MATHEWS COUNTY TIDAL MARSH INVENTORY

Special Report No. 47 in Applied Science and Ocean Engineering

Gene M. Silberhorn

VIRGINIA INSTITUTE OF MARINE SCIENCE
Gloucester Point, Virginia 23062
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Dr. William J. Hargis, Jr., Director

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Acknowledgments

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Table of Contents

Introduction

This is the second in a series of marsh inventory reports from the Wetlands Section at the Virginia Institute of Marine Science. The first report, Lancaster County Tidal Marsh Inventory, was published December 1973. This report follows the same format of that report.

Under Section 62.1-13.4 of the Wetlands Act, the Virginia Institute of Marine Science is obligated to inventory the tidal wetlands of the Commonwealth. This inventory is designed to assist and inform managers and concerned citizens in their quest to conserve the wetlands in their immediate area.

Forthcoming soon, will be the Coastal Wetlands of Virginia, Interim Report No. 3, which will include guidelines for the evaluation of wetlands.

It is our desire that this report and the soon to be published guidelines will be helpful to those concerned with this most valuable resource.

Methods

Field notes were taken and vegetation maps of 66 marshes were drawn in the field. These maps offer a visual characterization of vegetation patterns and community zonation of various marshes which will be useful in evaluating wetlands. Aerial photographs and topographic maps were consulted in order to obtain wetland locations and basic composition of the vegetation. Acreages and outlines were obtained from these sources as well as from field estimates.

Marshes 1/4 of an acre or larger are designated by number. Many marshes smaller than 1/4 acre (usually narrow fringing marshes) are designated by the same symbol (solid black) as the larger marshes on the section maps. Information such as individual marsh acreage, marsh type (plant community) percentage and acreage, water-marsh interface, interface marsh

area ratio and other observations are recorded in tabular form. Subtotals of individual marshes and marsh types are recorded according to sections and subdivisions of these sections.

The tables, for the most part, are self-explanatory. The terms water-marsh interface and interface marsh area ratio require some explanation. The first term, water-marsh interface, is the linear length in feet that a marsh fronts on a tidal river, stream or channel that is at least 40 feet wide, the minimum width that can be measured on a topographic map. This factor is important for management purposes in that marshes that are contiguous to tidal waters are considered to be of high value as detritus contributors to the marine food web. Also, marshes that have a shoreline interface that is favorably comparable to its total area are of high value. For example, a three acre marsh fronting on 3,000 feet of tidal water is more desirable than a three acre marsh with only 300 feet of shoreline. Therefore, the interface marsh area ratio is another parameter which should be considered in estimating a value of a marsh. These factors will be utilized by VIMS in the evaluation of all the marshes in Tidewater Virginia after the inventory studies of the entire region are completed.

This report is arranged primarily according to wetland systems organized in sections. The eight sections presented here are largely natural systems such as the North River, East River, Horn Harbor, Winter Harbor, Garden Creek and the Piankatank River. The study begins with marsh number one (1) in the Burke Mill Stream (North River) which is the Mathews-Gloucester County line. Continuing from this point, the marshes are numbered in sequence along the tidal margin of the county and terminates with marsh number 471 which is on the Mathews-Gloucester County line along the Piankatank River.

For better understanding of Virginia's wetlands and Virginia's Wetlands Act, the following papers are highly recommended.

Local Management of Wetlands
Environmental Considerations
Special Report No. 35
Kenneth Marcellus, George Dawes and
Gene Silberhorn
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

Coastal Wetlands of Virginia Interim Report
Marvin Wass and Thomas Wright, December 1969
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

Coastal Wetlands of Virginia Interim Report No.2
Kenneth Marcellus
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

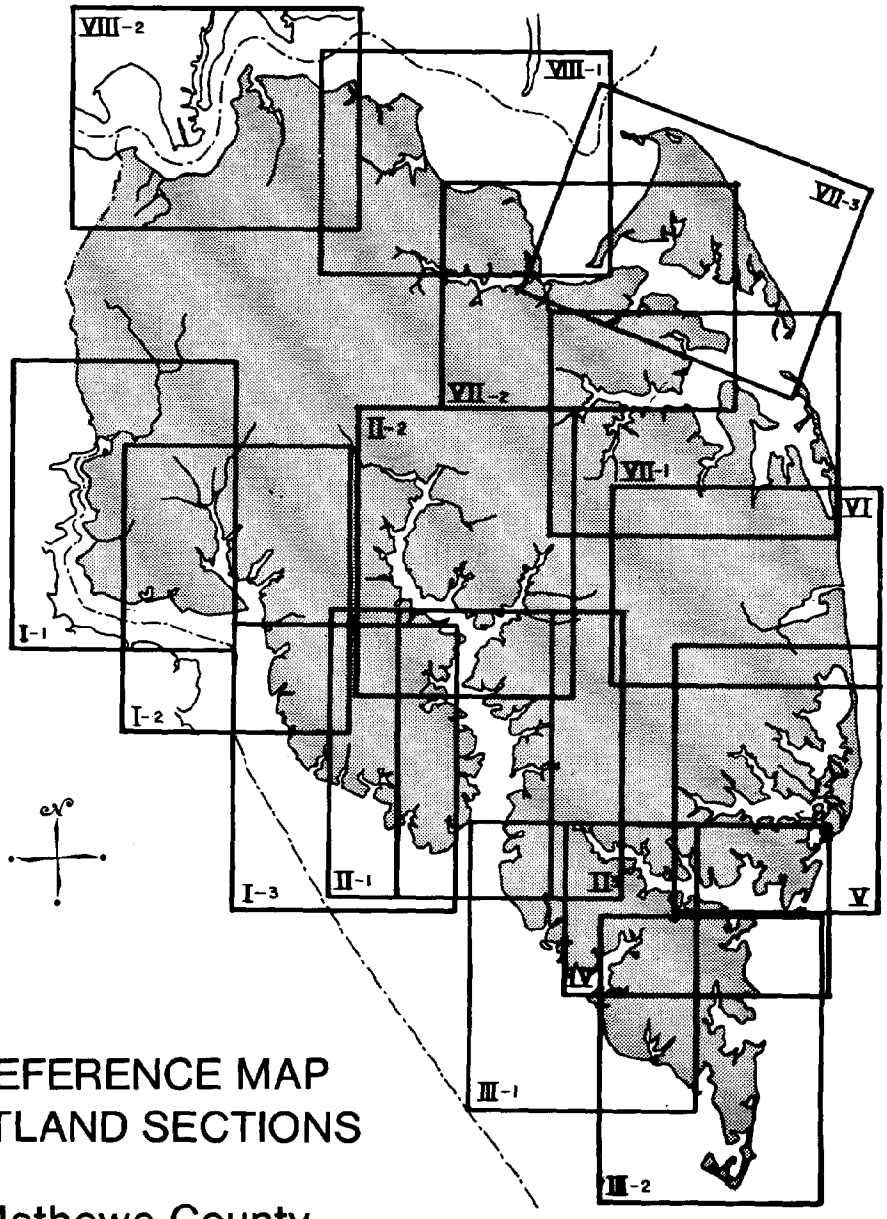
MARSH PLANTS

Appreviations, Common Names and Scientific Names as Found in the Data Tables

Sa	Saltmarsh Cordgrass	Spartina alterniflora Loisel.
Jr	Black Needlerush	Juncus roemerianus Scheele.
Md	Saltgrass Meadow	Saltgrass Distichlis spicata (L.) Greene Saltmeadow Hay Spartina patens (Aiton) Muhl.
Sb	Saltbushes	Marsh Elder Iva frutescens L. Groundsel Tree Baccharis halimifolia L.
Sc	Big Cordgrass	Spartina cynosuroides (L.) Roth.
a	Saltmarsh Bulrush	Scirpus robustus Pursh.
b	Saltmarsh Fleabane	Pluchea purpurascens (Swartz) DC.
c	Saltmarsh Aster	Aster tenuifolius L.
d	Cattail	Typha angustifolia L. Typha latifolia L.
e	Marsh Hibiscus	Hibiscus moscheutos L.
f	Water Hemp	Amaranthus cannabina (L.) J.D. Sauer
g	Switch Grass	Panicum virgatum L.
h	Foxtail Grass	Setaria geniculata (Lam.) Beauvois.
i	Arrow Arum	Peltandra virginica (L.) Kunth.
j	Pickerel Weed	Pontederia cordata L.
k	Reed Grass	Phragmitis communis Trinius.
l	Olney Threesquare	Scirpus olneyi Gray
m	Marsh Mallow	Kosteletskya virginica (L.) Presl.

MARSH PLANTS (Continued)

n	Saltmarsh Loosestrife	*Lythrum lineare* L.
o	Smartweed	*Polygonum* spp.
p	Wild Rice	*Zizania aquatica* L.
q	Sea Lavender	*Limonium carolinianum* (Walter) Britton.
r	Marsh Pink	*Sabatia stellaris* Pursh.
s	Saltwort	*Salicornia* spp.
t	Sea Oxeye	*Borrichia frutescens* (L.) DC.
u	Fimbristylis	*Fimbristylis spadicea* (L.) Vahl.



REFERENCE MAP
WETLAND SECTIONS

Mathews County

SECTION I

North River

The North River Marsh System is subdivided into three parts:

Part 1 - Upper Part of the North River
Part 2 - Blackwater Creek Area
Part 3 - Mouth of the North River

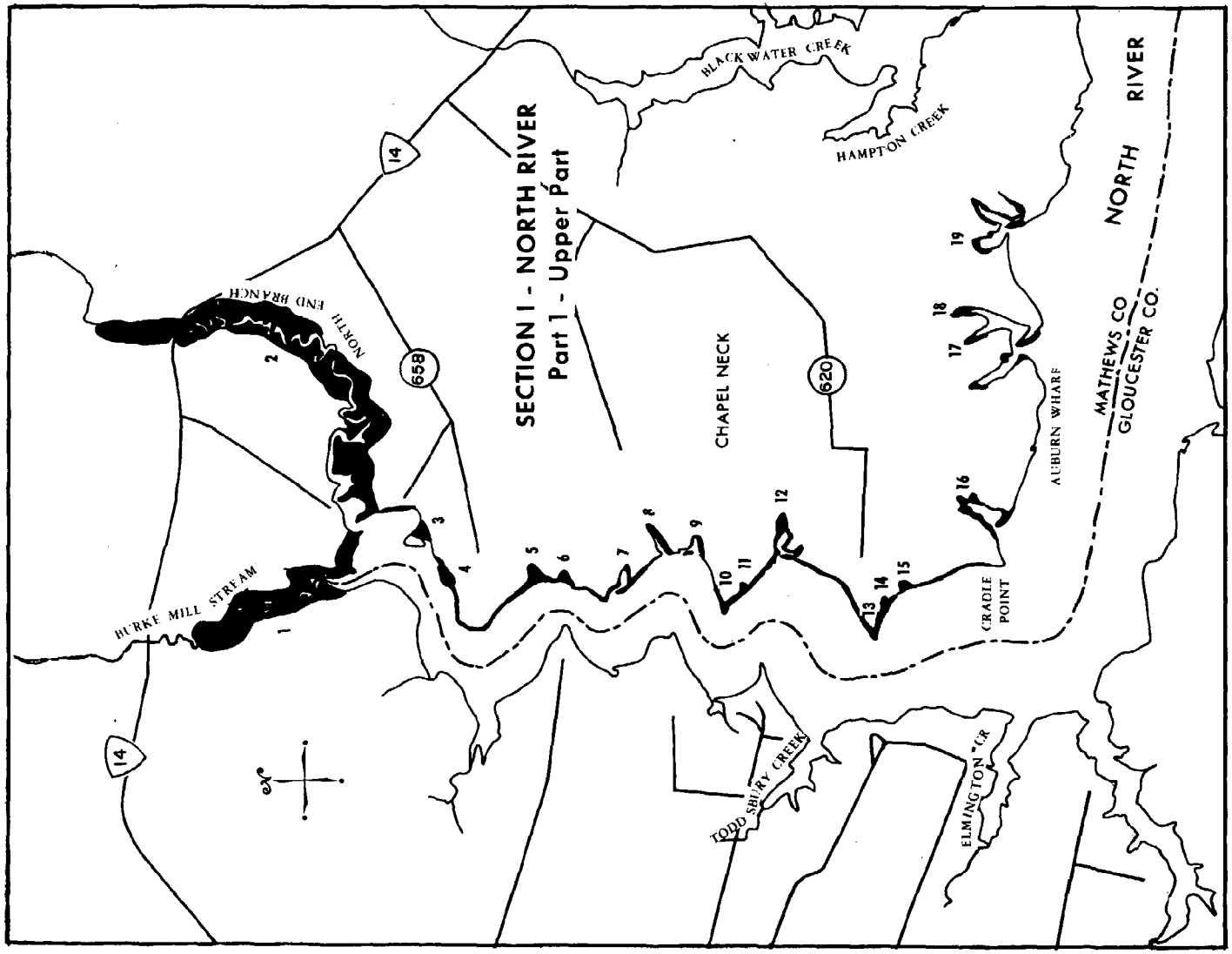
This section contains approximately 260 acres of marsh. The largest marshes in this drainage system occur near the headwaters of the North River, the Burke Mill Stream (1) and the North End Branch (2). These two marshes, containing 127 acres constitute well over one half of the wetland acreage in the system. The wetlands are vegetatively diversified brackish water marshes. They are characterized by large monospecific stands of black needlerush (Juncus roemerianus) near the mouth of the creeks, saltgrass meadow communities (saltgrass Distichlis spicata and saltmeadow hay Spartina patens) about midway up the creeks with big cordgrass (Spartina cynosuroides) and saltbushes (Iva frutescens - Baccharis halimifolia) near the upper ends of the two creeks. Near the lower ends of the creeks the margins support a narrow band of saltmarsh cordgrass (Spartina alterniflora). Farther up the creeks, the edges of the channels are slightly elevated and are vegetated by fringing saltbushes. The channels of the two creeks range from one foot in depth near the mouth to 4 to 5 feet farther up the creeks. The depth increases from 8 to 10 feet at the sharp bends of the meandering system.

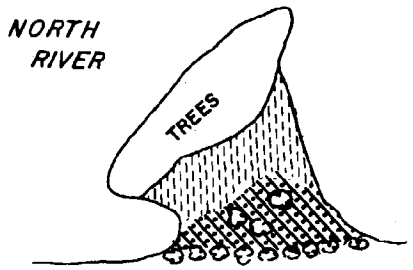
Most of the other marshes in the North River are fringing marshes or small pocket marshes in coves.

Relatively broad fringing marshes typify the wetlands in the Hampton-Blackwater Creek system. Marsh zonation is very much evidenced here. In the intertidal zone saltmarsh cordgrass dominates, at elevations above this, washed only by spring tides, is the saltgrass meadow community, at a still higher elevation, only a matter of inches, is the saltbush community which is the ecotone or transition zone between upland vegetation and the marsh.

A large, apparently unnatural stand of switch grass (approximately 6

acres) is found at the mouth of Godsey Creek. This habitat may have been artifically created by dredge spoil. A broad extensive fringing marsh (62) at the mouth of the North River is suffering from erosion at its southeastern margin.





