Wild Rice  
hh Lance-leaved Milkweed  
ii Bedstraw  
jj Water Willow

kk Aster  
11 Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

Section II. Piscataway Creek  
Part 2. Upper Creek

#	Marsh Location	Total Acres		Arrow Arum-Pitcherweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olney Threesquare	Saligrass-Salmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
68	Mill Creek	4	%	40		45	-		10									0.1										Trace of v, diverse.	XI
			acres	1.6		1.8	-	-	0.4																				
69	Mill Creek	15	%	45	-	45	-	-	3				-						-										XI
			acres	6.8	-	6.8	-	-	0.4				-																
70	Mussel Swamp	49	%	45		45	-	8	2	-									3										XI
			acres	22.0		22.0	-	3.9	1.0	-									0.1										
71	Piscataway Creek	12	%	48				4	48																			Marsh island.	XI
			acres	5.8				0.5	5.8																				
72	Piscataway Creek	6	%	20		40	-	40	-																			Low marsh.	XI
			acres	1.2		2.4	-	2.4	-																				
73	Piscataway Creek	10	%	90				-	5	5																		Marsh islands connected by pond lily stands.	VII
			acres	9.0				-	0.5	0.5																			
74	Piscataway Creek	3	%	60				-	40																				VII
			acres	1.8				-	1.2																				
75	Piscataway Creek	20	%	80		15			5																				VII
			acres	16.0		3.0			1.0																				

a Water Smartweed  
b Royal Fern  
c Wax Myrtle  
d Marsh Mallow  
e Orach  
f Wood Reedgrass

g Germander  
h Saltmarsh Bulrush  
i Arrowhead  
j Water Hemlock  
k Rush  
l Spikerush

m Walter's Millet  
n Dodder  
o River Bulrush  
p Lizard's Tail  
q Beggar Ticks  
r Dayflower

s Marsh Fern  
t Ironweed  
u Iris  
v Swamp Dogwood  
w Cardinal Flower  
x Tearthumb

y Burreed  
z Turk's Cap Lily  
aa Buttonbush  
bb Tag Alder  
cc Three-way Sedge  
dd Climbing Hempweed

ee Switchgrass  
ff Sensitive Fern  
gg Southern Wild Rice  
hh Lance-leaved Milkweed  
ii Bedstraw  
jj Water Willow  
kk Aster  
ll Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

**Section II. Piscataway Creek  
Part 2. Upper Creek**

				Part II. Upper Creek																										
#	Marsh Location	Total Acres		Arrow Arum	Pickeralweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bullrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rosee	Water Dock	Saltbush	Saltmarsh Cordgrass	Oliney Threesquare	Saltgrass- Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
76	Piscataway Creek	16	%	45		1	1		20	30		-							1	-						a,- j,- r,-	Diverse; burreed and submerged aquatics growing in water. Traces of s, x, y, z, aa, bb, cc.	XI		
			acres	7.2		0.2	0.2		3.2	4.8		-							0.2	-						a,- j,- r,-				
77	Piscataway Creek	2	%	30		5	-	-	30																	a,- j,- w,-	Marsh island.	XI		
			acres	0.6		0.1	-	-	0.6																	a,- j,- w,-				
78	Piscataway Creek	40	%	70		15	-	-	15	-																Series of marsh islands and pockets interconnected by yellow pond lily.	VII			
			acres	28.0		6.0	-	-	6.0	-																				
79	Piscataway Creek	12	%	95		-			5																	u,-	VII			
			acres	11.4		-			0.6																	u,-				
80	Piscataway Creek	128	%	35		55	1	1	8			-								-					b,-	Extensive; cattail dominant.	VI			
			acres	44.8		70.4	1.3	1.3	10.2			-								-					b,-					
81	Piscataway Creek	7	%	25		75			-																		VI			
			acres	1.8		5.2			-																					
	Total Section II Part 2	363	%	50	-	35	1	2	9	2		-							-	-	-	-	-	-	a,- q,1 b,-	Traces of f, j, l, m, r, s, t, u, v, w, x, y, z, aa, bb, cc.				
			acres	183.0	0.2	126.2	2.3	6.6	33.3	5.9		-							0.1	0.2	-	-	-	0.8	-	a,- q,3.4 b,-				
	Total Section II	1087	%	21	50	17	3	1	3	1		-	1	-		1	2	-	-	-	-	-	-	-	a,- g,- l,-	q:3.4 acres; traces of b, e, f, h, j, m, r, s, t, u, v, w, x, y, z, aa, bb, cc, dd.				
			acres	231.5	542.3	1796	29.1	11.8	33.3	7.9		-	10.9	2.0		10.8	17.0	0.5	0.1	0.2	1.6	-	-	0.8	-	a,- g,0.6 l,0.4				

- a Water Smartweed
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j Water Hemlock  
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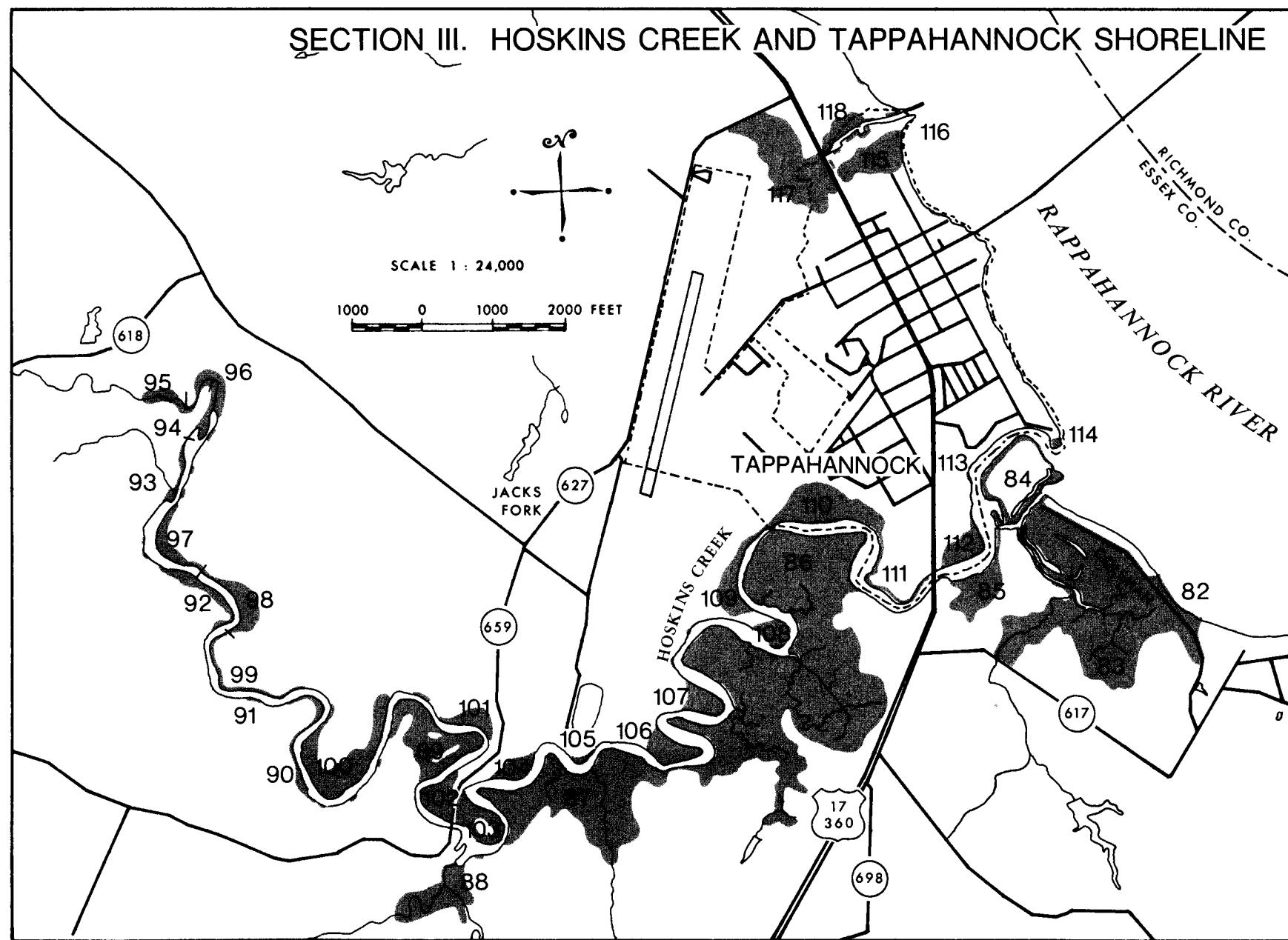
### Section III. Hoskins Creek and Tappahannock Shoreline

Hoskins Creek forms the southern border of the Town of Tappahannock, and thus shoreline activities are common, mostly along the downstream reaches. The most visible wetland alterations are the large marshes near the mouth of the creek, which have been used as disposal areas for the material dredged from the navigation channel. These spoiled marshes, once dominated by the moderately valuable big cordgrass, are presently vegetated extensively by reedgrass (Phragmites australis), a species of little ecological value. Other structures and activities in the lower creek include moderate boating and shipping, bulkheads, a marina, a highway crossing, and a grain elevator.

In contrast, the upper portions of the creek are mostly undisturbed, except for sewage effluents and a roadway crossing. The upstream marshes, often bordered by swamp, are dominated by pickerelweed and arrow arum, in contrast to the big cordgrass downstream. Submerged aquatics such as tapegrass are also present in the uppermost tidal portions but not nearly as abundantly as in Piscataway Creek.

The other marshes of the Tappahannock shoreline are found along an unnamed creek which forms the northern boundary of the town. These brackish marshes have been extensively bulkheaded, dredged, and filled and presently serve as the site of a marina and boat storage facility.