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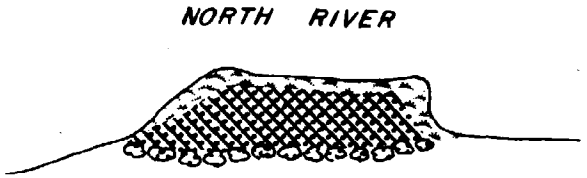
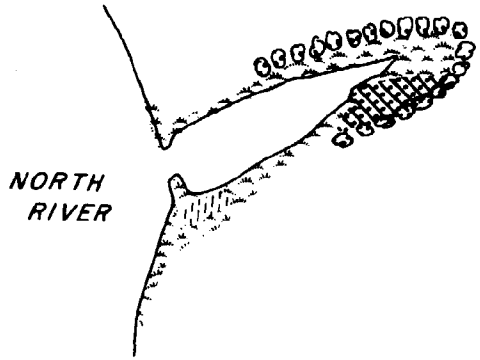


NO. 4

SALTMARSH CORDGRASS
SALTMEADOW HAY-SALTGRASS
BLACK NEEDLERUSH
SALTBUSH



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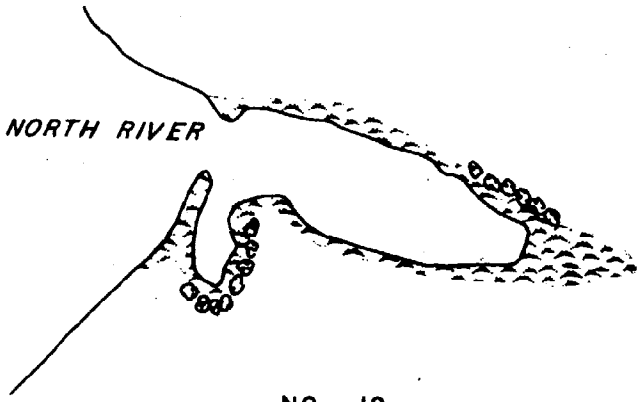


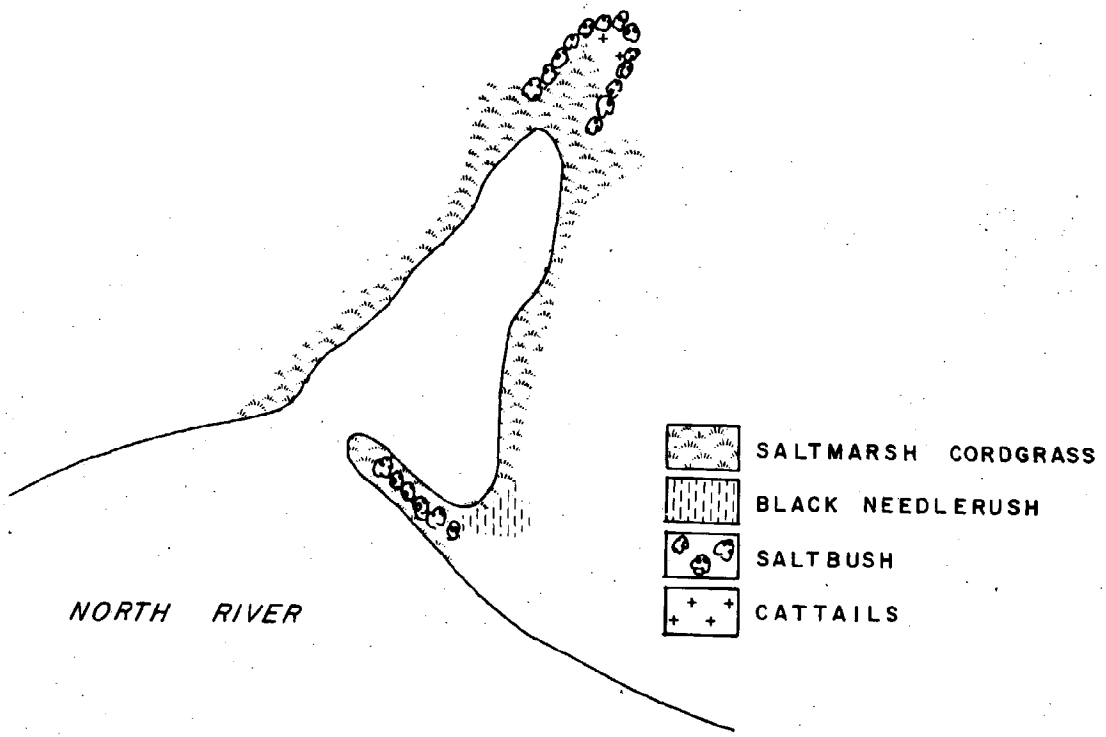
NO. 12

Section I. North River. Part 1. Upper Part.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
1	Burke Mill Stream	44	5	2.2	15	6.6	30	13.2	10	4.4	40	17.6			5,000	114	deep channels
2	North End Branch	83	10	8.3	30	24.9	30	24.9	10	8.3	20	16.6			10,200	113	deep channels
3	Upper North River	1.5	5		50	.75	40	.6	5	.6					400	266	
4	Upper North River	2	15	.3			75	1.5	10	.2					450	225	
5	Upper North River	.75	50	.4	20	.1			15	.1			d 15		200	266	
6	North River	1	40	.4	30	.3	15	.1	15	.1					200	200	
7	North River	.75	50	.4	30	.2			10		10				1,000	1,333	
8	North River	.5	30	.1	20	.1	30	.1			20	.1			800	1,600	
9	North River	.75	40	.3	40	.3			20	.1					400	533	dredging and bulkhead
10	North River	.75	40	.3	40	.3			20	.1					400	533	
11	North River	.5	5		5		80	.4	10						150	300	
12	North River	.75	90	.7					10						1,400	1,866	
13	North River	1	20	.2	20	.2	50	.5	10	.1					400	400	
14	North River	.25	20		20		60	.1							200	800	

Water Interface (ft.)**Interface/Area Ratio (Feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis


NORTH RIVER
SALTMARSH CORDGRASS
BLACK NEEDLERUSH
SALTBUSH
CATTAILS

NO. 16

Section I. North River. Part 1. Upper Part.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
15	North River	.25	80	.2	10				10						200	800	
16	Cradle Pt.	.75	70	.5	10				10				d 10		1,700	2,266	
17	Auburn Wharf	.33	100	.3											200	600	
18	Auburn Wharf	.5	90	.4					10						200	400	
19	Near Auburn Wharf	1.5	90	1.3					10						400	266	brush fill
	Sub-total Section I Part 1	140.8		16.3		33.7		40.8		13.9		34.3					

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
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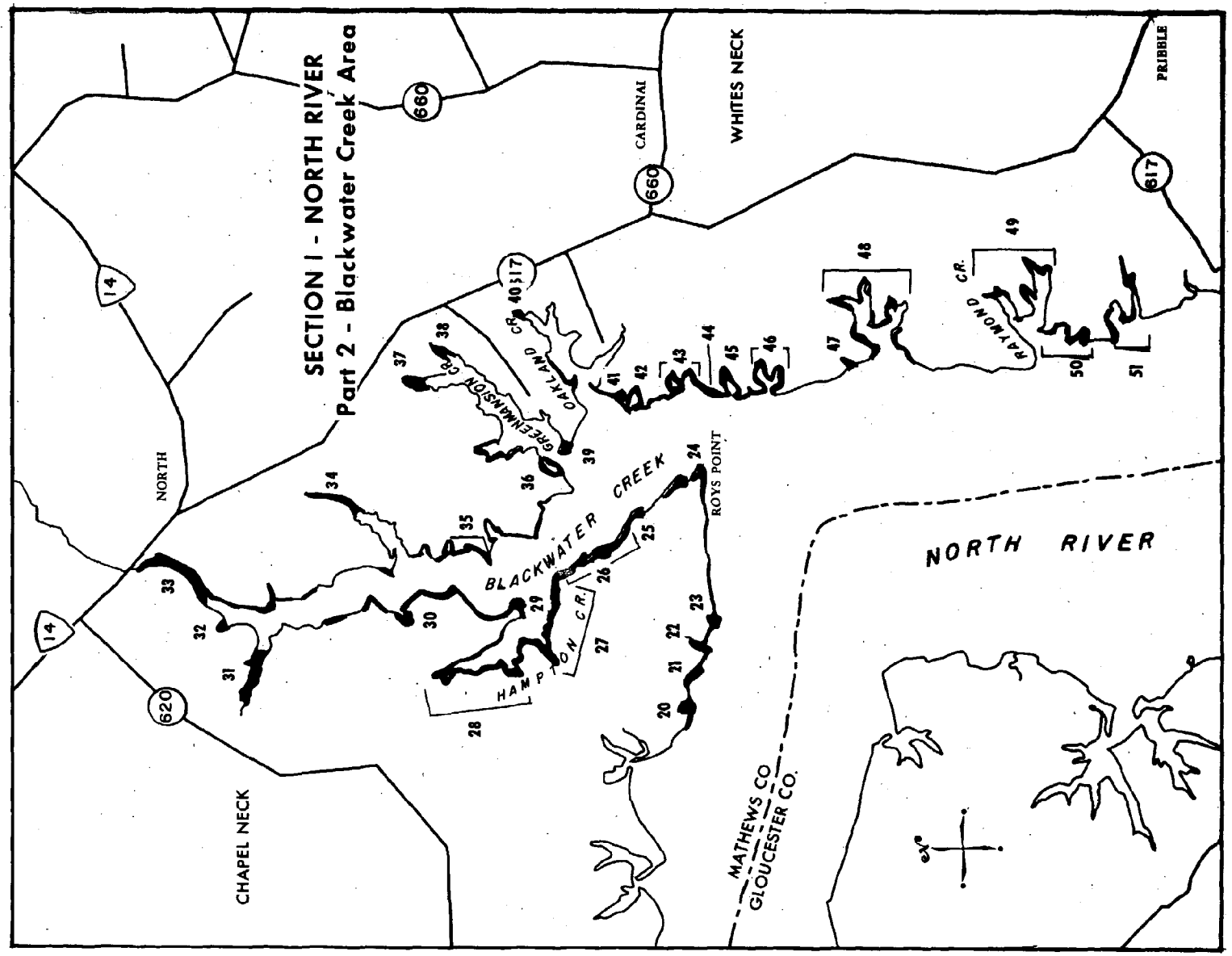
SECTION I - NORTH RIVER
Part 2 - Blackwater Creek Area
NORTH RIVER
BLACKWATER CREEK
HAMPTON CR.
GREENHAMSTON CR.
OAKLAND CR.
RAYMOND CR.
ROYS POINT
CARDINAL
WHITES NECK
PRIBBLE
NORTH
CHAPEL NECK
MATHEWS CO.
GLOUCESTER CO.
660
617
14
620

Section I. North River. Part 2. Blackwater Creek Area.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
20	Near Roy's Pt.	3	80	2.4			10	.3	10	.3					200	66	
21	Near Roy's Pt.	3	40	1.2			40	1.2	20	.6					400	133	
22	Near Roy's Pt.	3	80	2.4					20	.6					200	66	
23	Near Roy's Pt.	2					50	1	50	1					200	100	erosion
24	Roy's Pt.	3.5	40	1.4			30	1	30	1					1,000	286	
25	Mouth Blackwater Cr.	.5	10				70	.3	20	1					300	600	
26	Blackwater Cr.	4	10	.4			60	2.4	30	1.2					1,700	425	fringing marsh
27	Hampton Cr.	5	30	1.5			50	2.5	20	1.0					1,600	320	
28	Upper Hampton Cr.	2	90	1.8					10	.2					2,800	1,400	
29	Mouth Hampton Cr.	.75	40	.3			30	.2	30	.2					300	400	
30	Blackwater Cr.	.33	70	.2					30	.1					200	600	
31	Upper Blackwater Cr.	4	85	3.4			5	.2	10	.4					1,400	350	
32	Upper Blackwater Cr.	.5	60	.3					40	.2					300	600	
33	Upper Blackwater Cr.	8	75	6			15	1.2	5	.4			d 5	.4	2,100	262	

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

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Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleebane
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f = Water Hemp
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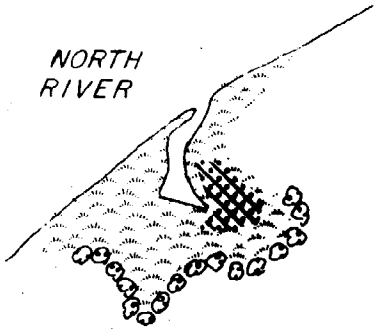

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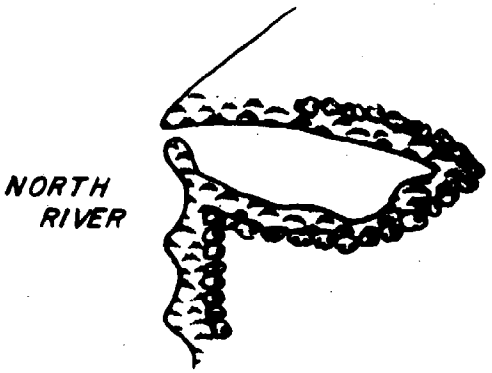

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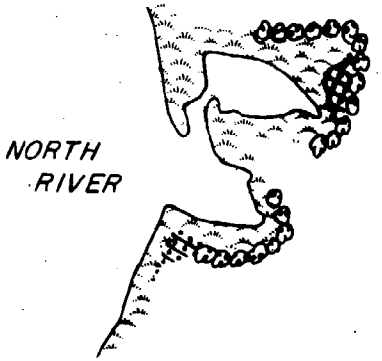

NO. 43

SALTMARSH CORDGRASS

SALTMEADOW HAY – SALTGRASS

SALTBUSH

Section I. North River. Part 2. Blackwater Creek Area.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
34	Blackwater Cr.	4	90	3.6			5	.2	5	.2					1,000	250	
35	Blackwater Cr.	1	10	.1	70	.7	10	.1	10	.1					1,250	1,250	
36	Mouth Green Mansion Cove	.5	90	.45					10						1,200	2,400	
37	Upper Green Mansion Cove	3.5	90	3.1					10	.3					200	57	
38	Upper Green Mansion Cove	3.5	100	3.5											200	57	
39	Mouth Green Mansion Cove	.5	100	.5											600	1,200	
40	Upper Oakland Cr.	.25	90	.2					10						150	600	
41	Mouth Oakland Cr.	.5	70	.3			15		15						1,000	2,000	
42	Mouth Oakland Cr.	.5	80	.4					20	.1					800	1,600	
43	Mouth Blackwater Cr.	1.5	80	1.2			10	.1	10	.1					1,000	666	
44	Mouth Blackwater Cr.	.5	80	.4					20	.1					400	800	
45	Mouth Blackwater Cr.	3	80	2.4			10	.3	10	.3					600	200	
46	Mouth Blackwater Cr.	.5	80	.4			10		10						1,200	2,400	fence in creek and marsh
47	Above Raymond Cr.	.5	40	.2			40	.2	20	.1					100	200	

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
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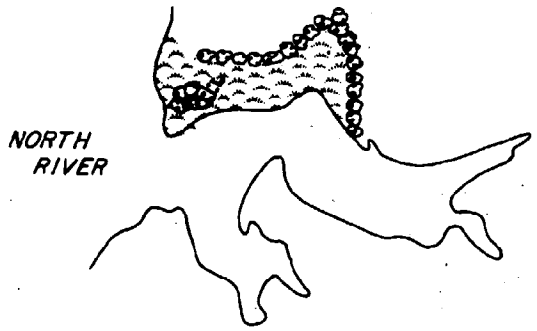
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis



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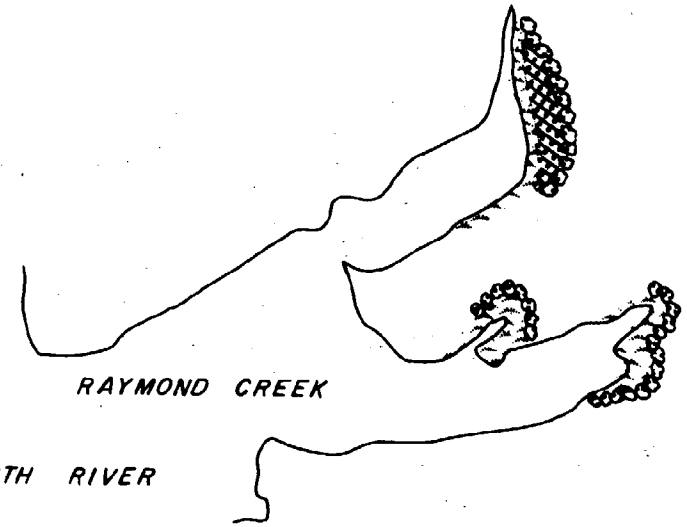

SALTMARSH CORDGRASS

SALTMEADOW HAY - SALTGRASS

SALTBUSH

NO. 49

Section I. North River. Part 2. Blackwater Creek Area.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
48	Above Raymond Cr.	.75	60	.4			10		30	.2					800	1,066	
49	Raymond Cr.	.5	60	.3			40	.2							1,000	2,000	
50	Raymond Cr.	.75	50	.4			30	.2	20	.1					1,200	1,600	
51	Sibley Cr.	1.5	40	.6			30	.4	30	.4					1,200	800	
	Sub-total Section I Part 2	63.3		39.75		.7		12.0		10.2				.4			

*Water Interfece (ft.) **Interfece/Area Ratio (feet/scre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meedow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
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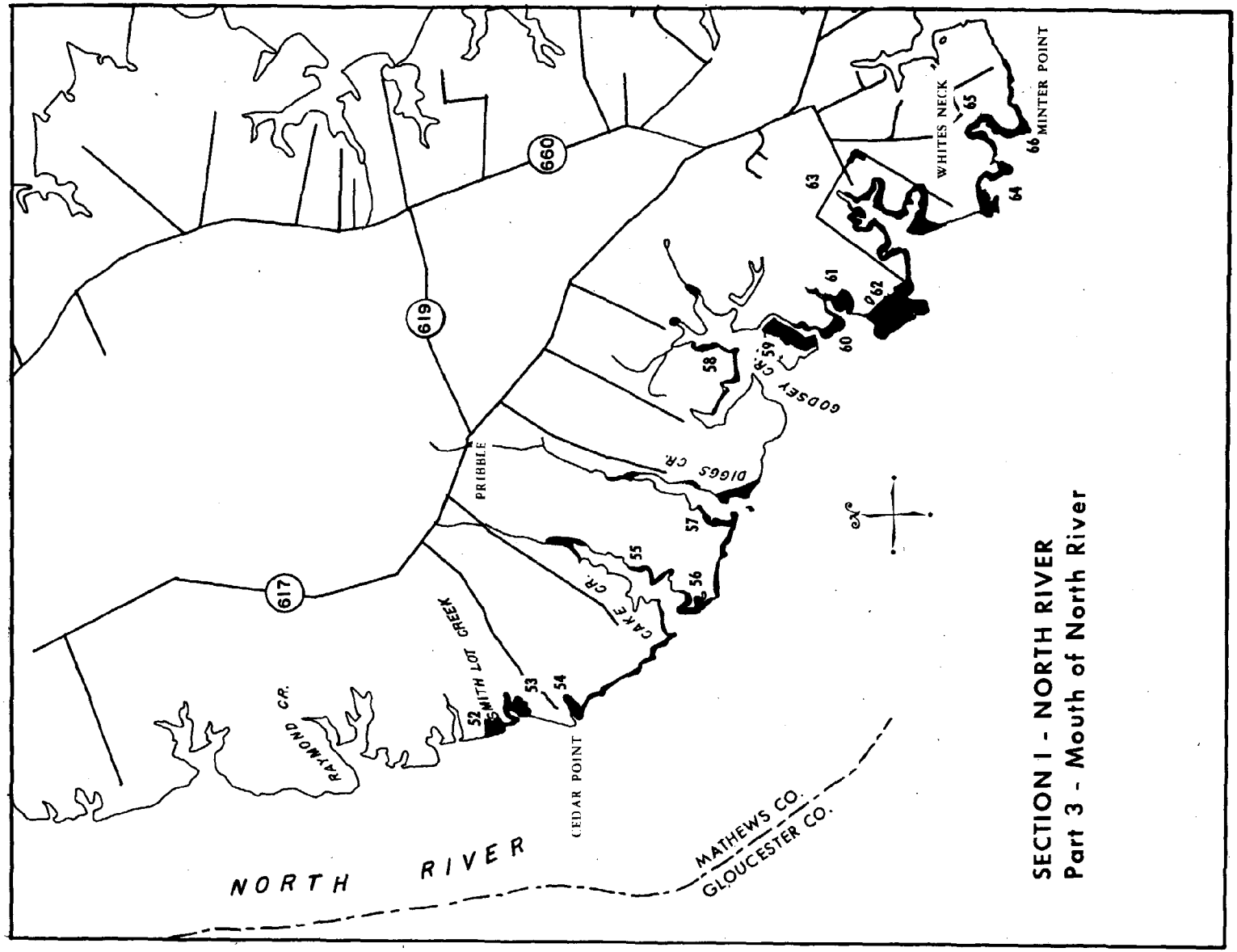
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis

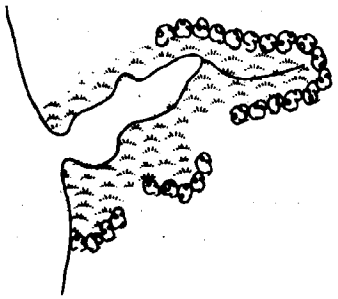

SECTION I - NORTH RIVER
Part 3 - Mouth of North River
NORTH RIVER
MATHEWS CO.
GLOUCESTER CO.
CEDAR POINT
RAYMOND CR.
SMITH LOT CREEK
CAKE CR.
PRIBBLE
DIGGS CR.
GODSEY CR.
WHITES NECK
MINTER POINT
617
619
660
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66

NO. 52

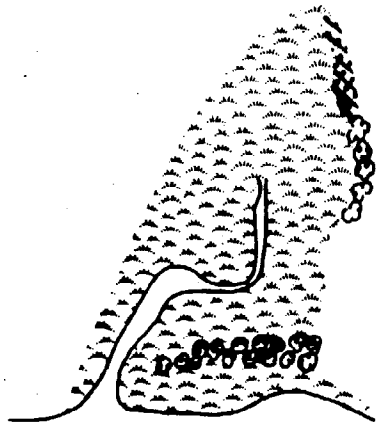
SALTMARSH CORDGRASS

SALTMEADOW HAY - SALTGRASS

SALTBUSH



NO. 53



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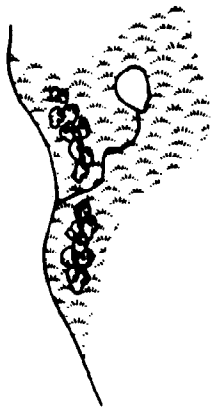


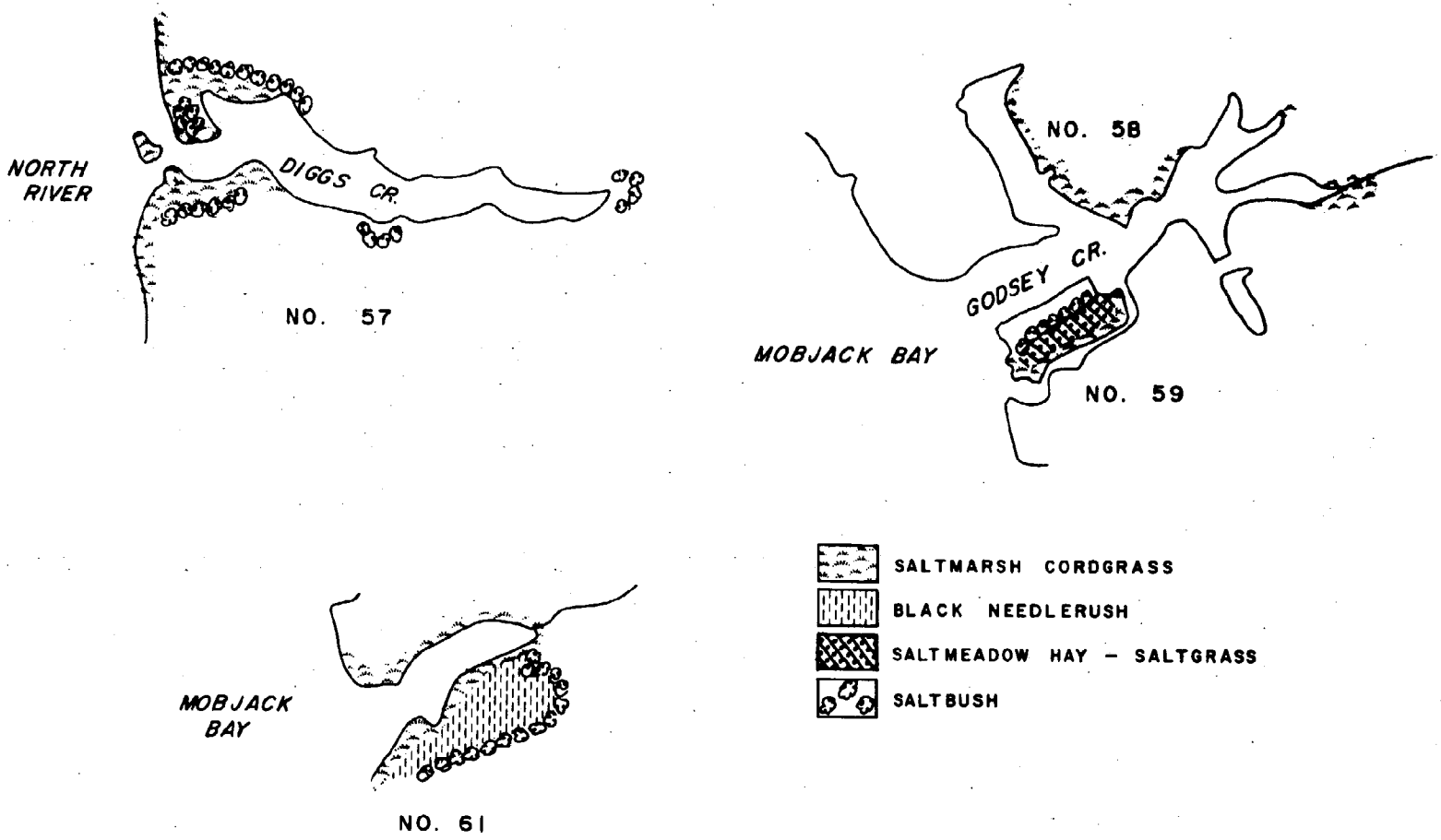
NO. 56

Section I. North River. Part 3. Mouth of North River

#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres			
52	Near Smith Lot Cr.	2.5	70	1.7			20	.5	10	.2					1,000	400	
53	Smith Lot Cr.	2	80	1.6					20	.4					800	400	
54	Cedar Pt.	3	80	2.4			15	.4	5	.1					300	100	
55	Cakes Cr.	1	80	.8					20	.2					600	600	
56	Cakes Cr.	2	70	1.4					30	.6					200	100	

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis


NORTH RIVER
DIGGS CR.
NO. 57
NO. 58
GODSEY CR.
MOBJACK BAY
NO. 59
MOBJACK BAY
NO. 61
SALTMARSH CORDGRASS
BLACK NEEDLERUSH
SALTMEADOW HAY - SALTGRASS
SALTBUSH

Section I. North River. Part 3. Mouth of North River.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
57	Diggs Cr.	1.5	60	.9					40	.6					1,000	666	
58	Godsey Cr.	.5	90	.4					10						2,000	4,000	fringe
59	Godsey Cr.	4	10	.4			80	3.2	10	.4					1,200	300	dredged channel
60	Godsey Creek Area	1	40	.4			20	.2	40	.4					800	800	
61	Godsey Creek Area	5	15	.7	70	3.5			15	.7					1,000	200	
62	Godsey Creek Area	12	35	4.2	10	1.2	50	6	5	.6					2,200	183	
63	Godsey Creek Area	14	20	2.8	30	4.2	30	4.2	20	2.8					9,000	643	extensive fringe
64	Minter Pt. Area	4	60	2.4	5	.2	30	1.2	5	.2					1,200	300	
65	Minter Pt. Area	2	50	1			20	.4	30	.6					1,200	300	fringe
66	Minter Pt.	1.5	60	.9					40	.6					600	400	
	Sub-total Section I Part 3	56		22		9.1		16.1		8.4							
	Total Section I	260.1		78.0		43.5		68.9		32.5		34.3		.4			

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis

SECTION II

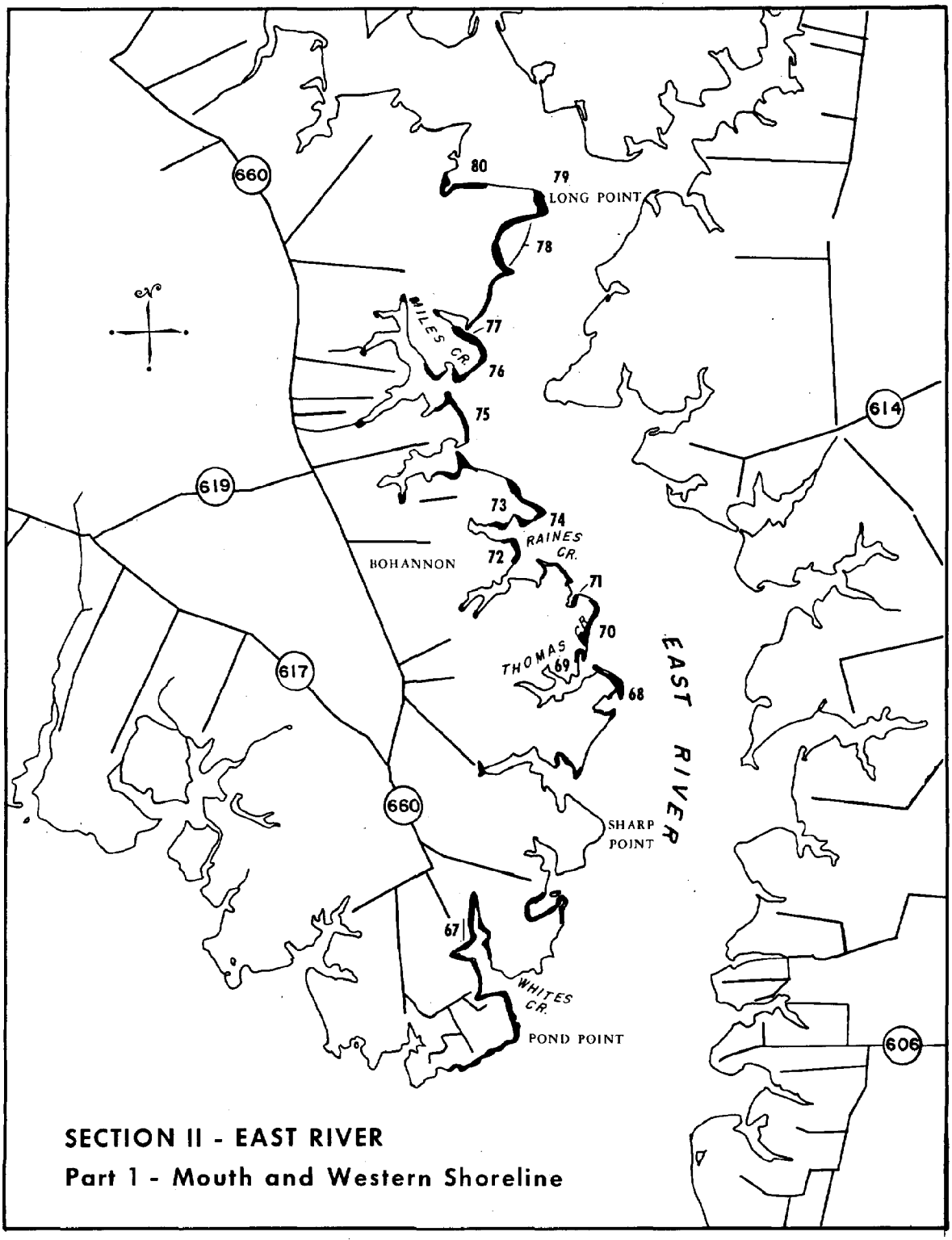
East River

This rather large system reaches far into the interior of Mathews County, the headwaters of which are dominated by two branching creek marshes. These two marshes (Nos. 103 and 105) constitute 87 acres of mainly saltgrass meadows and black needlerush stands.

Most of the other marshes in this drainage system are small cove and narrow fringing marshes. The dominant community type in this system is black needlerush (80 acres), followed by saltmarsh cordgrass (37 acres), saltgrass meadow (28 acres), saltbush (24 acres) and big cordgrass (7 acres).

The greatest bulk of the black needlerush community type in this system (nearly 50 acres) occurs in the above mentioned marshes (103, 105) at the head of the East River.

Two marshes have been dredged in the area near William's Wharf. Marsh number 136 was recently dredged at the time of observation (March 13, 1973). Marsh areas were also dredged in an unnamed creek above Weston Creek (140). Foreseeing that activities such as this may occur in the near future, many sketches of small marshes are included in this section.



SECTION II - EAST RIVER

Part 1 - Mouth and Western Shoreline

Section II. East River. Part 1. Mouth and Western Shoreline.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
67	Whites Cr.	2	90	1.8					10	.2					1,800	900	
68	Thomas Cr.	.5	80	.4	5				15						1,000	2,000	
69	Thomas Cr.	.25	present		--------- dredged --------				present						400	1,600	dredged to 4-5'
70	Thomas Cr.	.5	70	.35	10				20	.1					800	1,600	
71	Near Reines Cr.	.25	40	.1	30				30						300	1,200	
72	Raines Cr.	.5	80	.4					20	.1					600	1,200	
73	Raines Cr.	.5	80	.4					20	.1					400	800	
74	Raines Cr.	.25	90	.2					10						200	800	
75	Miles Cr.	.25	40	.1	60	.1									400	1,600	
76	Miles Cr.	.25	85	.2					15						400	1,600	
77	Cove above Miles Cr.	.5	50	.2	25	.1			25	.1					400	800	
78	Near Long Pt.	1.5	10	.1	70	1.			20	.3					1,400	933	
79	Long Pt.	1.5	35	.5	60	.9			5						800	533	
80	Above Long Pt.	1	35	.3	60	.6			5						800	800	

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

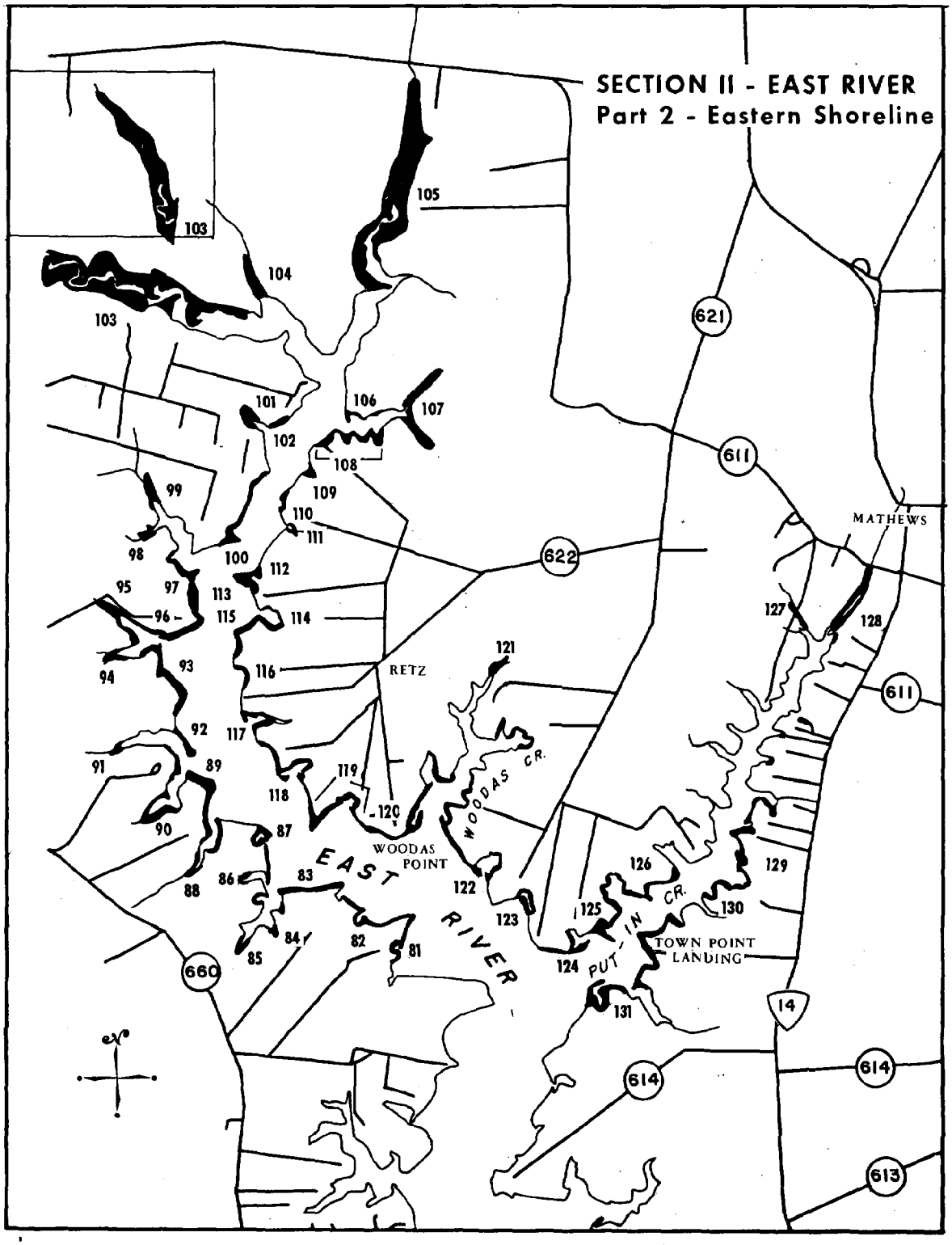
Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleebane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis

Section II. East River. Part 1. Mouth and Western Shoreline.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
	Sub-total Section II Part 1	9.50		5		2.7				.9							

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis


SECTION II - EAST RIVER
Part 2 - Eastern Shoreline
MATHEWS
RETZ
WOODAS POINT
WOODAS CR.
EAST RIVER
PUT IN CR.
TOWN POINT LANDING
621
611
622
660
14
614
613
103
104
105
101
102
106
107
108
109
110
111
112
113
114
115
116
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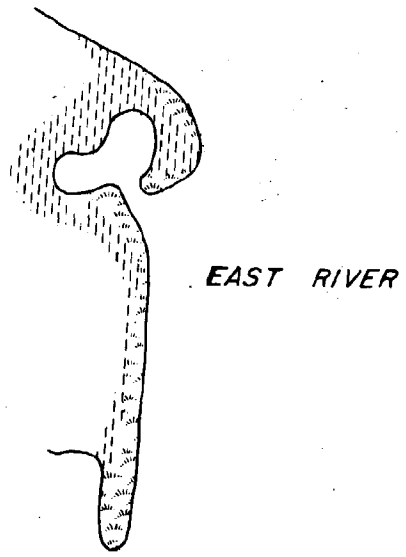

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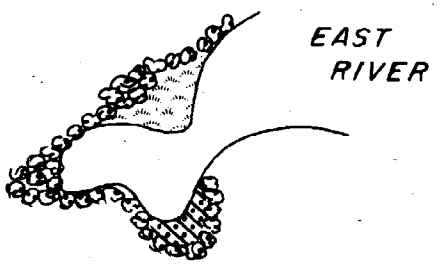

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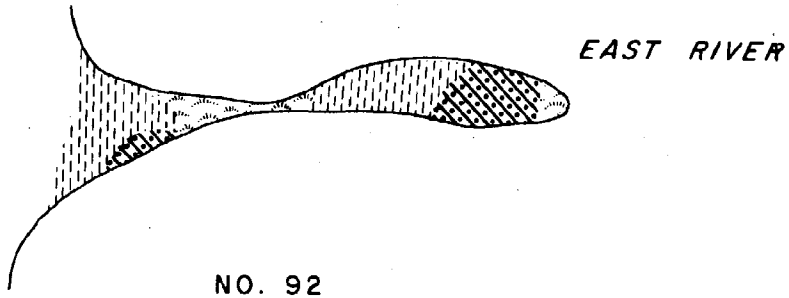


NO. 92

SALTMARSH CORDGRASS

BLACK NEEDLERUSH

SALTMEADOW HAY – SALTGRASS

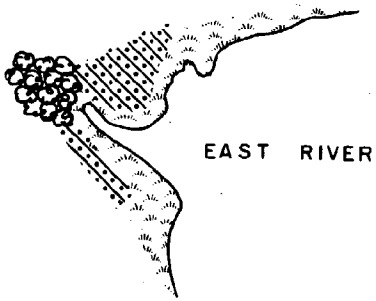
SALTBUSH

Section II. East River. Part 2. Upper Part.

#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres			
81	Western Shoreline	.5	40	.2	10				50	.2					1,000	2,000	
82	Western Shoreline	.5	20	.1	30	.1	20	.1	30	.1					400	800	
83	Western Shoreline	.75	10		90	.7									1,000	1,333	
84	Western Shoreline	.25			30				60	.1			g 10		100	400	
85	Western Shoreline	.75	60	.4					40	.3					200	266	
86	Western Shoreline	.25	20						80	.2					200	800	
87	Western Shoreline	1	20	.2	80	.8									1,400	1,400	
88	Western Shoreline	.5	50	.2					50	.2					800	1,600	
89	Western Shoreline	.75			100	.75									600	800	
90	Western Shoreline	1	30	.3			.20	.2	50	.5					800	800	
91	Western Shoreline	.75	50	.4					50	.4					400	533	
92	Western Shoreline	.5			50	.2	40	.2	10						800	1,600	
93	Western Shoreline	2.5	15	.4	80	2			5	.1					1,200	480	
94	Western Shoreline	.75	30	.2	40	.3			30	.2					400	533	

*Water Interface (ft.) **Interfsce/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis



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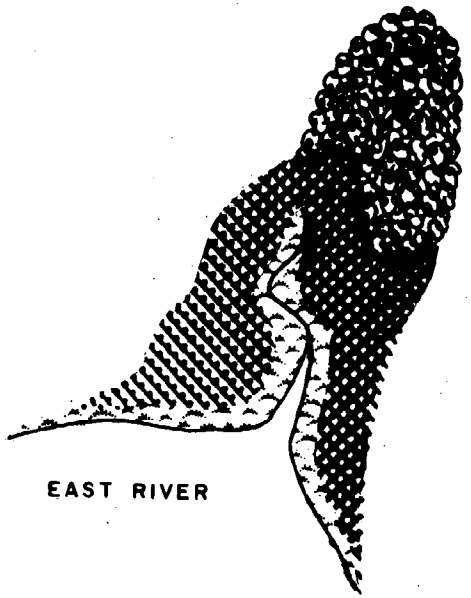


NO. 99

SALTMARSH CORDGRASS

SALTMEADOW HAY – SALTGRASS

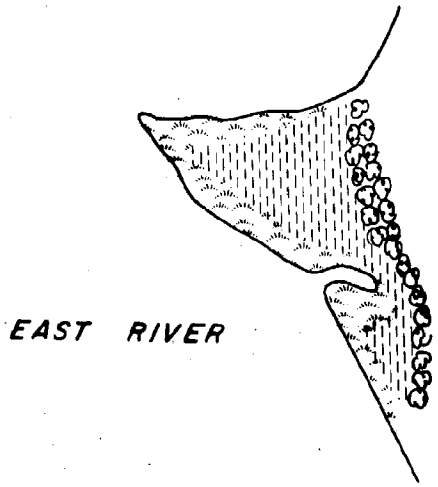
SALTBUSH

Section II. East River. Part 2. Upper Part

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
95	Western Shoreline	1	15	.1	70	.7			15	.1					800	800	
96	Western Shoreline	.25	40	.1	60	.1									250	1,000	
97	Western Shoreline	.5			80	.4			20	.1					1,000	2,000	fringing marsh
98	Western Shoreline	.75	30	.2			50	.4	20	.1					400	533	
99	Western Shoreline	2.5	10	.2			50	1.2	40	1.					600	240	
100	Western Shoreline	.5	30	.1			40	.2	30	.1					600	1,200	
101	Western Shoreline	.5	40	.2	30	.1			30	.1					200	400	
102	Western Shoreline	.5	60	.6			10		30	.1					400	800	
103	Upper Western Br.	60			60	36	20	12	10	6.	10	6.			15,800	263	Sa,d
104	Upper Western Br.	3.5			10	.3	30	1.	60	2.1					900	257	
105	Northern Br.	27	15	4	50	13.5	25	6.7	10	2.7					9,600	355	Sc
106	Eastern Shoreline	.5	30	.1					70	.4					200	400	
107	Eastern Shoreline	7.5			60	4.5	25	1.9	15	1.1					1,000	133	
108	Eastern Shoreline	3	10	.3	30	.9	30	.9	40	1.2					1,200	400	

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis



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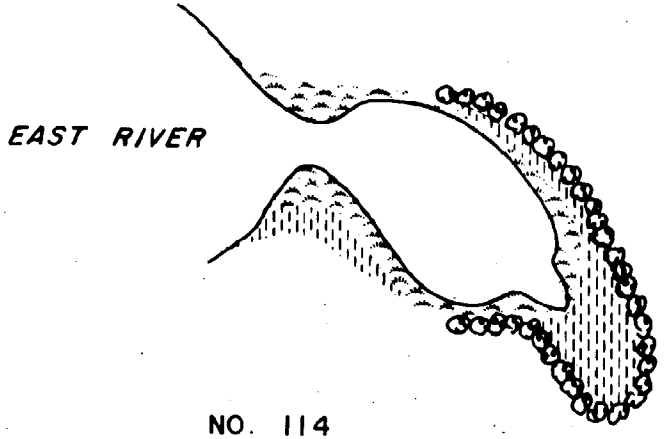

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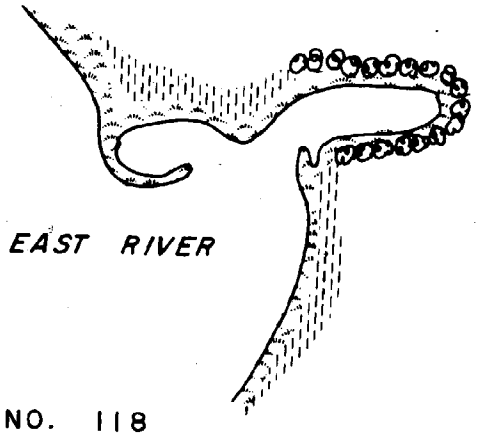


NO. 118

SALTMARSH CORDGRASS

SALTMEADOW HAY — SALTGRASS

SALTBUSH

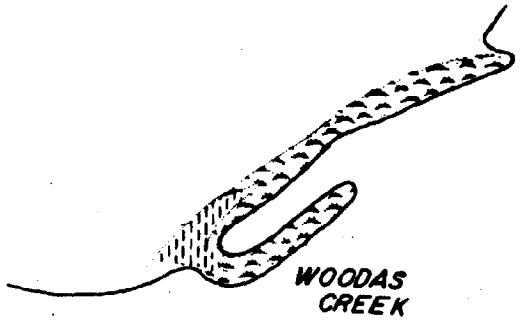
BLACK NEEDLERUSH

Section II. East River. Part 2. Upper Part.

#	Piece Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
109	Eastern Shoreline	.25			10		80	.2	10						150	600	
110	Eastern Shoreline	.25	60	.1	30				10						200	800	
111	Eastern Shoreline	.25	70	.2					30						400	1,600	
112	Eastern Shoreline	.5	40	.2	50	.2			10						200	400	
113	Eastern Shoreline	1	30	.3	60	.6			10	.1					800	800	
114	Eastern Shoreline	.75	30	.2	60	.4			10						1,000	1,333	
115	Eastern Shoreline	1.5	30	.4	70	1.									500	333	
116	Eastern Shoreline	.25	30		70	.2									400	1,600	
117	Eastern Shoreline	.25	60	.1					30				a 10		700	2,800	
118	Eastern Shoreline	.5	40	.2	40	.2			20	.1					1,200	2,400	
119	Eastern Shoreline	3	30	.9	50	1.5			20	.6					1,600	533	
120	Woodas Cr.	.5	70	.3	30	.1									1,200	2,400	*fringing marsh*
121	Woodas Cr.	.5	70	.3	30	.1									400	800	
122	Near Woodas Cr.	.5	50	.2	50	.2									1,000	2,000	

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis



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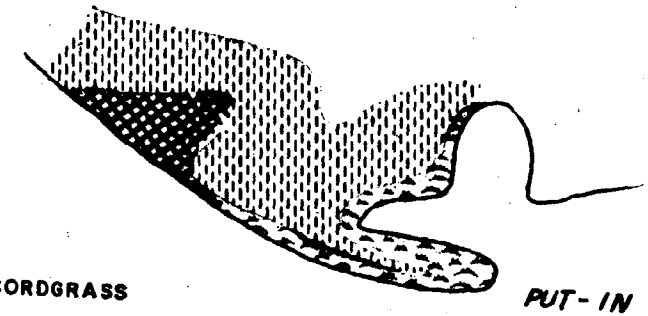
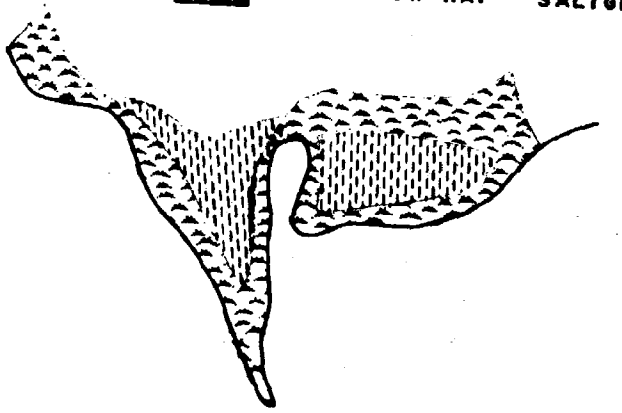


NO. 124

SALTMARSH CORDGRASS

BLACK NEEDLERUSH

SALTMEADOW HAY — SALTGRASS



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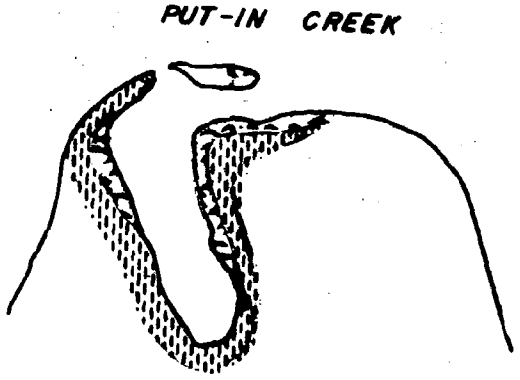


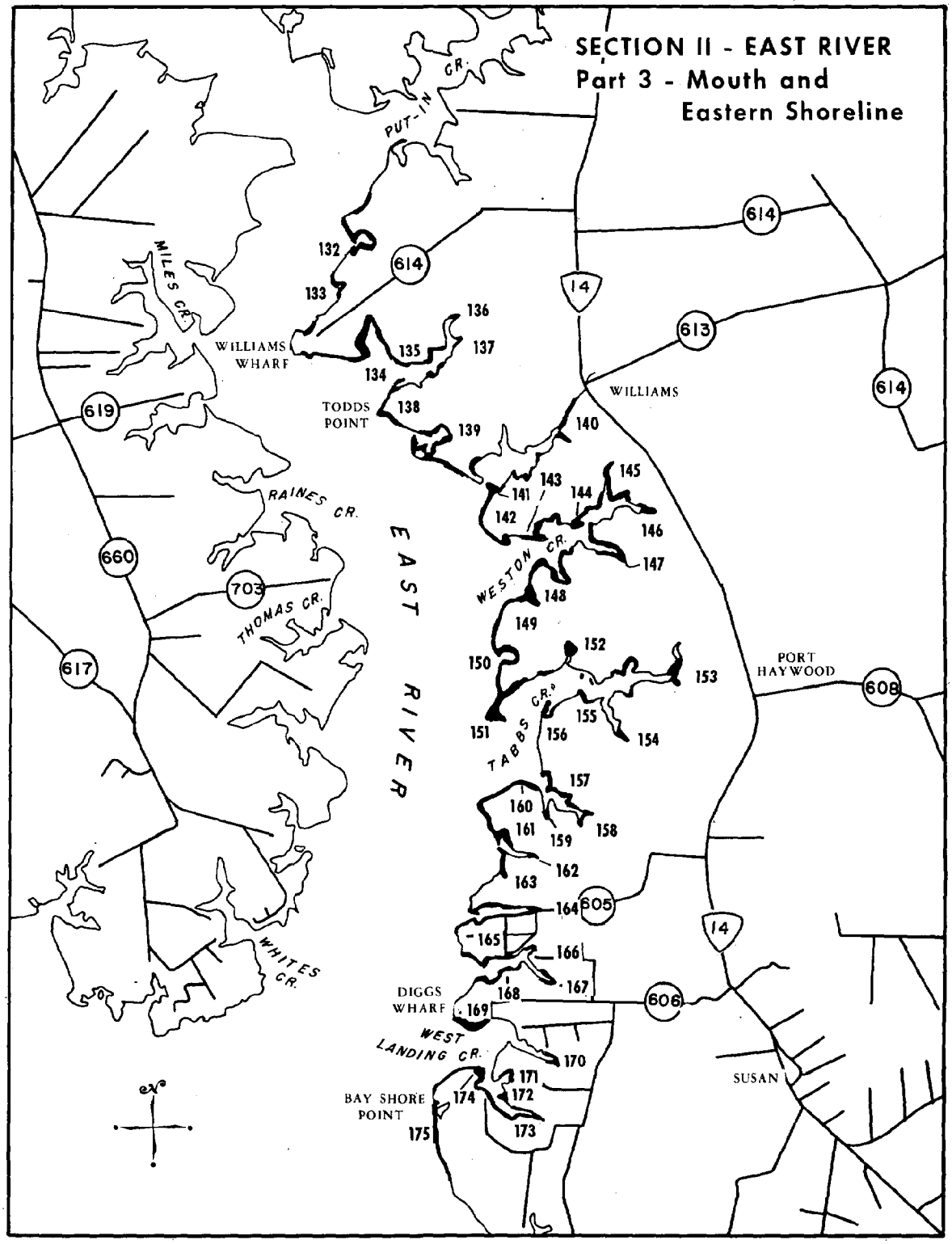
NO. 131

Section II. East River. Part 2. Upper Part.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
123	Near Put-in-Cr.	.75	40	.3	50	.4			10						800	1,066	
124	Mouth Put-in-Cr.	1.5	30	.4	60	.9			10	.1					1,400	933	
125	Put-in-Cr.	1	40	.4	60	.6									1,000	1,000	
126	Put-in-Cr.	.5	40	.2	60	.3									1,200	2,400	
127	Upper Put-in-Cr.	2	10	.2			50	1	40	.8					1,200	600	
128	Upper Put-in-Cr.	3	40	1.2			20	.6	40	1.2							Sb in channel
129	Put-in-Cr.	.25	80	.2	20										600	2,400	
130	Put-in-Cr.	.25	40	.1	40	.1			20						400	1,600	
131	Put-in-Cr.	1	40	.4	60	.6									1,600	1,600	
	Sub-total Section II Part 2	139.		15.1		68.7		26.6		20.3		6.					