### SECTION III. HOSKINS CREEK AND TAPPAHANNOCK SHORELINE



Section III. Hoskins Creek and Tappahannock Shoreline

#	Marsh Location	Total Acres	%	Arrow Arum-Pickerelweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olmey Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
82	Rappahannock River	2	% acres	10	0.2								30	10	40										c, 10 c, 0.2	Separated from No. 83 by causeway.	XII		
83	Hoskins Creek	70	% acres	- 75 - 52.5	- - - -								0.6	0.2	0.8										g,- g,-	Abundance of reedgrass along creek suggesting presence of spoil.	V		
84	Hoskins Creek	8	% acres	- 90 - 7.2									-												10 0.8	Former marsh now almost completely covered by spoil, only cordgrass fringe remains. Reedgrass on spoil.	V		
85	Hoskins Creek	9	% acres	5 70 0.4 6.3	20 1.8								-												5 0.4		V		
86	Hoskins Creek	126	% acres	2 90 2.5 113.4	6 1 7.6 1.3	-							1												-	Very extensive; signs of trash and possibly spoil along landward edge.	V		
87	Hoskins Creek	43	% acres	15 50 6.4 21.5	25 10 10.8 4.3	- - - -							1.3												b,- b,-		V		
88	Church Swamp	12	% acres	80 15 9.6 1.8	5 0.6								-												Swamp in back of marsh.	VII			
89	Hoskins Creek	14	% acres	55 - 7.7 -	20 20 2.8 2.8	- 5 - 0.7							-												Swamp areas present.	VII			

a Water Smartweed  
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oo Marsh Fleabane  
pp Umbrella Sedge

Section III. Hoskins Creek and Tappahannock Shoreline

#	Marsh Location	Total Acres		Arrow Arum-Pickerelweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olney Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
90	Hoskins Creek	3	%	75		10	5	-	10	-		-						-	-	-	-						Long fringe bordered by swamp.	VII	
			acres	2.2		0.3	0.2	-	0.3	-		-							-	-	-								
91	Hoskins Creek	1	%	95			3	-	-	-									-	-	-							VII	
			acres	1.0			-	-	-	-									-	-	-								
92	Hoskins Creek	4	%	95		-	-	3	2		-								-									VII	
			acres	3.8		-	-	0.1	0.1		-								-										
93	Hoskins Creek	3	%	88			-	5	5		-							2		-	-							VII	
			acres	2.6			-	0.2	0.2		-							0.1		-	-								
94	Hoskins Creek	2	%	90		2		8		-									-								q,-	Submerged aquatics in creek.	VII
			acres	1.8		-		0.2		-									-								q,-		
95	Hoskins Creek	3	%	95			-	-	5		-								-		-						v,-	Tapegrass ( <i>Vallisneria americana</i> ) growing in creek.	VII
			acres	2.8			-	-	0.2		-								-		-						v,-		
96	Hoskins Creek	4	%	95			-	-	5		-								-		-						v,-		VII
			acres	3.8			-	-	0.2		-								-		-						v,-		
97	Hoskins Creek	2	%	90			-	2	8																		j,-		VII
			acres	1.8			-	-	0.2																		j,-		

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Section III. Hoskins Creek and Tappahannock Shoreline

#	Marsh Location	Total Acres		Arrow Arum-Pickeralweed	Big Cordgrass	Cattail		Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose		Water Dock	Saltbush	Saltmarsh Cordgrass	Olney Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice CutGrass	Jewelweed		Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
98	Hoskins Creek	7	%	60			-			-	40		-																		VII	
			acres	4.2			-			-	2.8		-																			
99	Hoskins Creek	0.69	%	67			20	1	1	3		-									5			-	1					VII		
			acres	0.5			0.1	-	-	-		-									-			-	-							
100	Hoskins Creek	13	%	60		10	15	-	10	-		-									5			-			b,-		VII			
			acres	7.8		1.3	2.0	-	1.3	-		-								0.6			-			b,-						
101	Hoskins Creek	3	%	30		60	10	-				-																	Cattail dominant.	VI		
			acres	0.9		1.8	0.3	-				-																				
102	Hoskins Creek	4	%	25	70		3	1	1			-									-	-		-						V		
			acres	1.0	2.8		0.1	-	-			-									-	-		-								
103	Hoskins Creek	11	%	65	25	5	5	-	-			-	-								-	-							Separated from No. 102 by causeway.	VII		
			acres	7.2	2.8	0.6	0.6	-	-			-	-							-	-											
104	Hoskins Creek	4	%	20		75	5	-																							VI	
			acres	0.8		3.0	0.2	-																								
105	Hoskins Creek	1	%	1	89		-	5													5									Sewage outfall nearby.	V	
			acres	-	0.9		-	-													-											

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Section III. Hoskins Creek and Tappahannock Shoreline

#	Marsh Location	Total Acres		Arcow Arum-Pickerelweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olney Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
106	Hoskins Creek	6	%	39	60	-	1	-				-																V	
			acres	2.3	3.6	-	0.1	-																					
107	Hoskins Creek	5	%	50	45	3	-	2					-															VII	
			acres	2.5	2.2	0.1	-	0.1																					
108	Hoskins Creek	3	%	65	35		-	-					-															VII	
			acres	2.0	1.0		-	-					-																
109	Hoskins Creek	5	%	55	38	5	-	-					-				1											VII	
			acres	2.8	1.9	0.2	-	-					-				-												
110	Hoskins Creek	14	%	3	95	2	-						-															V	
			acres	0.4	13.3	0.3	-						-																
111	Hoskins Creek	0.43	%	15	70	5	-					-	5	5			-	-									Reedgrass-vegetated spoil covering most of former marsh; only fringe remaining.	V	
			acres	0.1	0.3	-	-					-	-	-			-	-											
112	Hoskins Creek	4	%	20	78		2						-	-	-													V	
			acres	0.8	3.1		0.1						-	-	-														
113	Hoskins Creek	1	%	15	45		10						-	20			-											XII	
			acres	0.2	0.4		0.1						-	0.2			-												

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oo Marsh Fleabane  
pp Umbrella Sedge

### Section III. Hoskins Creek and Tappahannock Shoreline

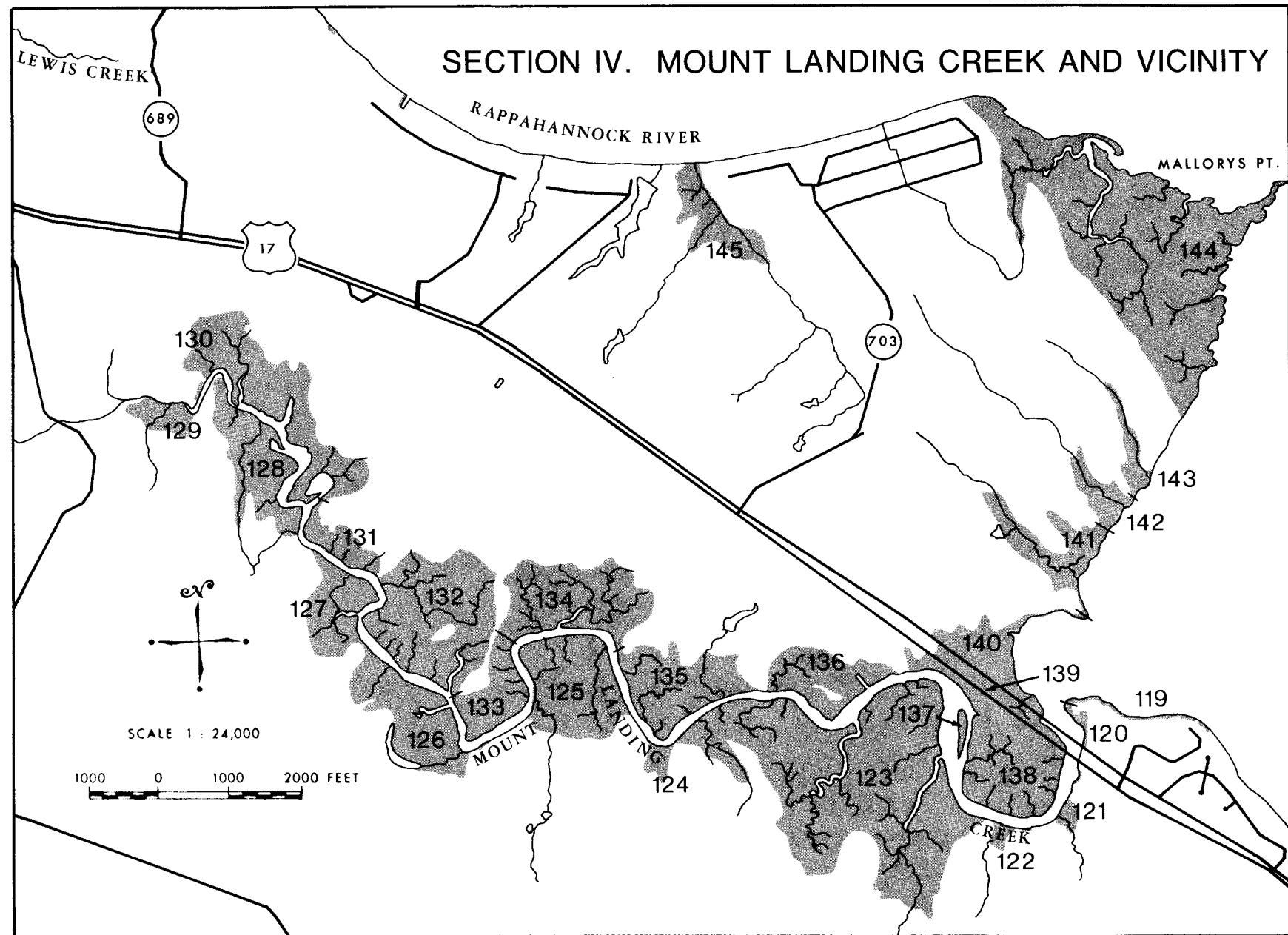
- |                   |                     |                   |                   |                      |                          |                   |
|-------------------|---------------------|-------------------|-------------------|----------------------|--------------------------|-------------------|
| a Water Smartweed | g Germander         | m Walter's Millet | s Marsh Fern      | y Burreed            | ee Switchgrass           | kk Aster          |
| b Royal Fern      | h Saltmarsh Bulrush | n Dodder          | t Ironweed        | z Turk's Cap Lily    | ff Sensitive Fern        | ll Woolgrass      |
| c Wax Myrtle      | i Arrowhead         | o River Bulrush   | u Iris            | aa Buttonbush        | gg Southern Wild Rice    | mm Duckweed       |
| d Marsh Mallow    | j Water Hemlock     | p Lizard's Tail   | v Swamp Dogwood   | bb Tag Alder         | hh Lance-leaved Milkweed | nn Water Parsnip  |
| e Orach           | k Rush              | q Beggar Ticks    | w Cardinal Flower | cc Three-way Sedge   | ii Bedstraw              | oo Marsh Fleabane |
| f Wood Reedgrass  | l Spikerush         | r Dayflower       | x Teart thumb     | dd Climbing Hempweed | jj Water Willow          | pp Umbrella Sedge |

#### Section IV. Mount Landing Creek and Vicinity

The marshes of Mount Landing Creek are mostly extensive and unspoiled, except for the Route 17 highway crossing near the mouth. Big cordgrass dominates, except in Nos. 126-131, where arrow arum, pickerelweed, and cattail are prominent. The uppermost marshes are also bordered by swamp, which serves as habitat for wood ducks.

The other marshes of this section are found along the Rappahannock River and are all dominated by big cordgrass. All are creek marshes except No. 144, an extensive marsh located at Mallorys Point.

## SECTION IV. MOUNT LANDING CREEK AND VICINITY



Section IV. Mount Landing Creek and Vicinity

#	Marsh Location	Total Acres		Arrow Arum-Pickerelweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olney Threesquare	Saltgrass-Salmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
119	Mount Landing Creek	0.69	%	-	45		15						-	20			20											Long fringe 15 ft. wide.	XII
120	Mount Landing Creek	2	%	1	98				0.1						1													Fringe and pocket marsh.	V
121	Mount Landing Creek	3	%	-	90	10																						Creek marsh.	V
122	Mount Landing Creek	2	%	-	95	5	-							-															V
123	Mount Landing Creek	150	%	2	90	5	-	-					-		-		3												V
124	Mount Landing Creek	5	%	-	90	10							-				4.5											Swamp in back of marsh.	V
125	Mount Landing Creek	39	%	-	79	20	-	1					-																V
126	Mount Landing Creek	43	%	34	40	20	-	5	1			-	-																XII
			acres	-	30.8	7.8	-	0.4				-	-																
			acres	14.6	17.2	8.6	-	2.2	0.4			-	-																

a Water Smartweed  
b Royal Fern  
c Wax Myrtle  
d Marsh Mallow  
e Orach  
f Wood Reedgrass

g Germander  
h Saltmarsh Bulrush  
i Arrowhead  
j Water Hemlock  
k Rush  
l Spikerush

m Walter's Millet  
n Dodder  
o River Bulrush  
p Lizard's Tail  
q Beggar Ticks  
r Dayflower

s Marsh Fern  
t Ironweed  
u Iris  
v Swamp Dogwood  
w Cardinal Flower  
x Tearthumb

y Burreed  
z Turk's Cap Lily  
aa Buttonbush  
bb Tag Alder  
cc Three-way Sedge  
dd Climbing Hempweed

ee Switchgrass  
ff Sensitive Fern  
gg Southern Wild Rice  
hh Lance-leaved Milkweed  
ii Bedstraw  
oo Marsh Fleabane  
pp Umbrella Sedge

Section IV. Mount Landing Creek and Vicinity

#	Marsh Location	Total Acres	%	Arrow Arum-Pickeralweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olney Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jeweled	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
127	Mount Landing Creek	20	%	59	-	35	1	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	VII		
			acres	11.8	-	7.0	0.2	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
128	Mount Landing Creek	28	%	42	-	55	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Diverse marsh; tapegrass in creek.	VI		
			acres	11.8	-	15.4	0.6	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
129	Mount Landing Creek	7	%	75	-	-	10	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	k,- s,- v,-	Very diverse; bordered by swamp.	VII	
			acres	5.2	-	-	0.7	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
130	Mount Landing Creek	51	%	50	-	45	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ff,-		VII	
			acres	25.5	-	23.0	2.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ff,-			
131	Mount Landing Creek	11	%	35	-	50	-	5	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	b,-		VI	
			acres	3.8	-	5.5	-	0.6	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	b,-			
132	Mount Landing Creek	60	%	38	60	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Extensive; low hummock in central portion.	V		
			acres	22.8	36.0	-	0.6	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
133	Mount Landing Creek	18	%	10	70	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			V	
			acres	1.8	12.6	3.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
134	Mount Landing Creek	44	%	-	95	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	k,- s,-		V	
			acres	-	41.8	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	k,- s,-			

a Water Smartweed  
 b Royal Fern  
 c Wax Myrtle  
 d Marsh Mallow  
 e Orach  
 f Wood Reedgrass

g Germander  
 h Saltmarsh Bulrush  
 i Arrowhead  
 j Water Hemlock  
 k Rush  
 l Spikerush

m Walter's Millet  
 n Dodder  
 o River Bulrush  
 p Lizard's Tail  
 q Beggar Ticks  
 r Dayflower

s Marsh Fern  
 t Ironweed  
 u Iris  
 v Swamp Dogwood  
 w Cardinal Flower  
 x Tearthumb

y Burreed  
 z Turk's Cap Lily  
 aa Buttonbush  
 bb Tag Alder  
 cc Three-way Sedge  
 dd Climbing Hempweed

ee Switchgrass  
 ff Sensitive Fern  
 gg Southern Wild Rice  
 hh Lance-leaved Milkweed  
 ii Bedstraw  
 jj Water Willow

kk Aster  
 ll Woolgrass  
 mm Duckweed  
 nn Water Parsnip  
 oo Marsh Fleabane  
 pp Umbrella Sedge

#### Section IV. Mount Landing Creek and Vicinity

#	Marsh Location	Total Acres		Arrow Arum- Pickerelweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose		Water Dock	Saltbush	Saltmarsh Cordgrass	Oiney Threesquare	Saltgrass - Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
135	Mount Landing Creek	31	%	5	80	15	-	-						-	-			-											V	
			acres	1.6	24.8	4.6	-	-						-	-			-												
136	Mount Landing Creek	20	%	-	95	4	1							-	-	-												k,- s,-	V	
			acres	-	19.0	0.8	0.2							-	-	-												k,- s,-		
137	Mount Landing Creek	1	%	5	90	5		-						-														Marsh island.	V	
			acres	-	0.9	-		-						-																
138	Mount Landing Creek	42	%	-	98	2	-	-						-	-													g,-	V	
			acres	-	41.2	0.8	-	-						-	-													g,-		
139	Mount Landing Creek	6	%	1	95		-							-				2										h,-	Separated from neighboring marshes by twin causeways.	V
			acres	0.1	5.7		-							-				0.1										h,-		
140	Mount Landing Creek	15	%	-	85		5							3		5												Spoil on marsh vegetated by elderberry, black locust, and wax myrtle.	V	
			acres	-	12.8		0.8							0.4		0.8														
141	Rappahannock River	20	%	-	100	-	-							-		-											Two connected creek marshes.	V		
			acres	-	20.0	-	-							-		-														
142	Rappahannock River	9	%	-	80	20								-		-												-	V	
			acres	-	7.2	1.8								-		-														

- a Water Smartweed
- b Royal Fern
- c Wax Myrtle
- d Marsh Mallow
- e Orach
- f Wood Reedgrass

g Germannder  
h Saltmarsh Bulrush  
i Arrowhead  
j Water Hemlock  
k Rush  
l Spikerush

- m Walter's Millet
- n Dodder
- o River Bulrush
- p Lizard's Tail
- q Beggar Ticks
- r Dayflower

- s Marsh Fern
- t Ironweed
- u Iris
- v Swamp Dogwood
- w Cardinal Flower
- x Tearthumb

- y Burreed
- z Turk's Cap Lily
- aa Buttonbush
- bb Tag Alder
- cc Three-way Sedge
- dd Climbing Hempweed

ee Switchgrass	kk Aster
ff Sensitive Fern	ll Woolgrass
gg Southern Wild Rice	mm Duckweed
hh Lance-leaved Milkweed	nn Water Parsnip
ii Bedstraw	oo Marsh Fleabane
jj Water Willow	pp Umbrella Sedge

#### Section IV. Mount Landing Creek and Vicinity

- a Water Smartweed
- b Royal Fern
- c Wax Myrtle
- d Marsh Mallow
- e Orach
- f Wood Reedgrass

- g** *Germander*
- h** *Saltmarsh Bulrush*
- i** *Arrowhead*
- j** *Water Hemlock*
- k** *Rush*
- l** *Spikerush*

- m Walter's Millet
- n Dodder
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jj Water Willow

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11 Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

#### Section V. Broad Creek, Quioccasin Creek, Sluice Creek

The lower reaches of Quioccasin Creek, or Broad Creek, are bordered on both sides by two large marshes heavily dominated by big cordgrass, making them Type V communities. Just upriver from these two marshes is Sluice Creek, a relatively short, shallow creek bordered by farmland. As in most other creeks of its size in Essex County, the marshes of the downstream reaches are brackish in character (Types V or XIII), with a gradual transition to freshwater communities (Type VII or XI) as one proceeds upstream.

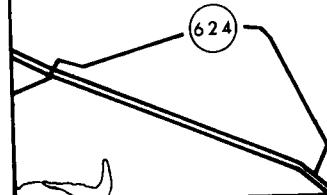
# SECTION V. BROAD CREEK, QUIOCCASIN CREEK, SLUICE CREEK



SCALE 1 : 24,000

1000 0 1000 2000 FEET

QUIOCCASIN CREEK



SLUICE CREEK

158 160 161  
157 156 159  
155 154 153

163

162

152

RICHMOND CO.  
ESSEX CO.

BLANDFIELD PT.

-RAPPAHANNOCK RIVER-

150

BROAD CR.

151

149

148

146

JENKINS LANDING

147

Section V. Broad Creek, Quioccasin Creek, Sluice Creek

#	Marsh Location	Total Acres		Arrow Arum-Pickerelweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Burrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olnley Threesquare	Salgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
146	Jenkins Landing	0.10	%	-	-	-	-	-	-	-	-	-	-	-	-	-	98	0.1	-	-	-	-	-	-	-	-	Fringe 10 ft. wide heavily dominated by common threesquare.	XI	
			acres	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
147	Rappahannock River	3	%	-	90	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Marsh island.	V
			acres	-	2.7	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
148	Lewis Creek	15	%	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	V
			acres	-	15.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
149	Broad Creek	165	%	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	V
			acres	-	165.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
150	Quioccasin Creek	29	%	5	55	3	-	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Trace of s, kk. Old beaver dam, submerged aquatics at head of creek.	V
			acres	1.4	16.0	0.9	-	4.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
151	Broad Creek	201	%	-	98	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	s,-ee,-	V
			acres	-	197.0	4.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
152	Sluice Creek	2	%	25	40	25	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	XII
			acres	0.5	0.8	0.5	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
153	Sluice Creek	56	%	2	95	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	V
			acres	1.1	53.2	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

a Water Smartweed  
b Royal Fern  
c Wax Myrtle  
d Marsh Mallow  
e Orach  
f Wood Reedgrass

g Germander  
h Saltmarsh Bulrush  
i Arrowhead  
j Water Hemlock  
k Rush  
l Spikerush

m Walter's Millet  
n Dodder  
o River Bulrush  
p Lizard's Tail  
q Beggar Ticks  
r Dayflower

s Marsh Fern  
t Ironweed  
u Iris  
v Swamp Dogwood  
w Cardinal Flower  
x Tearthumb

y Burreed  
z Turk's Cap Lily  
aa Buttonbush  
bb Tag Alder  
cc Three-way Sedge  
dd Climbing Hempweed

ee Switchgrass  
ff Sensitive Fern  
gg Southern Wild Rice  
hh Lance-leaved Milkweed  
ii Bedstraw  
jj Water Willow