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis


SECTION II - EAST RIVER
Part 3 - Mouth and
Eastern Shoreline
PUT-IN CR.
MILES CR.
WILLIAMS WHARF
TODDS POINT
WILLIAMS
RAINES CR.
WESTON CR.
THOMAS CR.
EAST RIVER
TABBS CR.
PORT HAYWOOD
WHITES CR.
DIGGS WHARF
WEST LANDING CR.
BAY SHORE POINT
SUSAN
614
613
14
619
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703
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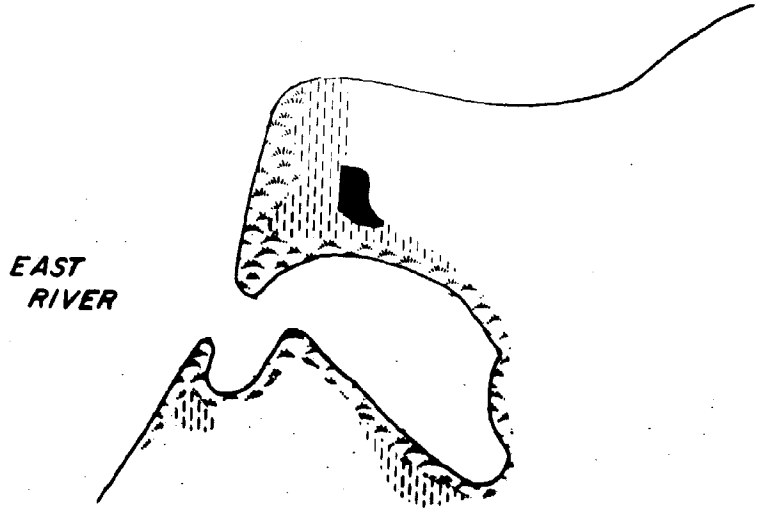

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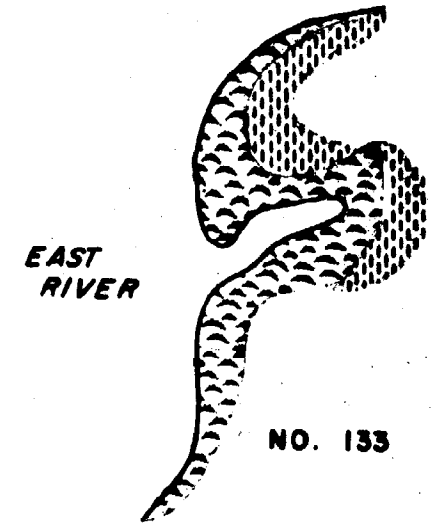

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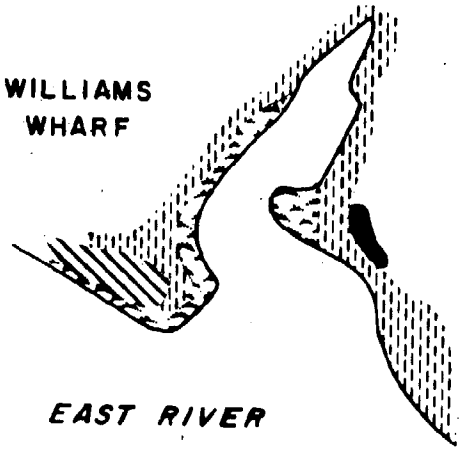

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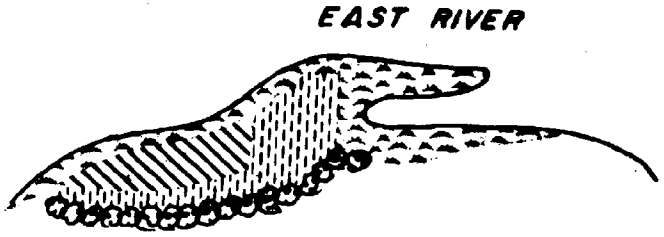


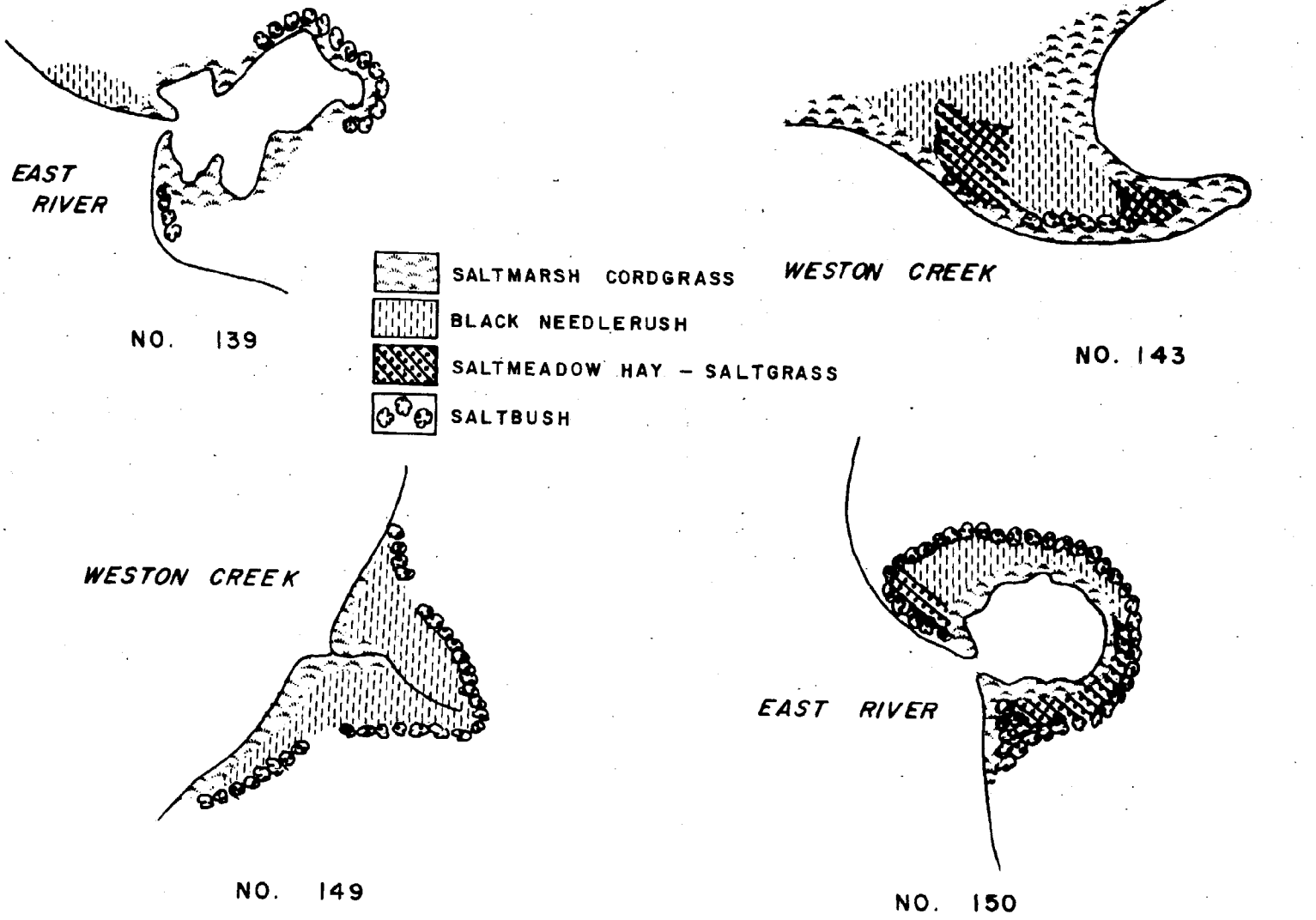
NO. 138

Section II. East River. Part 3. Mouth and Eastern Shoreline.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
132	East River	1.5	40	.6	40	.6					20	.2			1,200	800	
133	Williams Wharf	2	50	1	50	1									600	300	
134	Williams Wharf	3	50	1.5	50	1.5									1,600	533	
135	Williams Wharf Area	.25	70	.2	20				10						300	1,200	
136	Williams Wharf Area	3	---------- Recently dredged 3' to 6' deep, no dike,								Sa, Sp, Jr present -------						
137	Williams Wharf Area	.25	90	.2									d 5 / k 5		100	400	
138	Todd's Pt. Area	1	30	.3	40	.4	20	.2	10	.1					800	800	
139	Below Todd's Pt.	2.5	70	1.7	20	.5			10	.2					1,400	560	
140	Williams Area	3	---------- Dredged 5' to 6' deep, Sa, Sp, Sb present ----------														
141	Williams Area	1	30	.3	60	.6			10	.1					800	800	
142	Weston Cr.	.5	40	.2	40	.2			20	.1					500	1,000	
143	Weston Cr.	.5	30	.1	30	.1	25	.1	15						600	1,200	
144	Weston Cr.	.33	30	.1	50	.2			20						400	825	
145	Weston Cr.	.25	90	.2					10						400	1,600	

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Seltwort
t = Sea Oxeye
u = Fimbristylis

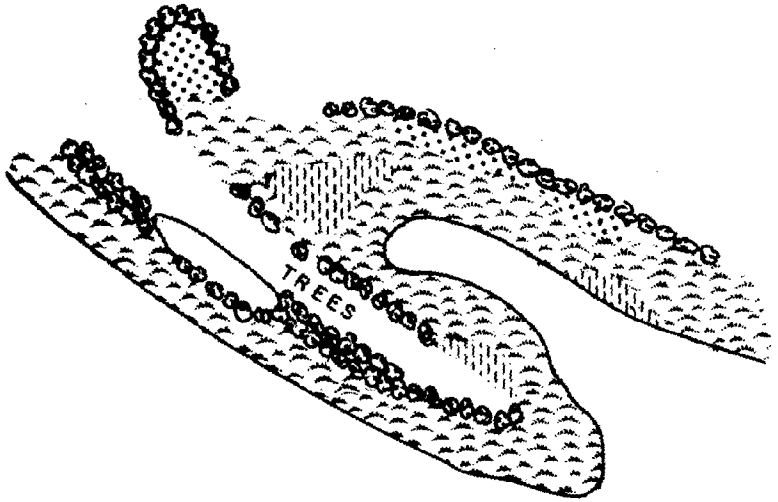

EAST
RIVER
NO. 139
SALTMARSH CORDGRASS
BLACK NEEDLERUSH
SALTMEADOW HAY – SALTGRASS
SALTBUSH
WESTON CREEK
NO. 143
WESTON CREEK
NO. 149
EAST RIVER
NO. 150

Section II. East River. Part 3. Mouth and Eastern Shoreline.

#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres			
146	Weston Cr.	.5	90	.4					10						500	1,000	
147	Weston Cr.	.5	40	.2	50	.2			10						400	800	g, fringing marsh
148	Weston Cr.	.25	40	.1	40	.1			20						200	800	
149	Weston Cr.	1.5	30	.4	60	.9			10	.1					400	266	
150	East River	.75	15	.1	40	.3	20	.1	25	.2					1,000	1,333	
151	Tabb's Cr.	.75	30	.2	40	.3			30	.2					1,200	1,600	
152	Tabb's Cr.	.25	70	.2					30						100	400	
153	Tabb's Cr.	1.25	90	1.1			5		5						600	480	
154	Tabb's Cr.	1	70	.7			25	.2	5						500	500	
155	Tabb's Cr.	.5	5		95	.5									200	400	
156	Tabb's Cr.	.75	60	.4	10				30	.2					400	533	
157	Ware Pt. Area	.25	70	.2			25		5						600	2,400	fringing marsh
158	Ware Pt. Area	1.25	80	1					20	.2					200	160	
159	Ware Pt. Area	.25	20				70	.2	10						50	200	

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis



NO. 169

WEST LANDING CREEK

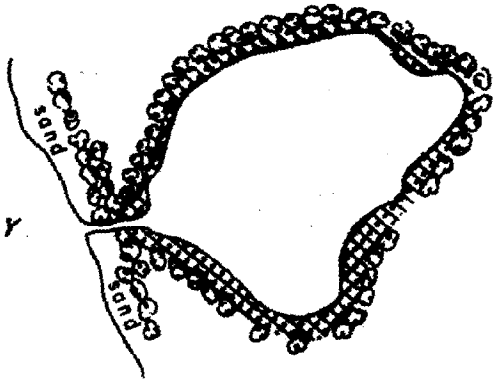
SALTMARSH CORDGRASS

BLACK NEEDLERUSH

SALTMEADOW HAY - SALTGRASS

SALTGRASS

SALTBUSH



MOBJACK BAY

NO. 175

Section II. East River. Part 3. Mouth and Eastern Shoreline.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
160	Ware Pt. Area	.75	70	.5	5		20	.1	5						400	533	
161	Ware Pt. Area	1	60	.6			20	.2	20	.2					400	400	
162	Ware Pt. Area	.25	30				60	.1	10						50	200	new road and culvert
163	Below Ware Pt.	.25	35				35		30						50	200	survey markers
164	Below Ware Pt.	.75	90	.7					10						100	133	
165	Digg's Wharf Area	1.5	60	.9	15	.2	10	.1	15	.2					1,000	1,000	fringing marsh
166	Digg's Wharf Area	.25	60	.1			30		10						50	200	
167	Digg's Wharf Area	.25	70	.2			15		15						50	200	
168	Digg's Wharf Area	.5	60	.3			20	.1	20	.1					400	800	
169	Digg's Wharf	1.5	60	.9	15	.2	10	.1	15	.2					600	400	fringing marsh
170	West Lending Creek	.5	50	.2	50	.2									100	200	
171	West Lending Creek	.75	60	.4			20	.1	20	.1					150	200	d
172	West Lending Creek	.25	90	.2			5		5						50	200	
173	West Lending Creek	.75	80	.6			10		10						600	800	several herons

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis

Section II. East River. Part 3. Mouth and Eastern Shoreline.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
174	West Lending Creek	1.5	40	.6	40	.6			20	.3					600	400	
175	Bay Shore Pt.	.5					60	.3	40	.2					200	400	Sand berm; much eel grass
	Sub-total Section II Part 3	177.3		37.7		80.0		28.5		23.9		6.2					
	Total Section II																
		NOTE:	Dredged marshes not included in total.														