kk Aster  
ll Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

Section V. Broad Creek, Quioccasin Creek, Sluice Creek

#	Marsh Location	Total Acres	%	Arrow Arum-Pickeralweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olney Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
154	Sluice Creek	0.25	%	75	10	10	5																				VII	
			acres	0.2	-	-	-																					
155	Sluice Creek	4	%	52	30	3	15																				VII	
			acres	2.1	1.2	0.1	0.6																					
156	Sluice Creek	3	%	5	84	-	10	-																			V	
			acres	0.2	2.5	-	0.3	-																				
157	Sluice Creek	28	%	20	20		10			30																XI		
			acres	5.6	5.6		2.8			8.4																		
158	Sluice Creek	6	%	45	40	-	10																			XII		
			acres	2.7	2.4	-	0.6																					
159	Sluice Creek	10	%	5	70	5	20																			V		
			acres	0.5	7.0	0.5	2.0																					
160	Sluice Creek	2	%	45	40	5	10	-																		XII		
			acres	0.9	0.8	0.1	0.2	-																				
161	Sluice Creek	2	%	65	10	10	15	-																		VII		
			acres	1.3	0.2	0.2	0.3	-																				

a Water Smartweed  
b Royal Fern  
c Wax Myrtle  
d Marsh Mallow  
e Orach  
f Wood Reedgrass

g Germander  
h Saltmarsh Bulrush  
i Arrowhead  
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m Walter's Millet  
n Dodder  
o River Bulrush  
p Lizard's Tail  
q Beggar Ticks  
r Dayflower

s Marsh Fern  
t Ironweed  
u Iris  
v Swamp Dogwood  
w Cardinal Flower  
x Teartumb

y Burreed  
z Turk's Cap Lily  
aa Buttonbush  
bb Tag Alder  
cc Three-way Sedge  
dd Climbing Hempweed

ee Switchgrass  
ff Sensitive Fern  
gg Southern Wild Rice  
hh Lance-leaved Milkweed  
ii Bedstraw  
jj Water Willow

kk Aster  
ll Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

## Section V. Broad Creek, Quioccasin Creek, Sluice Creek

- a Water Smartweed
- b Royal Fern
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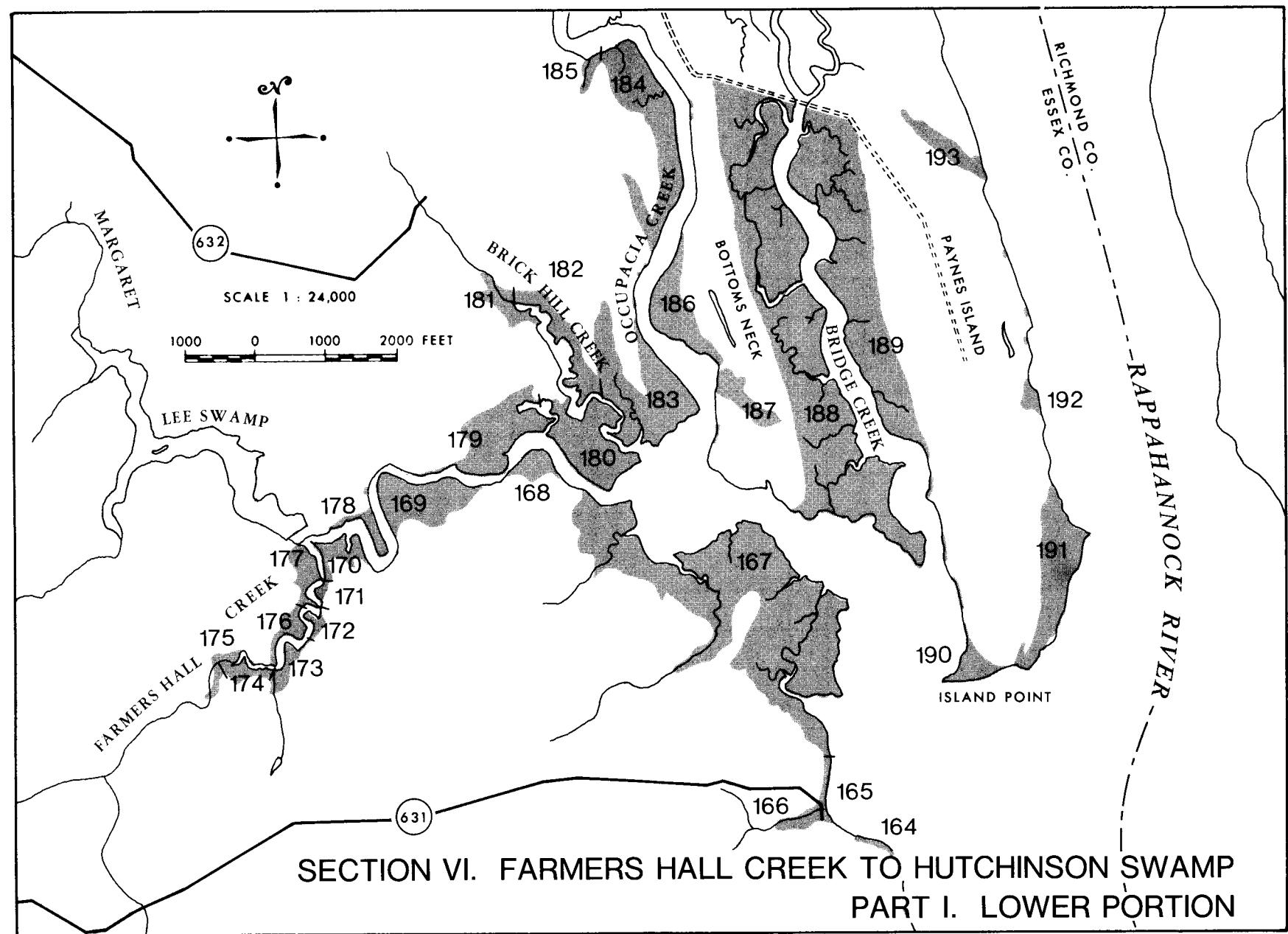
ee Switchgrass  
ff Sensitive Fern  
gg Southern Wild Rice  
hh Lance-leaved Milkweed  
ii Bedstraw  
jj Water Willow

kk Aster  
11 Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

## Section VI. Farmers Hall Creek to Hutchinson Swamp

A complex of creeks and marshes is found in the area of Lawson Neck, Thomas Neck, Bottoms Neck, and Paynes Island. The largest creek is Occupacia Creek, which is botanically interesting because of its unusually large proportion of sweetflag, Acorus calamus. This aromatic herb, usually uncommon, was found to completely dominate many marshes, growing in dense, monospecific stands. The high diversity of most of the marshes of Occupacia Creek, together with the abundance of plants such as wild rice, makes the creek very valuable in terms of food for waterfowl. For this reason, as well as the esthetic beauty of the wetlands, shoreline alterations and disturbances should be limited.

The large marsh separating Paynes Island from the mainland (Beverly Marsh) was divided into four marshes (Nos. 188, 189, 232, 233) for inventory purposes but is essentially a single marsh. This large brackish marsh totals 739 acres, making it the largest marsh in Essex County.



**Section VI. Farmers Hall Creek to Hutchinson Swamp  
Part 1. Lower Portion**

- a Water Smartweed
  - b Royal Fern
  - c Wax Myrtle
  - d Marsh Mallow
  - e Orach
  - f Wood Reedgrass

- g *Germander*  
h *Saltmarsh Bulrush*  
i *Arrowhead*  
j *Water Hemlock*  
k *Rush*  
l *Spikerush*

- m Walter's Millet  
n Dodder  
o River Bulrush  
p Lizard's Tail  
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- s Marsh Fern  
t Ironweed  
u Iris  
v Swamp Dogwood  
w Cardinal Flower  
x Tearthumb

- y Burreed  
z Turk's Cap Lily  
aa Buttonbush  
bb Tag Alder  
cc Three-way Sedge  
dd Climbing Hempweed

- |                          |                   |
|--------------------------|-------------------|
| ee Switchgrass           | kk Aster          |
| ff Sensitive Fern        | ll Woolgrass      |
| gg Southern Wild Rice    | mm Duckweed       |
| hh Lance-leaved Milkweed | nn Water Parsnip  |
| ii Bedstraw              | oo Marsh Fleabane |
| jj Water Willow          | pp Umbrella Sedge |

Section VI. Farmers Hall Creek to Hutchinson Swamp  
Part 1. Lower Portion

- a Water Smartweed
- b Royal Fern
- c Wax Myrtle
- d Marsh Mallow
- e Orach
- f Wood Reedgrass

g Germannder  
h Saltmarsh Bulrush  
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gg Southern Wild Rice  
hh Lance-leaved Milkweed  
ii Bedstraw  
jj Water Willow

kk Aster  
11 Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

Section VI. Farmers Hall Creek to Hutchinson Swamp  
Part 1. Lower Portion

#	Marsh Location	Total Acres		Arrow Arum-Pickerelweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Oliney Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jeweled	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
180	Farmers Hall Creek	22	%	25	70	-	2	-	-	-	-	-	-	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	V	
			acres	5.5	15.4	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
181	Brick Hill Creek	6	%	45		35	15	5																				b,-u,-x,-	XI
			acres	2.7		2.1	0.9	0.3																				b,-u,-x,-	
182	Brick Hill Creek	11	%	55	45		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	VII	
			acres	6.0	5.0		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
183	Occupacia Creek	34	%	7	60	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	b,-hh,-	V		
			acres	2.4	20.4	11.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	b,-hh,-			
184	Occupacia Creek	30	%	20	70	-	-	10																			b,-j,-q,-	Traces of s, hh.	V
			acres	6.0	21.0	-	-	3.0																			b,-j,-q,-		
185	Occupacia Creek	2	%	1		-	-	-		98																	Creek marsh heavily dominated by sweetflag.	XI	
			acres	-		-	-	-		2.0																			
186	Occupacia Creek	19	%	30	45	15	10	-																				XII	
			acres	5.7	8.6	2.8	1.9	-																					
187	Occupacia Creek	5	%	-		55										40		-								i,5 q,-	Creek marsh.	VI	
			acres	-		2.8										2.0		-								i,02 q,-			

a Water Smartweed  
b Royal Fern  
c Wax Myrtle  
d Marsh Mallow  
e Orach  
f Wood Reedgrass

g Germannder  
h Saltmarsh Bulrush  
i Arrowhead  
j Water Hemlock  
k Rush  
l Spikerush

m Walter's Millet  
n Dodder  
o River Bulrush  
p Lizard's Tail  
q Beggar Ticks  
r Dayflower

s Marsh Fern  
t Ironweed  
u Iris  
v Swamp Dogwood  
w Cardinal Flower  
x Tearthumb

y Burreed  
z Turk's Cap Lily  
aa Buttonbush  
bb Tag Alder  
cc Three-way Sedge  
dd Climbing Hempweed

ee Switchgrass  
ff Sensitive Fern  
gg Southern Wild Rice  
hh Lance-leaved Milkweed  
ii Bedstraw  
jj Water Willow