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
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u = Fimbristylis

SECTION III

Mobjack Bay - New Point Comfort

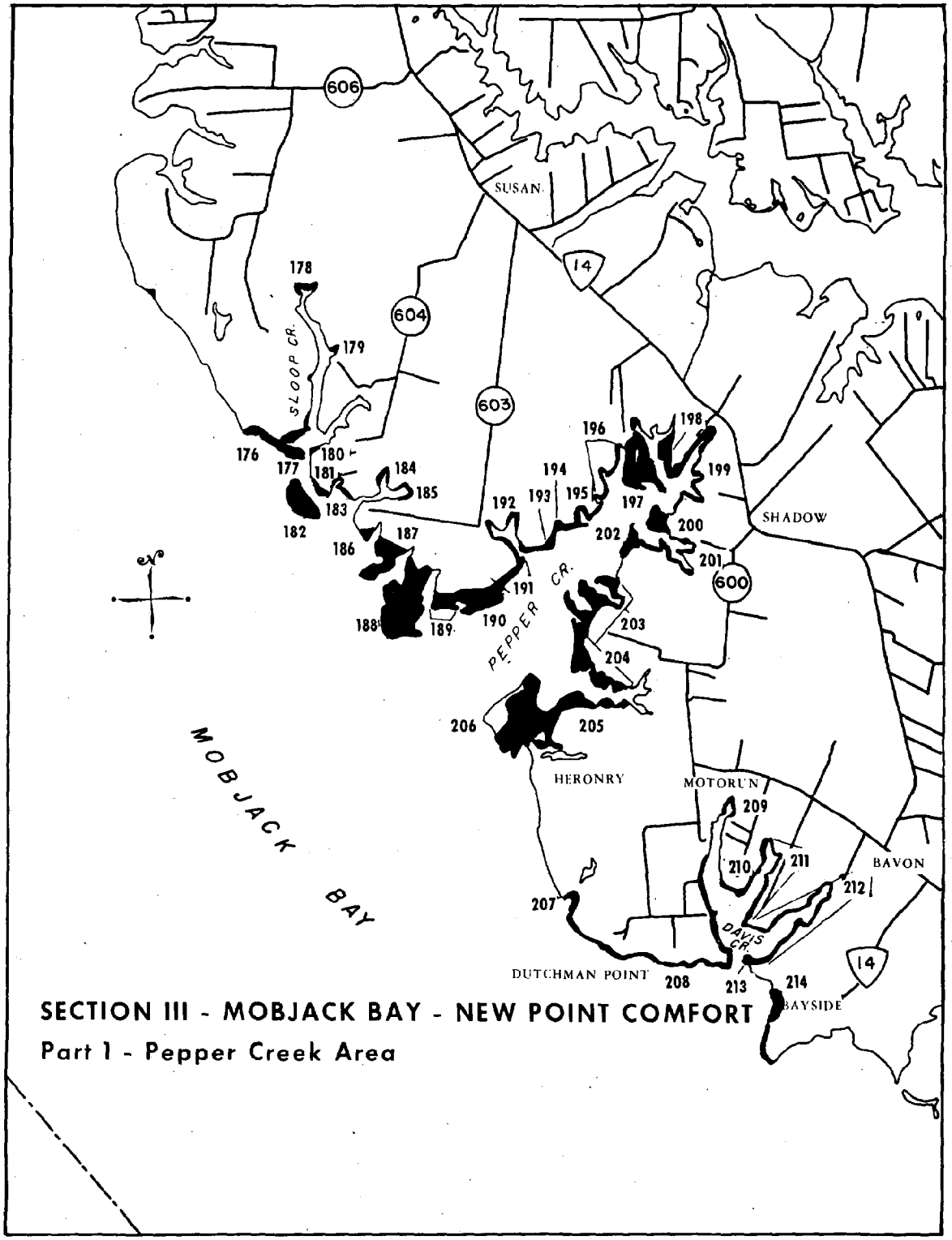
Fifty two marshes (Nos. 176 to 228) have been documented in this section. The largest marsh system in this area is the Harper-Dyer-Deep Creek complex. This unit includes marshes 216 through 220 and totals 336 acres. Approximately 112 acres of this extensive system is flooded daily by tides and is vegetated with saltmarsh cordgrass. This part of the marsh represents the highest order of value from the standpoint of the marine environment. A large portion of the marsh, 132 acres, is saltgrass meadow followed by saltbush with 56 acres and black needlerush, 45 acres. Other associated species such as sea lavender, saltwort and fimbristylis are found only in small numbers.

In the Pepper Creek area nearly the entire shoreline is fringed with saltwater marshes. Several low peninsulas or necks are vegetated almost entirely with marsh grasses. This creek system appears to be a haven for wildlife. A very large heronry is located at the mouth of Pepper Creek near marsh number 206. During the field studies, over 200 great blue herons were observed nesting in nearby pines, in flight or standing in water.

The most extensive fringing marsh (No. 208) in this section protects 3,200 feet of shoreline at Dutchman Point. A high percentage of the vegetation here is saltmarsh cordgrass, a basic contributor to the marine food web.

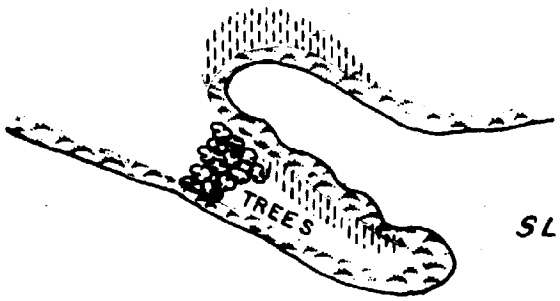
Another marsh worth noting is Sloop Creek Island (No. 182). This marsh is endowed with several ponds, an asset as a waterfowl habitat.

The very small marshes on New Point Comfort Island are being eroded away at a rapid rate. Large blocks of denuded peat indicate that the marsh area was definitely larger at one time. Topographic maps and aerial photographs taken over the years indicate that this area is in a constant state of flux because of erosion.



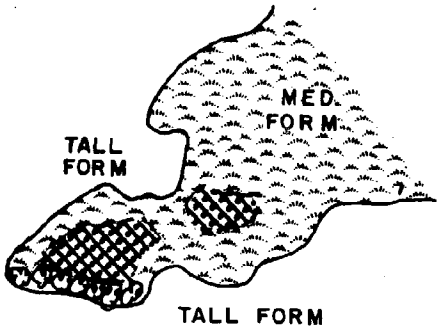
SECTION III - MOBJACK BAY - NEW POINT COMFORT

Part 1 - Pepper Creek Area



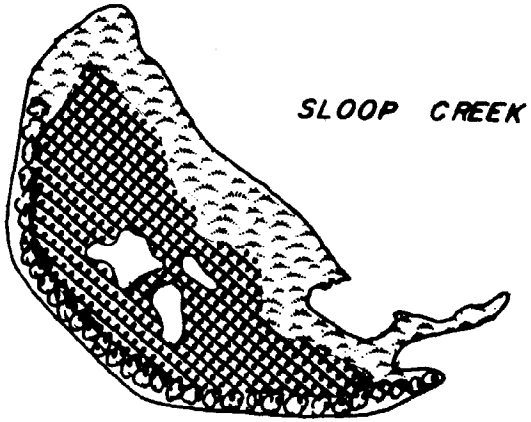
SLOOP CREEK

NO. 177



MOBJACK BAY

NO. 187



SLOOP CREEK

MOBJACK BAY

NO. 182

SALTMARSH CORDGRASS

BLACK NEEDLERUSH

SALTMEADOW HAY – SALTGRASS

SALTBUSH

Section III. Mobjack Bay - New Point Comfort Area. Part 1. Pepper Creek Area.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
176	Above Sloop Cr.	2	60	1.2	20	.4			20	.4					600	300	
177	Mouth Sloop Cr.	1	40	.4	30	.3			30	.3					700	700	
178	Upper Sloop Cr.	1	80	.8			10	.1	10	.1					200	200	
179	Upper Sloop Cr.	.5	80	.4			10	.1	10	.1					50	100	
180	Mouth Sloop Cr.	.25	80	.2					20						200	800	
181	Mouth Sloop Cr.	2	80	1.6	20	.4									600	300	
182	Sloop Cr. Island	5	30	1.5	10	.5	40	2	20	1					1,500	300	c, g, s
183	Pepper Cr. Area	.25	90	.2					10						400	1,600	
184	Pepper Cr. Area	.25	90	.2					10						300	1,200	
185	Pepper Cr. Area	.75	90	.7					10						400	800	
186	Pepper Cr. Area	.5	20	.1			70	.35	10						300	600	
187	Pepper Cr. Area	7	70	4.9			20	1.4	10	.7					2,000	285	
188	Mouth Pepper Cr.	20	70	14.	15	3			10	2			q, s, t 5	1	3,800	190	
189	Mouth Pepper Cr.	3	30	.9	20	.6	30	.9	20	.6					800	266	several small ponds

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
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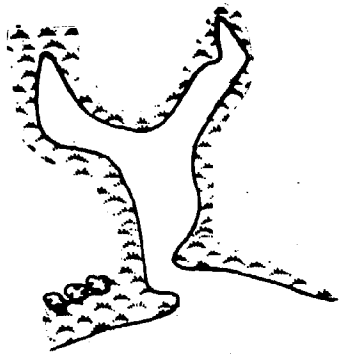
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis



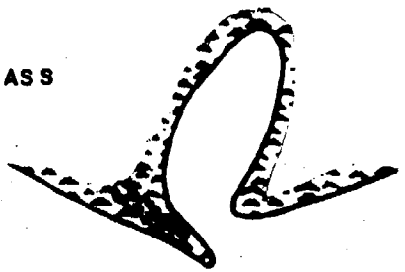
PEPPER CREEK

NO. 192

SALTMARSH CORDGRASS

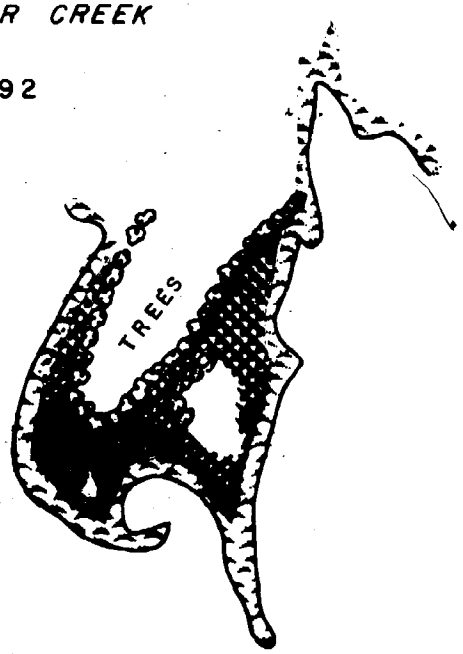
SALTMEADOW HAY – SALTGRASS

SALTBUSH



PEPPER CREEK

NO. 195



PEPPER CREEK

NO. 197

PEPPER CREEK

NO. 199

Section III. Mobjack Bay - New Point Comfort Area. Part 1. Pepper Creek Area.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
190	Pepper Cr.	6	30	1.8	30	1.8	30	1.8	10	.6					1,200	200	several small ponds
191	Pepper Cr.	2.5	20	.5			20	.5	40	1			g 20	.5	800	320	
192	Pepper Cr.	1.5	60	.9					40	.6					2,200	1,466	
193	Pepper Cr.	.5	90	.4			10								400	800	
194	Pepper Cr.	?	----	----	----	----	----	Dredged marsh		----	----	----	----	----			
195	Pepper Cr.	.25	90	.2					10						700	2,800	
196	Pepper Cr.	1.25	100	1.25											2,000	1,600	
197	Pepper Cr.	6	35	2.1	5	.3	50	3	10	.6					2,800	466	
198	Pepper Cr.	3	90	2.7					10	.3					1,000	333	
199	Pepper Cr.	6	60	3.6	5	.3	30	1.8	5	.3					3,200	533	
200	Pepper Cr.	4	60	2.4			25	1	15	.6					800	200	
201	Pepper Cr.	2.5	80	2.0					20	.5					2,000	800	
202	Pepper Cr.	4	100	4											1,200	300	
203	Pepper Cr.	8	40	3.2	30	2.4	30	2.4							3,600	450	c,u

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
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d = Cattail
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n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
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s = Saltwort
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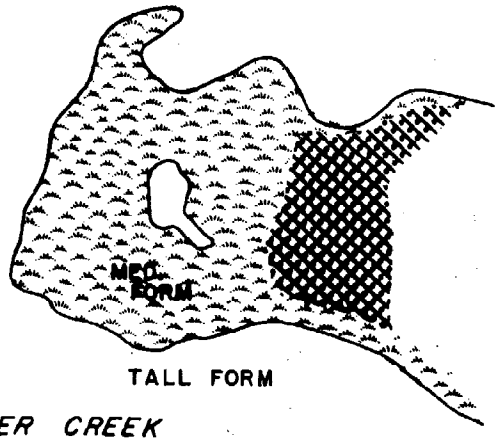
u = Fimbristylis



PEPPER CREEK

NO. 200

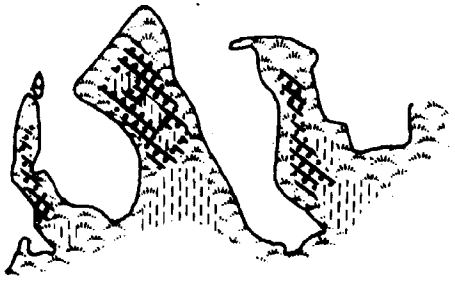
NO. 201

SALTMARSH CORDGRASS

SALTMEADOW HAY - SALTGRASS

BLACK NEEDLERUSH

SALTBUSH



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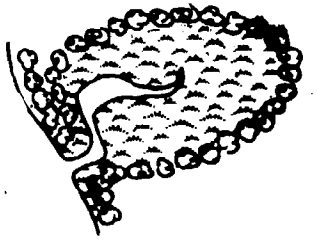


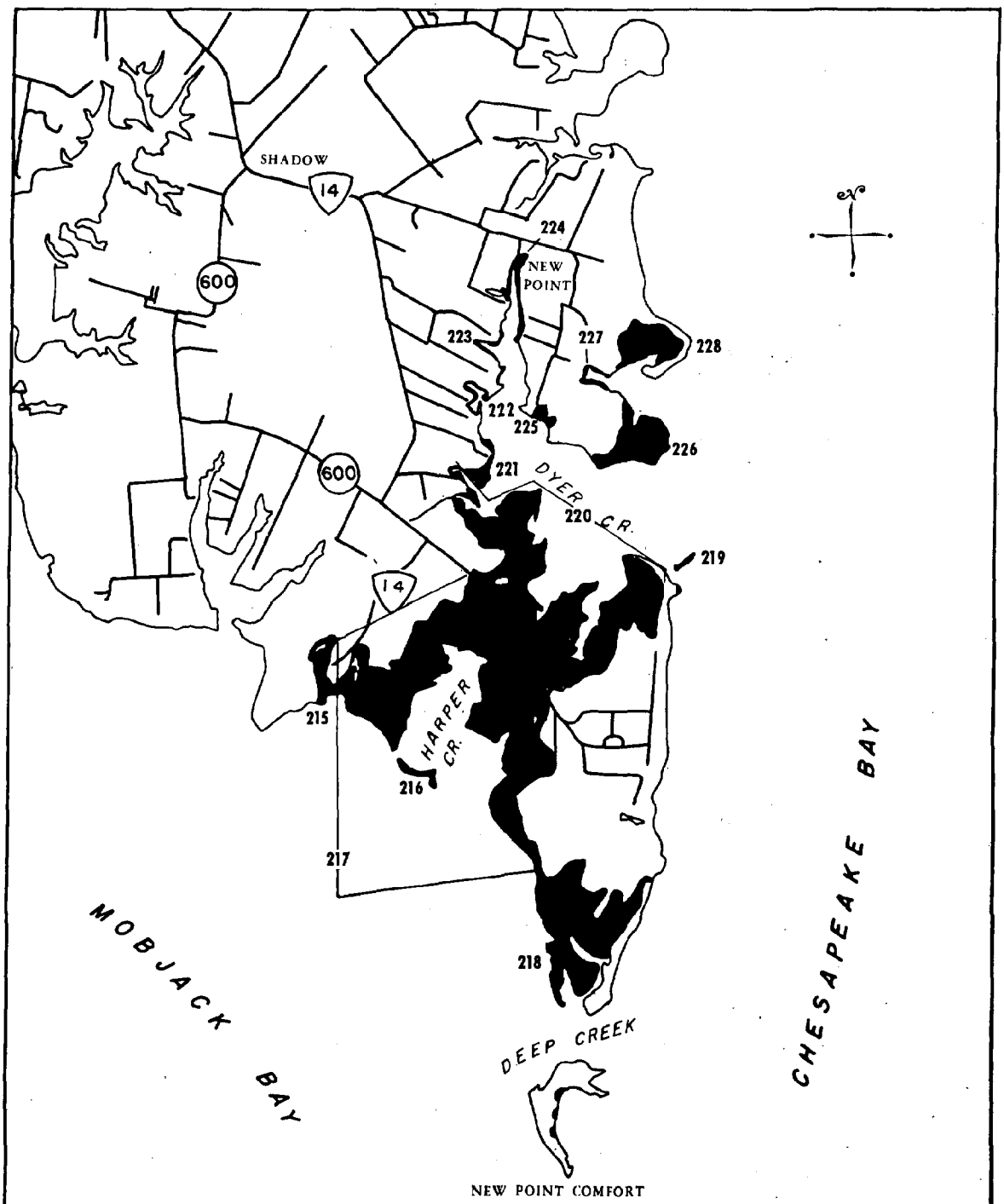
NO. 207

Section III. Mobjack Bay - New Point Comfort Area. Part 1. Pepper Creek Area.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
204	Pepper Cr.	5	20	1	60	3	20	1							2,000	400	
205	Pepper Cr.	3	20	.6	20	.6	40	1.2	20	.6					3,800	1,266	q, s
206	Mouth Pepper Cr.	15	40	6	40	6			20	3					1,800	120	c, q, s
207	Dutchman's Pt.	2.5	80	2					20	.5					400	160	sand berm
208	Dutchman's Pt.	2.5	80	2.			5	.1	15	.4					3,200	1,280	fringing marsh 3,200'
209	Davis Cr.	.25	50	.1			50	.1							400	1,600	
210	Davis Cr.	.25	35				35		30						600	2,400	
211	Davis Cr.	.5	50	.25			25	.1	25	.1					2,800	5,600	fringing marsh 1,300'
212	Davis Cr.	.75	60	.4			10		30	.3					3,600	4,800	fringing marsh 1,600'
213	Mouth Davis Cr.	.25	60	.1					40	.1					400	1,600	
214	Bayside	2	100	2											400	200	recent marsh on old spoil
	Sub-total Section III Part 1	121		66.6		19.6		17.8		14.7				1.5			

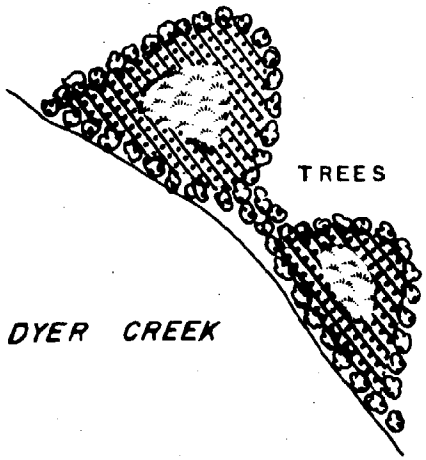
*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis



SECTION III - MOBJACK BAY - NEW POINT COMFORT

Part 2 - New Point Comfort Area



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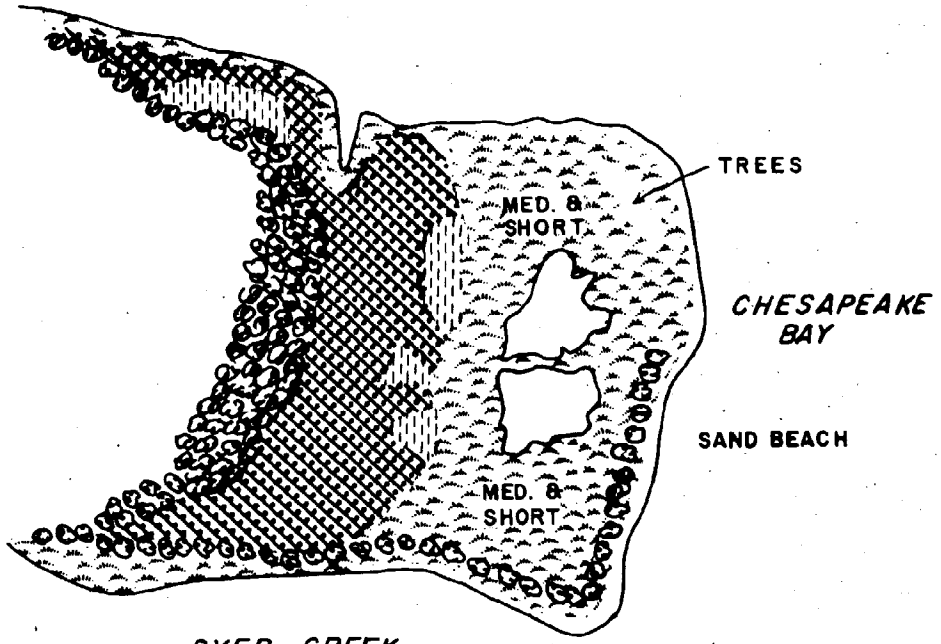

NO. 226

SALTMARSH CORDGRASS
BLACK NEEDLERUSH
SALTMEADOW HAY – SALTGRASS
SALTBUSH

Section III. Mobjack Bay - New Point Comfort. Part 2. New Point Comfort Area.

#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres			
215	Bayside	12	90	10.8					10	1.2					1,600	133	
216	Harper Cr. Island	1	70	.7					30	.3					1,600	1,600	
217	Harper Cr. Marsh	160	30	48	10	16	50	80	10	16					9,200	57	Bounded by Harper Cr. and Rt. 600, q, s, u
218	Deep Creek Marsh	52	50	26			20	10.4	30	15.6					5,800	111	
219	Dyer Cr. Isl.	.25	90	.2					10						500	2,000	
220	Dyer Cr. Marsh	94	30	28	15	14.1	35	33	20	18.8					10,200	108	q, s, u
221	Dyer Cr.	1	10	.1			90	.9							1,000	1,000	
222	Dyer Cr.	.5	30	.1			40	.2	30	.1					800	1,600	
223	Dyer Cr.	.5	40	.2			40	.2	20	.1					1,600	3,200	
224	Dyer Cr. New Pt.	1.5	60	.9			20	.3	20	.3					2,800	1,866	
225	Dyer Cr.	1.5	35	.5			30	.4	35	.5					400	266	
226	Mouth Dyer Cr.	24	30	7.2	20	4.8	30	7.2	20	4.8					3,400	141	
227	Above Dyer Cr.	2	10	.2	10	.2	20	.4	60	1.2					1,200	600	
228	Dyer Cr. Area	14	80	11.2			10	1.4	10	1.4					2,000	143	

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis

Section III. Mobjack Bay - New Point Comfort. Part 2. New Point Comfort Area.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
	Sub-total Section III Part 2	364.2		134.1		35.1		134.4		60.3							
	Total Section III	485.2		200.7		54.7		152.2		75				1.5			

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
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u = Fimbristylis

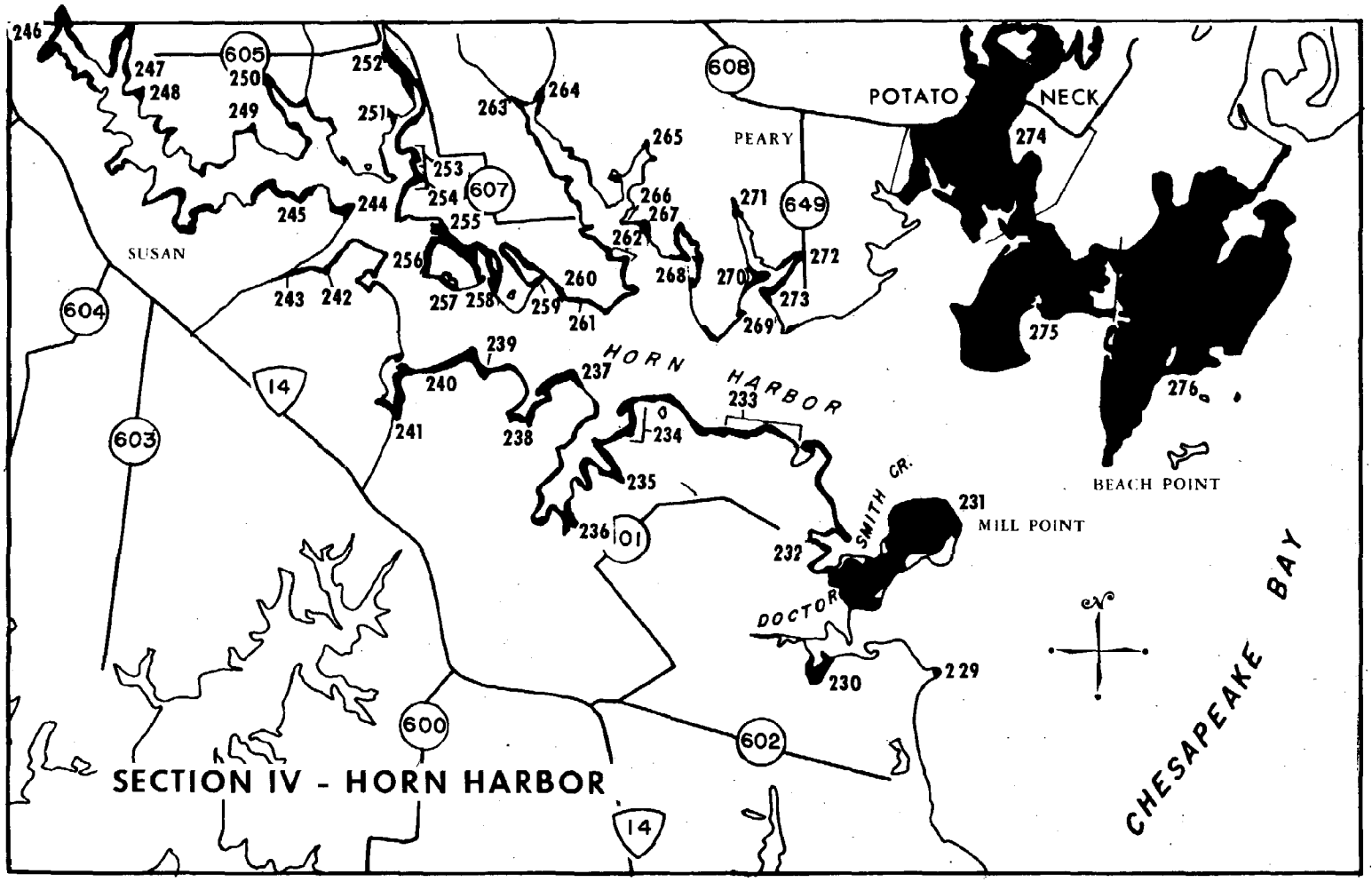
SECTION IV

Horn Harbor

At the mouth of Horn Harbor there are two major marsh systems. Marsh No. 231 is a low 25 acre marshy peninsula between Doctor's Creek and Smith Creek. Marshes 274, 275 and 276 represent the largest wetland area in this section with 261 acres. This large marsh was subdivided into three parts which correspond to the natural segments as found on the section map. Within these marshes is a dike system. In marsh No. 274, there are indications that the area of the marsh between route 608 and the dike had been burned and cultivated at one time. This area of the marsh is furrowed as if it were plowed years ago. The dominant vegetation here is saltgrass meadow. In contrast, the marsh area adjacent to the water interface and the dike is predominantly saltmarsh cordgrass with only a small amount of higher marsh grasses.

The majority of the other marshes in the system are smaller, occupying coves at the head of guts, fringing on shoreline and sand spits.

A marsh of particular note is No. 258. This is the largest individual marsh above the mouth of Horn Harbor. The dominant vegetation here is saltmarsh cordgrass (60%) followed by saltgrass meadow (20%), black needlerush (10%), saltbush (10%) and associated species such as sea lavender and saltwort. Wildlife in general was observed to be quite abundant, particularly shellfish along the margins of the marsh.


246
247
248
605
250
249
252
251
263
264
608
POTATO
NECK
274
265
PEARY
253
254
607
255
266
267
271
649
244
245
262
SUSAN
256
243
242
257
258
259
260
261
268
270
272
273
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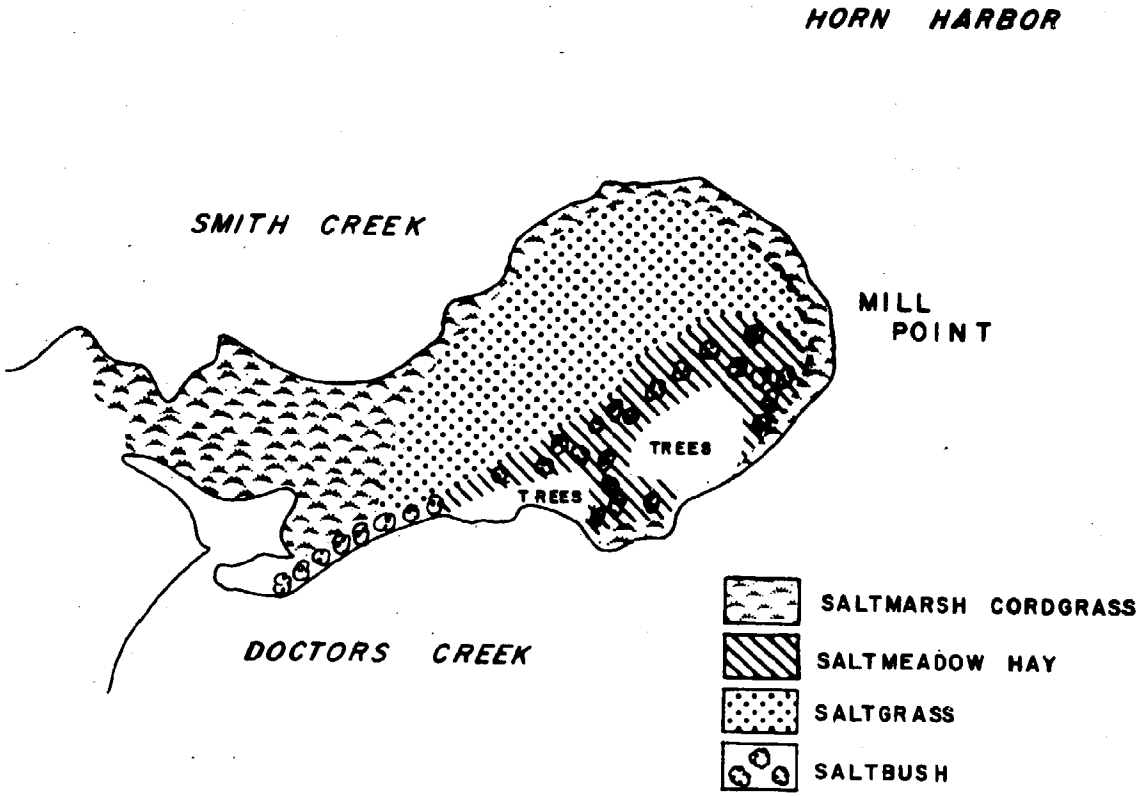
275
604
239
240
237
HORN
HARBOR
233
276
14
603
241
238
234
235
BEACH POINT
231
SMITH CR.
MILL POINT
236
01
232
DOCTOR
229
230
600
602
SECTION IV - HORN HARBOR
14
CHESAPEAKE BAY


HORN HARBOR
SMITH CREEK
MILL POINT
TREES
TREES
DOCTORS CREEK
SALTMARSH CORDGRASS
SALTMEADOW HAY
SALTGRASS
SALTBUSH

NO. 231

Section IV. Horn Harbor

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
229	Doctor's Cr.	.25	80	.2					20						200	800	
230	Doctor's Cr.	2	20	.4			40	.8	40	.8					600	300	
231	Mill Pt.	25	25	6.25	5	1.2	45	11.2	25	6.25					6,000	240	pure stands of saltgrass
232	Smith Cr.	1	30	.3			40	.4	30	.3					1,400	1,400	fringing marsh 1,500'
233	Horn Harbor	.5	30	.1			35	.2	35	.2					1,200	2,400	fringing marsh 1,200'
234	Horn Harbor	.5	20	.1			50	.2	30	.1					400	800	Md mostly, Sp
235	Horn Harbor	.25	20				60	.1	20						800	3,200	Md mostly, Sp
236	Horn Harbor	1	60	.6			20	.2	20	.2					400	400	Md mostly, Sp
237	Horn Harbor	.25	20				60	.1	20						400	1,600	
238	Horn Harbor	1	40	.4	30	.3	15	.1	15	.1					1,200	1,200	Md mostly, Sp
239	Horn Harbor	.25	45	.1	45	.1			10						200	800	
240	Horn Harbor	.5	30	.1	40	.2			20	.1			g 10		1,000	2,000	fringing marsh 1,000'
241	Horn Harbor	1	60	.6	10	.1	15	.1	15	.1					800	800	
242	Upper Horn Harbor	.25	40	.1	40	.1			20						100	400	

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis

Section IV. Horn Harbor.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/A**	Observations
243	Upper Horn Harbor	.75	60	.4			20	.1	20	.1					800	1,066	Md and Sb as a community
244	Upper Horn Harbor	.5	30	.1	70	.3									400	800	
245	Upper Horn Harbor	.5	100	.5											1,000	2,000	fringing marsh 1,000'
246	Upper Horn Harbor	3	30	.9	40	1.2	20	.6	10	.3					1,000	333	shoals
247	Upper Horn Harbor	2	40	.8	50	1			10	.2					1,000	500	
248	Upper Horn Harbor	.5	10		75	.4			15						200	400	
249	Upper Horn Harbor	.25	90	.2									g 10		300	1,200	
250	Upper Horn Harbor	.5	100	.5											100	200	
251	Upper Horn Harbor	.25	95	.2					5						100	800	
252	Upper Horn Harbor	1	80	.8			10	.1	10	.1					1,500	1,500	
253	Upper Horn Harbor	.75			90	.7			10						400	533	
254	Upper Horn Harbor	.25	80	.2					20						200	800	
255	Horn Harbor	3	40	1.2	30	.9	15	.4	15	.4					500	166	Md mainly, Sp
256	Horn Harbor	.5	20	.1	70	.3			10						600	1,200	fringing marsh