kk Aster  
ll Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

Section VI. Farmers Hall Creek to Hutchinson Swamp  
Part I. Lower Portion

#	Marsh Location	Total Acres	Part I. Lower portion																		Marsh Type					
			Arrow Arum	Pickeralweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olney Threesquare	Saltgrass- Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp
188	Bridge Creek	123	%	-	75	20	-	-				-						-			5	ee,-	Extensive; reedgrass common; similar to No. 189.		V	
			acres	-	92.2	24.6	-	-				-						-			6.2	ee,-				
189	Bridge Creek	74	%	2	75	20	-						-					-			3		Similar to No. 188.		V	
			acres	1.5	55.5	14.8	-						-					-			2.2					
190	Island Point	6	%	2	78	5	5											10				ee,-			V	
			acres	0.1	4.7	0.3	0.3											0.6				ee,-				
191	Paynes Island	25	%	5	60	20	5	-				-					10	-				aa,-	Sweetflag common.		V	
			acres	1.2	15.0	5.0	1.2	-				-					2.5	-				aa,-				
192	Paynes Island	3	%	-	-	70	10				20														VI	
			acres	-	-	2.1	0.3				0.6															
193	Paynes Island	6	%	-	20	25	55															Marsh hibiscus dominant.		XII		
			acres	-	1.2	1.5	3.3																			
	Total Section VI Part 1	555	%	16	59	16	3	1	-	1	-	-	-		1		-	-	-	-	2	-	i,- b,- j,-	Trace amounts of k, q, s, t, u, x, aa, ee, gg, hh.		
			acres	89.1	325.0	90.0	17.0	3.3	-	8.1	2.6	-	-		6.2		1.0	-	1.9	1.1	-	-	8.4	-	i,.02 b,- j,-	

- a Water Smartweed
- b Royal Fern
- c Wax Myrtle
- d Marsh Mallow
- e Orach
- f Wood Reedgrass

- g Germaneder
- h Saltmarsh Bulrush
- i Arrowhead
- j Water Hemlock
- k Rush
- l Spikerush

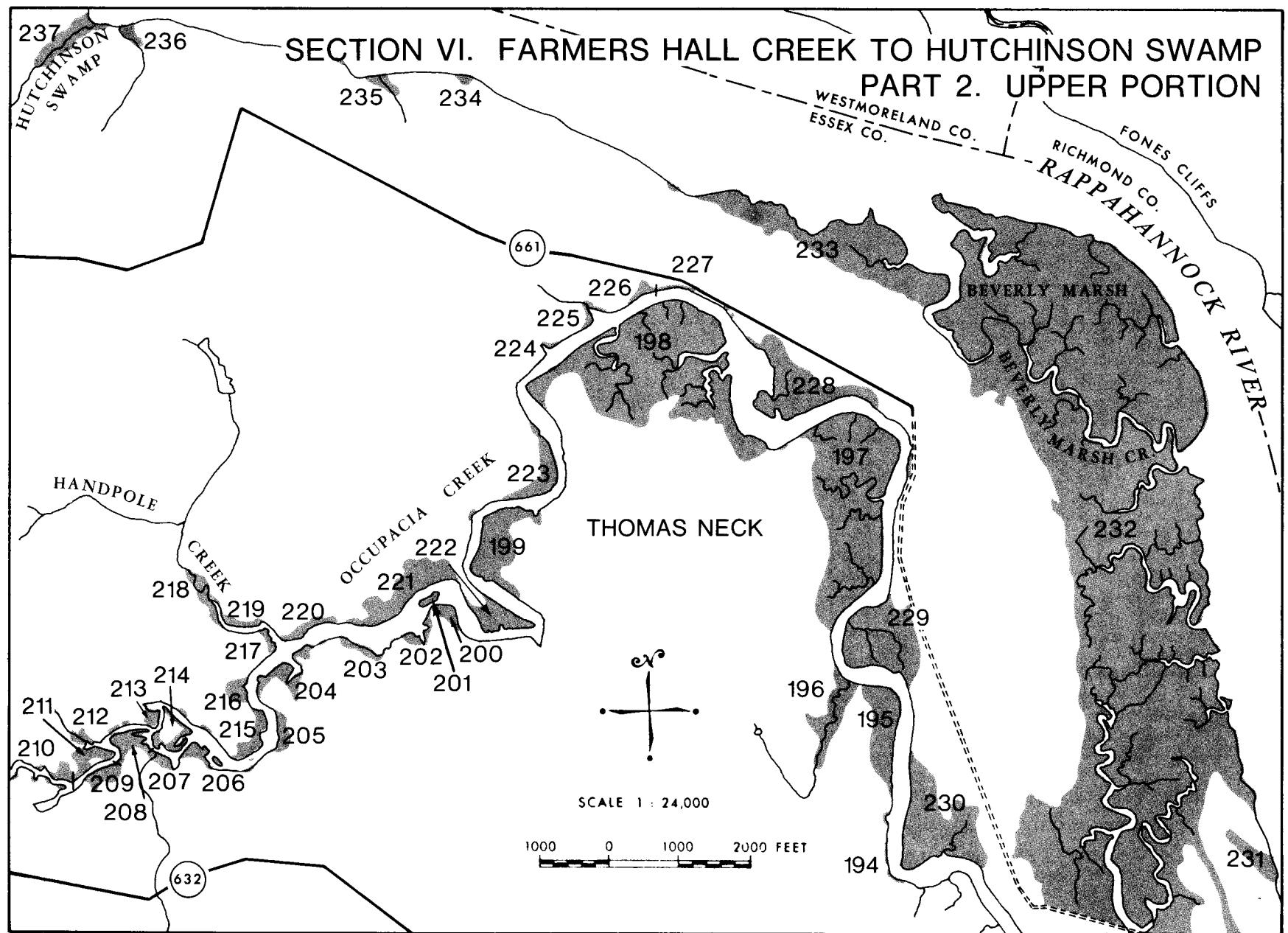
- m Walter's Millet
- n Dodder
- o River Bulrush
- p Lizard's Tail
- q Beggar Ticks
- r Dayflower

- s Marsh Fern
- t Ironweed
- u Iris
- v Swamp Dogwood
- w Cardinal Flower
- x Tearthumb

y Burreed  
z Turk's Cap Lily  
aa Buttonbush  
bb Tag Alder  
cc Three-way Sedge  
dd Climbing Hempweed

ee Switchgrass  
ff Sensitive Fern  
gg Southern Wild Rice  
hh Lance-leaved Milkweed  
ii Bedstraw  
jj Water Willow

kk Aster  
11 Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge



Section VI. Farmers Hall Creek to Hutchinson Swamp  
Part 2. Upper Portion

#	Marsh Location	Total Acres	%	Acres	Arrow Arum-Pickerelweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	100	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olney Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
194	Baird Landing	0.16	%	acres								0.1																	Intermittent fringe 10 ft. wide composed of sweetflag.	XI	
195	Occupacia Creek	13	%	30	30	-	20			-	20	-																b,-aa,-		XI	
196	Occupacia Creek	8	%	40	-	40	20	-				-																b,-aa,-		XI	
197	Occupacia Creek	60	%	15	35	40	5	5		-	-	-																Upstream portion exhibits fresh characteristics; downstream portion, brackish.		XI	
198	Occupacia Creek	73	%	10	5	60	10	10	3		-	-															gg,-	Diverse, swamp in back.	VI		
199	Occupacia Creek	13	%	15	-	40	20	20	-	-	-																b,-jj;-t,-	Very diverse; trace of gg.	XI		
200	Occupacia Creek	3	%	-		-			-	80	5																	Dominated by sweetflag.	XI		
201	Occupacia Creek	2	%	acres						100																		Yellow pond lily island.	IX		

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jj Water Willow

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ll Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

Section VI. Farmers Hall Creek to Hutchinson Swamp  
Part 2. Upper Portion

#	Marsh Location	Total Acres		Arrow Arum-Pickere weed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olney Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
202	Occupacia Creek	2	% acres	- -					40 0.8		60 1.2	-																Sweetflag dominant.	XI
203	Occupacia Creek	1	% acres	1 -	1 -				35 0.4		60 0.6	-							-	1		-	x,-					XI	
204	Occupacia Creek	5	% acres	40 2.0	10 0.5	5 0.2	-	15 0.8		30 1.5	-							-	-	-	-	-	x,- aa,-				Embayed marsh with yellow pond lily fringe.	XI	
205	Occupacia Creek	3	% acres				1		-	98 2.9								-								aa,-	Sweetflag very dominant.	XI	
206	Occupacia Creek	2	% acres	- -	- -	- -			25 0.5		75 1.5	-						-									Sweetflag marsh and yellow pond lily island.	XI	
207	Occupacia Creek	2	% acres	- -			- -	10 0.2	15 0.3	45 0.9	30 0.6																XI		
208	Occupacia Creek	4	% acres	55 2.2			5 0.2	- -	20 0.8	- -	20 0.8	-						-									VII		
209	Occupacia Creek	4	% acres	95 3.8			- -	5 0.2	- -			-						-	-								VII		

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jj Water Willow

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mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

Section VI. Farmers Hall Creek to Hutchinson Swamp  
Part 2. Upper Portion

#	Marsh Location	Total Acres	%	Arrow Arum-Pickeralweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olney Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
210	Occupacia Creek	2	%	80					-	20		-														k, - t, -		VII	
			acres	1.6					-	0.4		-														k, - t, -			
211	Occupacia Creek	3	%	90		1	1	-	-	2									2	1	-					k, - y, - ii, -		VII	
			acres	2.7		-	-	-	-	0.1									0.1	-	-					k, - t, - ii, -			
212	Occupacia Creek	1	%	90			5	-	-		-															g, 5 y, -	Southern wild rice common.	VII	
			acres	0.9			-	-	-		-															g, - y, -			
213	Occupacia Creek	2	%	33	25	30	-		10	-								2								Sedge species: <u>Carex hyalinolepis</u> .	XI		
			acres	0.7	0.5	0.6	-		0.2	-									-										
214	Occupacia Creek	3	%	10				80	10	-																Fringe partially surrounding swamp island.	IX		
			acres	0.3				2.4	0.3	-																			
215	Occupacia Creek	4	%	-				60	38	-							2	-										IX	
			acres	-				2.4	1.5	-							0.1	-											
216	Occupacia Creek	2	%	30			10	1	30	1	20	-						5							y, -	Trace of <u>Carex hyalinolepis</u> (sedge).	XI		
			acres	0.6			0.2	-	0.6	-	0.4	-						0.1							y, -				
217	Handpole Creek	1	%				-		2		95	-								-					t, - bb, -	Sweetflag very dominant.	XI		
			acres				-		-		1.0	-							-						t, - bb, -				

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ee Switchgrass  
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ii Bedstraw  
jj Water Willow

kk Aster  
ll Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

**Section VI. Farmers Hall Creek to Hutchinson Swamp  
Part 2. Upper Portion**

#	Marsh Location	Total Acres	Part 2. Upper Portion																		Marsh Type				
			Arrow Arum	Pickeralweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bullrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olney Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Marsh Milkweed	Meadow Rue	Reedgrass
218	Handpole Creek	3	%	-					-	90								10				x,-	Sweetflag dominant.	XI	
			acres	-					-	2.7								0.3				x,-			
219	Handpole Creek	2	%	-			-		5	95												x,-	Sweetflag dominant.	XI	
			acres	-			-		0.1	1.9												x,-			
220	Occupacia Creek	2	%						5	95								-	-			-	Sweetflag dominant.	XI	
			acres						0.1	1.9								-	-			-			
221	Occupacia Creek	14	%	-			-		45	55	-										-	-	aa,-	Sweetflag islands and fringes interconnected by yellow pond lily.	XI
			acres	-			-		6.3	7.7	-										-	-	aa,-		
222	Occupacia Creek	7	%	55		25	10	5	5		-							-	-			k,-	VII		
			acres	3.8		1.8	0.7	0.4	0.4		-							-	-			k,-			
223	Occupacia Creek	4	%	40	15	40	5	-		-	-	-					-	-	-		-	aa,-	High density.	XI	
			acres	1.6	0.6	1.6	0.2	-		-	-	-					-	-	-		-	aa,-			
224	Occupacia Creek	1	%	60		20	5	-	10	5							-				-		VII		
			acres	0.6		0.2	-	-	0.1	-							-				-				
225	Occupacia Creek	2	%	1		5	1		45	45	-						1				-	gg,-	Creek marsh.	XI	
			acres	-		0.1	-		0.9	0.9	-						-				-	gg,-			

- a Water Smartweed
- b Royal Fern
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y Burreed  
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ee Switchgrass	kk Aster
ff Sensitive Fern	ll Woolgrass
gg Southern Wild Rice	mm Duckweed
hh Lance-leaved Milkweed	nn Water Parsnip
ii Bedstraw	oo Marsh Fleabane
jj Water Willow	pp Umbrella Sedge

Section VI. Farmers Hall Creek to Hutchinson Swamp  
Part 2. Upper Portion

#	Marsh Location	Total Acres	%	Arow Arum-Picrelweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bullrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olnie Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
226	Occupacia Creek	2	% acres	-	-	-	-	-	-	98	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pocket marsh dominated by sweetflag.	XI		
227	Occupacia Creek	0.18	5 acres	-	-	-	-	-	-	100	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Sweetflag fringe.	XI		
228	Occupacia Creek	18	% acres	20 3.6	30 5.4	2 0.4	- -	- 4.0	- -	22 4.0	- -	- -	-	-	-	-	-	23 4.1	- -	- -	-	3 0.5	- -	j,- j,- l,- l,- s,- s,-	Trace of t, x, aa; extremely diverse; common threesquare along shore.	XI			
229	Occupacia Creek	19	% acres	10 1.9	15 2.8	25 4.8	20 3.8	1 0.2	- -	- -	- -	- -	-	-	-	-	1 0.2	25 4.8	- -	- -	-	b,- b,- j,- j,- hh,- hh,-	Diverse; rice cutgrass common.	XI					
230	Occupacia Creek	24	% acres	30 7.2	15 3.6	20 4.8	10 2.4	5 1.2	- -	- -	- -	- -	-	*	-	-	20 4.8	- -	-	-	hh,- hh,-	-	-	-	-	XI			
231	Paynes Island	5	% acres	90 4.5	5 0.2	-	-	-	-	-	-	-	-	-	-	5 0.2	- -	-	-	-	-	-	-	-	-	V			
232	Beverly Marsh	501	% acres	1 5.0	68 340.7	25 125.2	2 10.0	- -	-	-	-	-	-	-	2 10.0	2 10.0	-	-	-	-	j,- j,-	Extensive marsh.	V						
233	Beverly Marsh	41	% acres	10 4.1	5 2.0	70 28.7	10 4.1	-	-	-	-	-	-	-	-	5 2.0	-	-	-	-	j,- j,- ee,- ee,-	-	-	-	VI				

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mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
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**Section VI. Farmers Hall Creek to Hutchinson Swamp**  
**Part 2. Upper Portion**

#	Marsh Location	Total Acres	Part 2. Upper portion															Marsh Type											
			%	Arrow Arum	Pickeralweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Oliney Threesquare	Saltgrass - Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	
234	Rappahannock River	2	%	5	30	5	20					35					5			-							Trace of aa, ee; pocket marsh.	XI	
			acres	0.1	0.6	0.1	0.4					0.7					0.1			-									
235	Rappahannock River	3	%	30	-	30		-		40	-									-									XI
			acres	0.9	-	0.9		-		1.2	-									-									
236	Rappahannock River	2	%	35	5	10	35	-			-						5	-	5									Trace of t, kk ( <u>Aster</u> spp.); swamp in back.	XI
			acres	0.7	0.1	0.2	0.7	-			-						0.1	-	0.1										
237	Hutchinson Swamp	6	%	20	-	30	10			15							-	25	-								Submerged aquatics in creek.	XI	
			acres	1.2	-	1.8	0.6					0.9					-	1.5	-										
	Total Section VI Part 2	871	%	8	44	29	5	2	2	1	4	-	-			1	1	-	2	-	-	-	-	-			Trace amounts of g, j, k, l, q, s, t, y, aa, bb, ee, gg, hh, ii, jj, kk.		
			acres	70.9	379.5	256.7	39.4	17.5	21.1	6.6	36.5	0.2	-			10.2	12.5	0.2	15.6	0.7	-	-	-	0.5	-				
	Total Section VI	1427	%	11	49	24	4	1	1	1	3	-	-			1	1	-	1	-	-	-	1	-			Traces of f, g, j, k, l, q, s, t, u, y, aa, bb, ee, gg, hh, ii, jj, kk.		
			acres	160.0	704.5	346.7	56.4	20.8	21.1	14.7	39.1	0.2	-			16.4	13.5	0.2	17.5	1.8	-	-	-	8.9	-				

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- e Orach
- f Wood Reedgrass

g Germander  
h Saltmarsh Bulrush  
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l Spikerush

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- q Beggar Ticks
- r Dayflower

- s Marsh Fern
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- cc Three-way Sedge
- dd Climbing Hempweed

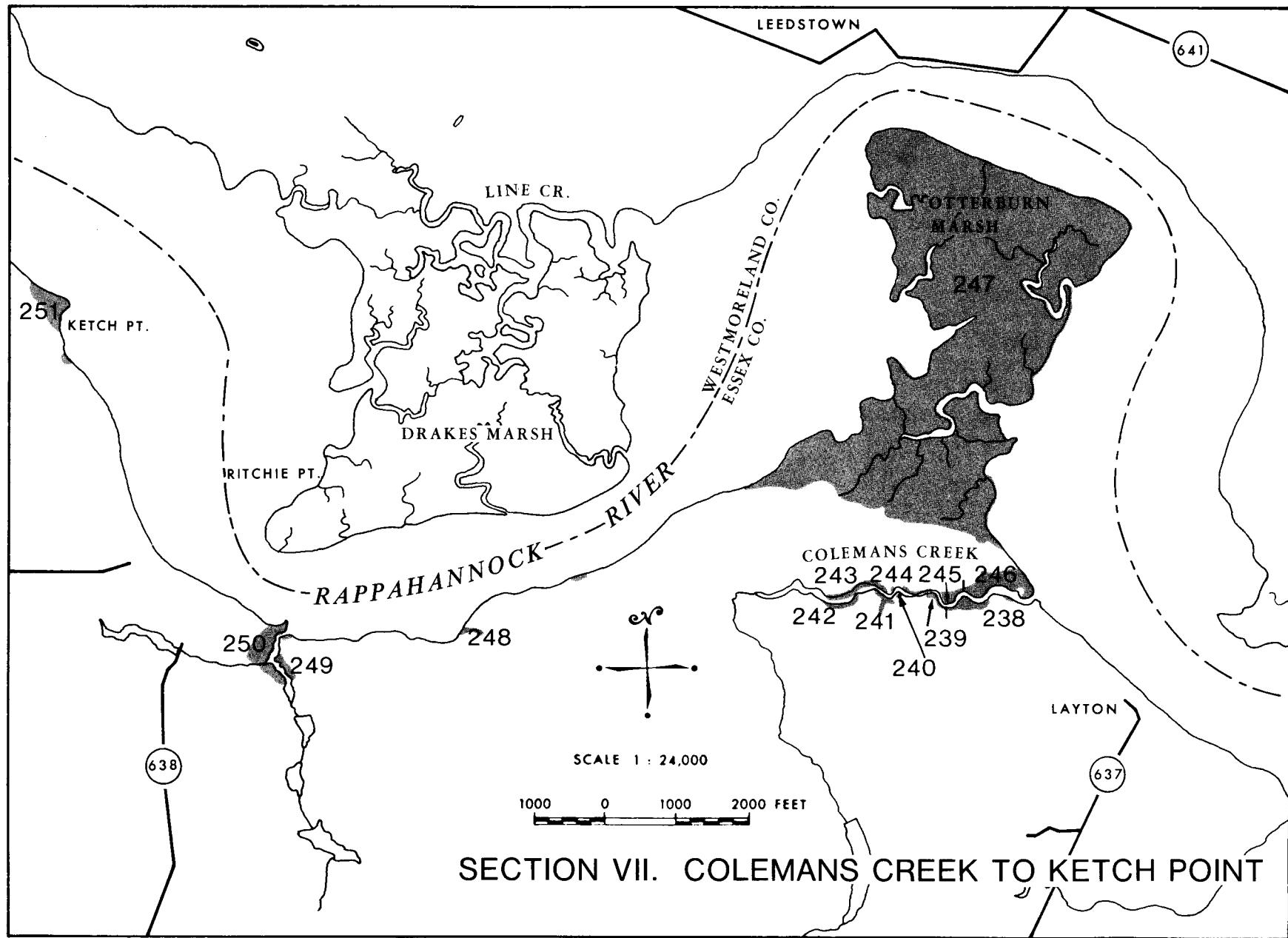
ee Switchgrass  
ff Sensitive Fern  
gg Southern Wild Rice  
hh Lance-leaved Milkweed  
ii Bedstraw  
jj Water Willow

kk Aster  
ll Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

## Section VII. Colemans Creek to Ketch Point

Colemans Creek is a small stream flanked by freshwater marshes. These marshes are very diverse, and pickerelweed seems to be the most prevalent species. A significant portion of the creek is effectively dammed by beavers and is considered nontidal. The abundance of important waterfowl foods such as wild rice and Walter's millet (Echinochloa walteri) as well as submerged aquatic vegetation (tapegrass, waterweed, pondweeds) makes this creek a prime waterfowl feeding area.

The largest freshwater marsh and probably the most diverse marsh in Essex County is Otterburn Marsh, also known as Hunter Marsh. Approximately 28 species were observed, many growing among each other so that estimating species percentages was difficult. However, plants sometimes were observed to grow in distinct zones, especially along the northern shoreline, where a distinct banding of pickerelweed, wild rice, and cattail exists. Several species are present in unusually high proportions, such as rice cutgrass, marsh fern (Thelypteris palustris), and royal fern (Osmunda regalis). Waterfowl values of this marsh are high, due to its abundance and diversity of food sources and its large size.



## Section VII. Colemans Creek to Ketch Point

#	Marsh Location	Total Acres	%	Arrow Arum-Pickertweeed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olney Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
238	Colemans Creek	2	% 40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-	-	-	-	XI		
			acres 0.8	0.8	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4	-	-	-	-	-	-				
239	Colemans Creek	1	% 30	-	10	10	-	-	-	-	-	-	-	-	-	-	-	-	40	10	-	-	-	-	b,-	Rice cutgrass common.	XI		
			acres 0.3	-	0.1	0.1	-	-	-	-	-	-	-	-	-	-	-	-	0.4	0.1	-	-	-	-	b,-				
240	Colemans Creek	0.25	% 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	20	-	-	-	-	10	z,-	Rice cutgrass dominant.	XI	
			acres -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	z,-			
241	Colemans Creek	1	% 40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45	10	-	-	-	-	5	s,-aa,-	Diverse; fringe and pocket bordered by swamp.	XI	
			acres 0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4	0.1	-	-	-	-	-	s,-aa,-			
242	Colemans Creek	1	% 35	-	1	-	30	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	-	-	1	i,1 m,- q,-	Trace of t, x, aa, 11, mm; diverse, submerged aquatics, beaver dam.	XI	
			acres 0.4	-	-	-	0.3	-	-	-	-	-	-	-	-	-	-	-	0.3	-	-	-	-	-	-	i,- m,- q,-			
243	Colemans Creek	1	% 55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-	-	-	-	5	z,-	Fringe bordered by swamp.	VII	
			acres 0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4	-	-	-	-	-	-	z,-			
244	Colemans Creek	1	% 40	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45	-	-	-	-	-	5	b,- z,- ff,-	Very diverse; submerged aquatics include tapegrass, waterweed and pondweed.	XI	
			acres 0.4	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4	-	-	-	-	-	-	b,- z,- ff,-			
245	Colemans Creek	2	% 30	30	30	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	5	i,-		XI	
			acres 0.6	0.6	0.6	0.6													0.1	-	-	-	-	-	0.1	i,-			

a Water Smartweed  
 b Royal Fern  
 c Wax Myrtle  
 d Marsh Mallow  
 e Orach  
 f Wood Reedgrass

g Germander  
 h Saltmarsh Bulrush  
 i Arrowhead  
 j Water Hemlock  
 k Rush  
 l Spikerush

m Walter's Millet  
 n Dodder  
 o River Bulrush  
 p Lizard's Tail  
 q Beggar Ticks  
 r Dayflower

s Marsh Fern  
 t Ironweed  
 u Iris  
 v Swamp Dogwood  
 w Cardinal Flower  
 x Tearthumb

y Burreed  
 z Turk's Cap Lily  
 aa Buttonbush  
 bb Tag Alder  
 cc Three-way Sedge  
 dd Climbing Hempweed

ee Switchgrass  
 ff Sensitive Fern  
 gg Southern Wild Rice  
 hh Lance-leaved Milkweed  
 ii Bedstraw  
 jj Water Willow

kk Aster  
 ll Woolgrass  
 mm Duckweed  
 nn Water Parsnip  
 oo Marsh Fleabane  
 pp Umbrella Sedge

## Section VII. Colemans Creek to Ketch Point

- a Water Smartweed
- b Royal Fern
- c Wax Myrtle
- d Marsh Mallow
- e Orach
- f Wood Reedgrass

- g** Germaneder
- h** Saltmarsh Bulrush
- i** Arrowhead
- j** Water Hemlock
- k** Rush
- l** Spikerush

- m Walter's Millet
- n Dodder
- o River Bulrush
- p Lizard's Tail
- q Beggar Ticks
- r Dayflower

- s Marsh Fern
- t Ironweed
- u Iris
- v Swamp Dogwood
- w Cardinal Flower
- x Tearthumb

- y Burreed
- z Turk's Cap Lily
- aa Buttonbush
- bb Tag Alder
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- dd Climbing Hempweed

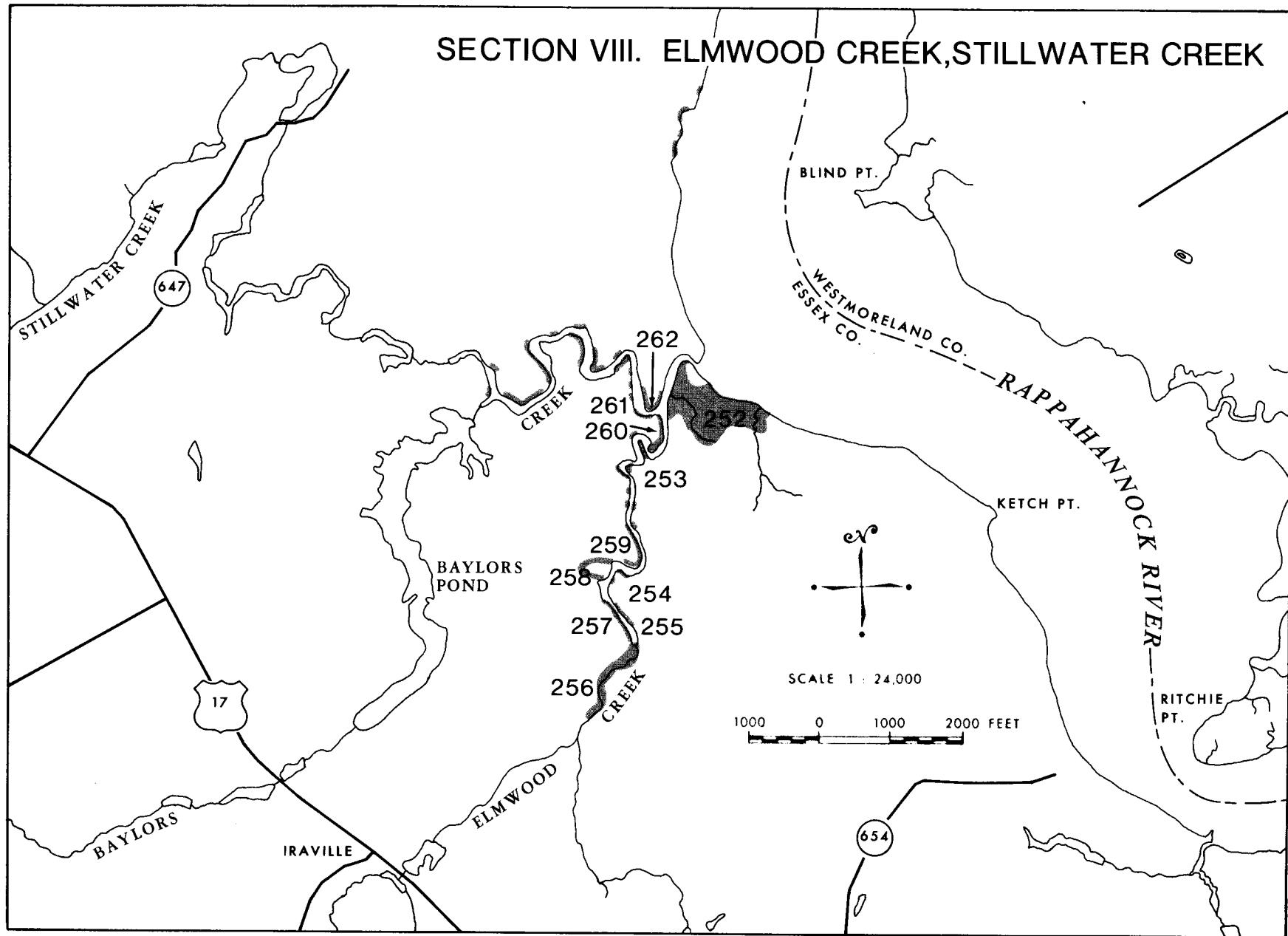
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- ff Sensitive Fern
- gg Southern Wild Rice
- hh Lance-leaved Milkweed
- ii Bedstraw
- jj Water Willow

kk Aster  
11 Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

#### Section VIII. Elmwood Creek, Stillwater Creek

These two creeks contain only 31 acres of marsh, although considerable amounts of swamp are present. Most of the marshes are small fringes of 1 or 2 acres or less, and all but two are valuable Type XI (Freshwater Mixed) communities. Submerged aquatics such as hornwort also add to the waterfowl value.

## SECTION VIII. ELMWOOD CREEK, STILLWATER CREEK



Section VIII. Elmwood Creek, Stillwater Creek

#	Marsh Location	Total Acres		Arrow Arum-Pickeralweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olnay Threesquare	Saltgrass-Sallmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
252	Elmwood Creek	18	%	10	20	50	10	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	i,- s,-	VI			
			acres	1.8	3.6	9.0	1.8		-	-	1.8														i,- s,-				
253	Elmwood Creek	1	%	10		-	3		-	-	65							10		10		-	-	-	-	i,- z,- ee,-	XI		
			acres	0.1		-	-		-	-	0.6							0.1		0.1		-	-	-	-	i,- z,- ee,-			
254	Elmwood Creek	0.10	%	15				-	5	80									-	-	-	-	-	-	-	i,-	XI		
			acres	-				-	-	0.1									-	-	-	-	-	-	-	i,-			
255	Elmwood Creek	0.14	%	5			-		1	90									-	1		-	-	-	-	q,- z,-	XI		
			acres	-			-		-	0.1									-	-	-	-	-	-	-	q,- z,-			
256	Elmwood Creek	5	%	20			10		10	40	10								10		-					i,- z,-	XI		
			acres	1.0			0.5		0.5	2.0	0.5								0.5		-					i,- z,-			
257	Elmwood Creek	1	%	10			-		-	90											-	-				i,- z,-	XI		
			acres	0.1			-		-	0.9											-	-				i,- z,-			
258	Elmwood Creek	2	%	-			-		5	85	10								-							Old creek channel now vegetated by marsh.	XI		
			acres	-			-		0.1	1.7	0.2								-										
259	Elmwood Creek	1	%	10			10		-	40									20		-					q,20 i,- dd,-	XI		
			acres	0.1			0.1		-	0.4									0.2		-					q,02 i,- dd,-			

a Water Smartweed  
b Royal Fern  
c Wax Myrtle  
d Marsh Mallow  
e Orach  
f Wood Reedgrass

g Germander  
h Saltmarsh Bulrush  
i Arrowhead  
j Water Hemlock  
k Rush  
l Spikerush

m Walter's Millet  
n Dodder  
o River Bulrush  
p Lizard's Tail  
q Beggar Ticks  
r Dayflower

s Marsh Fern  
t Ironweed  
u Iris  
v Swamp Dogwood  
w Cardinal Flower  
x Teartumb

y Burreed  
z Turk's Cap Lily  
aa Buttonbush  
bb Tag Alder  
cc Three-way Sedge  
x Tearthumb

ee Switchgrass  
ff Sensitive Fern  
gg Southern Wild Rice  
hh Lance-leaved Milkweed  
ii Bedstraw  
jj Water Willow

kk Aster  
ll Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

## Section VIII. Elmwood Creek, Stillwater Creek

- a Water Smartweed
- b Royal Fern
- c Wax Myrtle
- d Marsh Mallow
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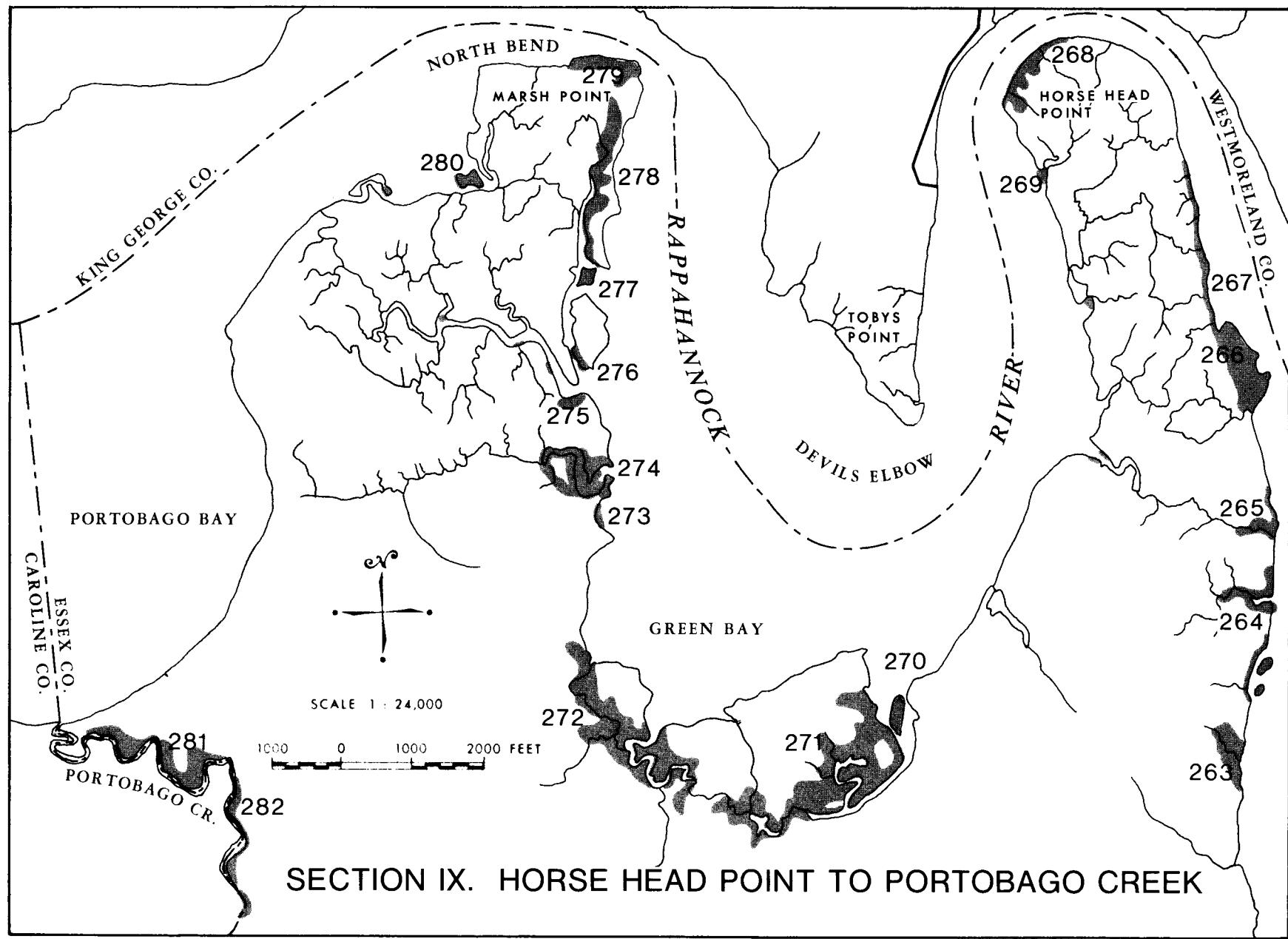
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w Cardinal Flower  
x Tearthumb

y Burreed  
z Turk's Cap Lily  
aa Buttonbush  
bb Tag Alder  
cc Three-way Sedge  
dd Climbing Hempweed

ee	Switchgrass	kk	Aster
ff	Sensitive Fern	ll	Woolgrass
gg	Southern Wild Rice	mm	Duckweed
hh	Lance-leaved Milkweed	nn	Water Parsnip
ii	Bedstraw	oo	Marsh Fleabane
jj	Water Willow	pp	Umbrella Sedge

## Section IX. Horse Head Point to Portobago Creek

This section covers the most upriver marshes of Essex County. The first major populations of yellow pond lily on the Rappahannock River proper appear along this stretch of river, which here has a distinctively freshwater character as compared with downstream reaches. Most of the marshes are small in comparison to the large neighboring swamps, which are populated with such trees as black gum (Nyssa sylvatica), red maple (Acer rubrum), alders (Alnus spp.), and ashes (Fraxinus spp.). Many of the marshes are dominated by wild rice, one of the most valuable waterfowl food sources. The value of this area to wildlife is evident, judging by the egrets, wood ducks, and one or two bald eagles seen.



Section IX. Horse Head Point to Portobago Creek

#	Marsh Location	Total Acres		Arrow Arum-Pickertweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bullrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olney Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jewelweed	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type		
263	Rappahannock River	6	%	40		10					-																		Large amount of reedgrass.	XI	
			acres	2.4		0.6			1.2		-																				
264	Rappahannock River	5	%	20		10	20		-																				Trace of aa, ee; diverse.	XI	
			acres	1.0		0.5	1.0		-																						
265	Rappahannock River	7	%	50		20			-	30																			i,-	VII	
			acres	3.5		1.4			-	2.1																					
266	Rappahannock River	11	%					100																						Long fringe 20 feet wide.	IX
			acres					11.0																							
267	Rappahannock River	1.4	%	40		30			30	-																					XI
			acres	0.6		0.4			0.4	-																					
268	Horse Head Point	6	%	10		10		-	80																						XI
			acres	0.6		0.6		-	4.8																						
269	Horse Head Point	1	%					100																							IX
			acres					1.0																							
270	Green Bay	2	%				100																						Yellow pond lily island.	IX	
			acres				2.0																								

a Water Smartweed  
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gg Southern Wild Rice  
hh Lance-leaved Milkweed  
ii Bedstraw  
jj Water Willow

kk Aster  
ll Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

Section IX. Horse Head Point to Portobago Creek

#	Marsh Location	Total Acres		Arrow Arum-Pickere Iweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olney Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type	
271	Green Bay	36	%	10	-	-			5	85															q,-	Wild rice dominant.	XI		
			acres	3.6		-			1.8	30.6															q,-				
272	Green Bay	26	%	10	-	-			5	85															q,-		XI		
			acres	2.6		-	-		1.3	22.1															q,-				
273	Green Bay	1	%						100																			IX	
			acres						1.0																				
274	Green Bay	10	%	20	1	10			60										-	5	-	1				1,- v,- z,-	Trace of nn; much of creek overgrown with yellow pond lily.	IX	
			acres	2.0	0.1	1.0			6.0										-	0.5	-	0.1				1,- v,- z,-			
275	Rappahannock River	2	%		10	5			40	40																dd, 5	Climbing hempweed common.	XI	
			acres		0.2	0.1			0.8	0.8															dd, 01				
276	Rappahannock River	1	%						100																				IX
			acres						1.0																				
277	Rappahannock River	2	%						100																		Marsh island.	IX	
			acres						2.0																				
278	Marsh Point	10	%	60	20	5			10	5															j,- cc,- j,- l,- cc,-	Trace of dd.	VII		
			acres	6.0	2.0	0.5			1.0	0.5																			

a Water Smartweed  
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 mm Duckweed  
 nn Water Parsnip  
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Section IX. Horse Head Point to Portobago Creek

#	Marsh Location	Total Acres	%	Arrow Arum-Pickerelweed	Big Cordgrass	Cattail	Marsh Hibiscus	Giant Bulrush	Yellow Pond Lily	Wild Rice	Sweetflag	Swamp Rose	Water Dock	Saltbush	Saltmarsh Cordgrass	Olney Threesquare	Saltgrass-Saltmeadow Hay	Common Threesquare	Sedge	Rice Cutgrass	Jeweled	Red Maple	Swamp Milkweed	Meadow Rue	Reedgrass	Water Hemp	Others	Observations	Marsh Type
279	Marsh Point	6	% acres	-	-				-	98																		XI	
280	Marsh Point	2	% acres						100																			Marsh island.	IX
281	Portobago Creek	10	% 10 acres 1.0						20											40 10								q, 10 x, 7 a, 1 q, 1.0 x, 0.7 a, 0.1 m, 1% (0.1 acres)	XI
282	Portobago Creek	5	% 20 acres 1.0			-		50	5											4.0 1.0								m,- x, 20 m,- x, 1.0	IX
	Total Section IX	150	% 16 acres 24.3	4	2	-	24	45	-										- -	4 1		- -	1	-	x, 1 q, 1 i,- x, 1.7 q, 1.0 i, 0.5	a, 0.1a; m, 0.1a; dd, 0.1a; traces of j, l, s, v, z, aa, cc, ee, nn.			
	Total Essex County	5214	% 13 acres 697.6	54	16	3	1	2	3	1	-	-	1	-	1	1	1	-	1	5.5 1.7	0.5 0.1	1.8 0.1	-	1	-	q,- s,- t,- g, 10 s, 5.8 t, 5.8	x, 4.6a; b, 2.9a; i, 0.7a; a, 0.6a; g, 0.6a; m, 0.6a; l, 0.4a; c, 0.2a; dd, 0.1a; trace amounts of others.		

a Water Smartweed  
b Royal Fern  
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ll Woolgrass  
mm Duckweed  
nn Water Parsnip  
oo Marsh Fleabane  
pp Umbrella Sedge

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