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

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o = Smartweed
p = Wild Rice
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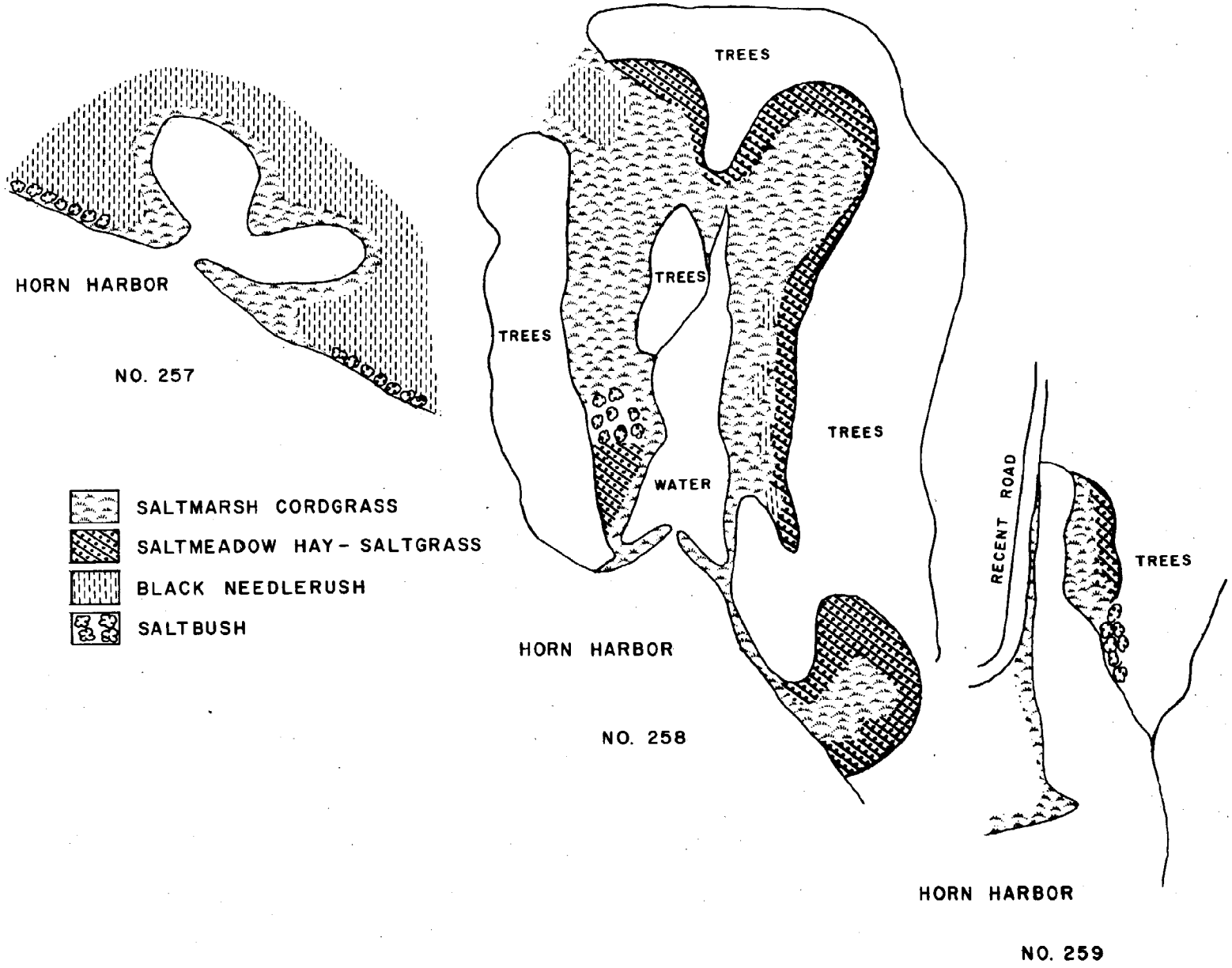
s = Saltwort
t = Sea Oxeye
u = Fimbristylis


HORN HARBOR
NO. 257
SALTMARSH CORDGRASS
SALTMEADOW HAY - SALTGRASS
BLACK NEEDLERUSH
SALTBUSH
TREES
TREES
TREES
TREES
WATER
HORN HARBOR
NO. 258
RECENT ROAD
TREES
HORN HARBOR
NO. 259

Section IV. Horn Harbor.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
257	Horn Harbor	1.25	20	.2	65	.8	10	.1	5						400	320	
258	Horn Harbor	9	60	5.4	10	.9	20	1.8	10	.9					1,200	133	q, s
259	Horn Harbor	.5	60	.3			30	.1	10						1,600	3,200	recently dredged channel and road
260	Horn Harbor	.33	40	.1	10		30	.1	20						50	151	
261	Horn Harbor	.25	---------- dredged 5', bulkhead material ----------												50	200	
262	Horn Harbor	.25	60	.1			20		20						300	1,200	
263	Horn Harbor	1	70	.7	20	.2			10	.1					300	300	
264	Horn Harbor	1.5	70	1			20	.3	10	.1					400	266	
265	Horn Harbor	.33	70	.2			20		10						100	303	
266	Horn Harbor	.25	10		30		50	.1	10						100	400	
267	Horn Harbor	.25	10		80	.2			10						200	800	
268	Horn Harbor	1.5	20	.3	70	1			10	.1					2,000	1,333	fringing marsh
269	Horn Harbor	.25	30		35		15		20						300	1,200	
270	Horn Harbor	.25	60	.1	20		10		10						700	2,800	

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

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Md = Saltgrass Meadow
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m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis

Section IV. Horn Harbor.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
271	Horn Harbor	.25	70	.2			20		10						100	400	partly dredged
272	Horn Harbor	.25	100	.25											400	1,600	partly dredged
273	Horn Harbor	.5	20	.1	20	.1	30	.1	30	.1					400	800	accreting sand
274	Horn Harbor	53	30	15.9	10	5.3	50	26.5	10	5.3					4,800	90	q,s,t
275	Horn Harbor	71	20	14.2	40	28.4	30	21.3	10	7.1					8,600	121	
276	Horn Harbor	137	20	27.4	50	68.5	30	41.1							13,600	191	q,s; higher marsh once cultivated
277	Horn Harbor	1	100	1											800	800	fringing marsh
	Total Section IV	327.2		82.6		112.2		106.1		22.9							

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
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g = Switch Grass
h = Foxtail Grass
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m = Marsh Mallow
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o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis

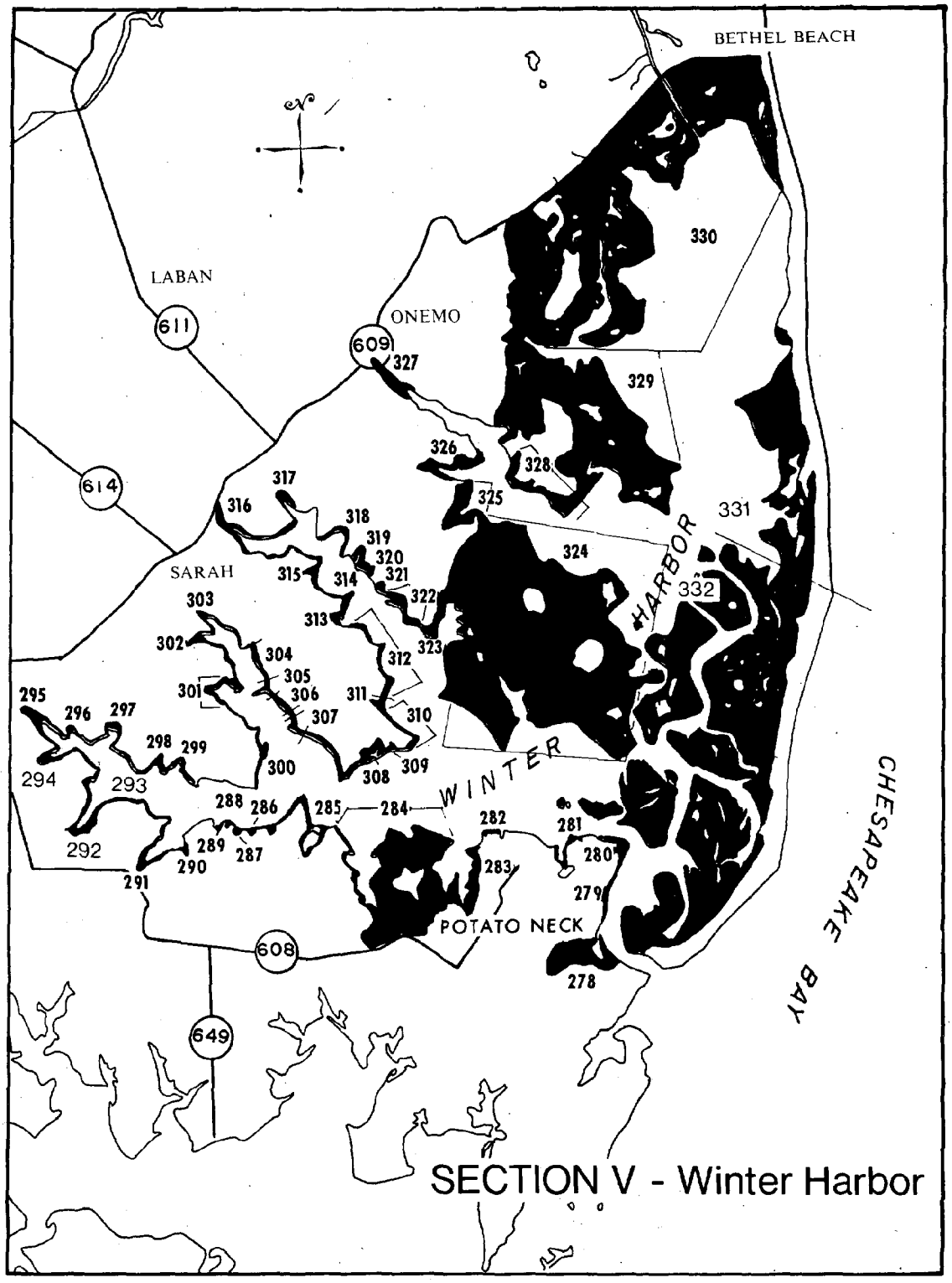
SECTION V

Winter Harbor

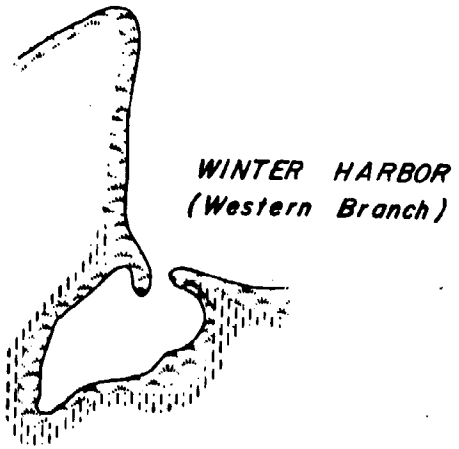
This section has the largest marsh acreage in Mathews County, 718 acres. The open water in Winter Harbor is divided into two parts by a massive marsh system. The two bodies of water are connected by a network of natural channels bordered by marshes and are usually passable at high tide. Much of the open water areas range in depth from 3 to 4 feet at high tide, although certain areas in the western branches of the harbor and in the upper part of the system near Bethel Beach are shallower.

The most productive wetlands, i.e., large stands of saltmarsh cordgrass, appear to be along the lower bayward side of the harbor (No. 332). This marsh system is a series of low islands of nearly 100 percent saltmarsh cordgrass. Only near the ecotone of the marsh and beach community does the vegetation become more diversified. Here are found communities of black needlerush, saltgrass and saltbushes. However, this rather narrow zone represents only about 15% of the total marsh area.

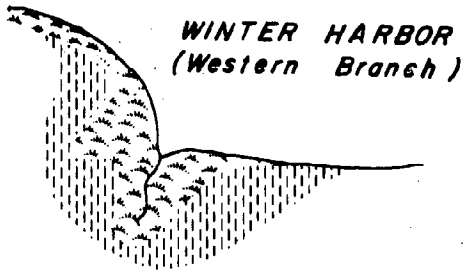
The other large marshes of Winter Harbor (Nos. 324, 329, 330 and 331) are dominated by black needlerush. The proceeding marshes have a slightly higher elevation than 332, and in addition to the rush, they support saltgrass meadow and saltbush communities in drier parts. The margins of these marshes are usually fringed with saltmarsh cordgrass. The "hummocks" or "tree islands" in the above marshes are nesting areas for ospreys. Also observed were small flocks of snowy and American egrets, green and blue herons.



SECTION V - Winter Harbor



NO. 285

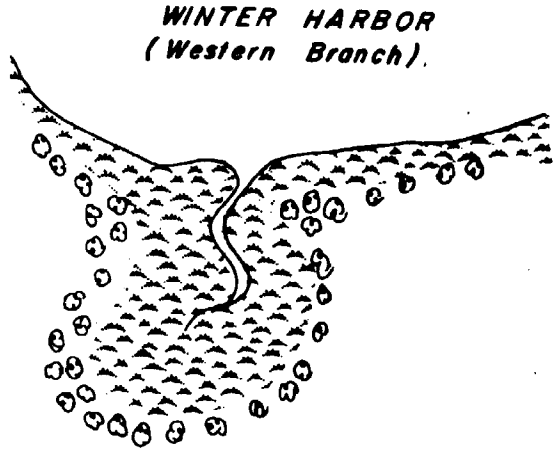


NO. 287

SALTMARSH CORDGRASS

BLACK NEEDLERUSH

SALTBUSH



NO. 289

Section V. Winter Harbor.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
278	Entrance Winter Harbor	12	100	12											1,000	83	fringing marsh
279	Entrance Winter Harbor	2	50	1			30	.6	10	.2			k 10	.2	800	400	
280	Entrance Winter Harbor	3	60	1.8	30	.9	5	.1	5	.1					900	300	
281	Entrance Winter Harbor	2	80	1.6			15	.3	5	.1					1,400	700	includes islands
282	Entrance Winter Harbor	.5	75	.4			20	.1	5						300	600	fringing marsh spoil behind
283	Winter Harbor	2	30	.6	50	1	15	.3	5	.1					2,200	1,100	
284	Winter Harbor	42	30	12.6	50	21	20	8.4							5,000	119	
285	Winter Harbor	.5	60	.3	40	.2									1,400	2,800	
286	Winter Harbor	.25	60	.1	40	.1									200	800	
287	Winter Harbor	.25	60	.1	40	.1									100	400	
288	Winter Harbor	.25	70	.2	10		15		5						200	800	
289	Winter Harbor	.5	80	.4			15		5						100	200	
290	Winter Harbor	.25	80	.2			20								200	800	Md mainly, Sp
291	Winter Harbor	.75	75	.5	20	.1			5						400	533	

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
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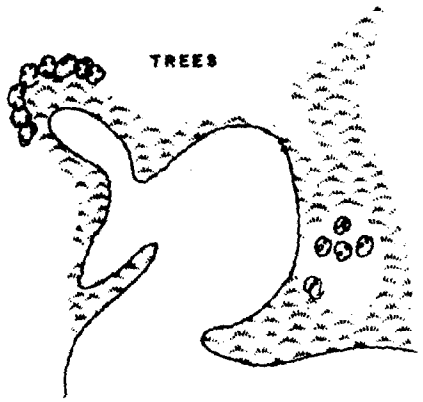
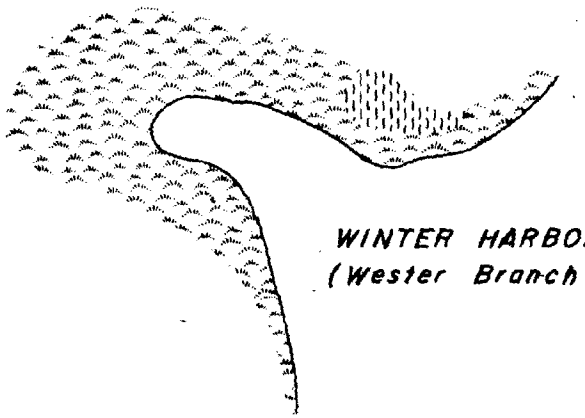


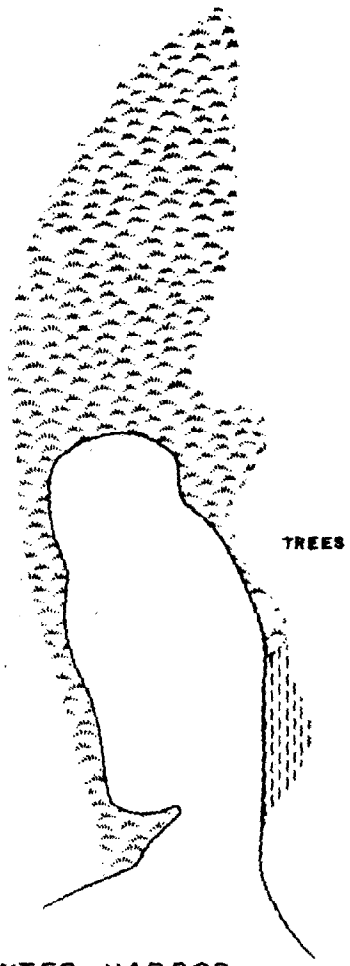
WINTER HARBOR
(Western Branch)

NO. 301



WINTER HARBOR
(Wester Branch)

NO. 302



WINTER HARBOR
(Western Branch)

NO. 303

SALTMARSH CORDGRASS

BLACK NEEDLERUSH

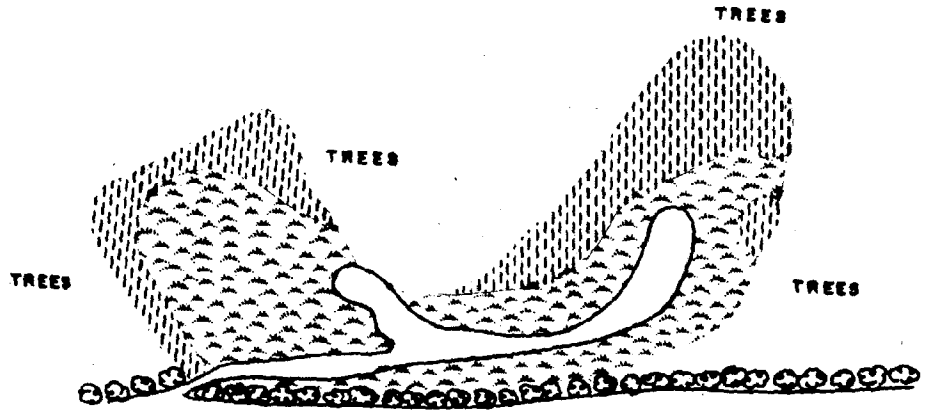
SALTBUSH

Section V. Winter Harbor.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
292	Winter Harbor	.5	85	.4	15										500	1,000	
293	Winter Harbor	.5	75	.4			15		10						200	400	fringing marsh
294	Winter Harbor	.75	90	.7									g 10		200	266	
295	Winter Harbor	.75	80	.6			10		10						300	400	
296	Winter Harbor	.25	80	.2	20										150	600	
297	Winter Harbor	.25	50	.1	50	.1									200	800	
298	Winter Harbor	.25	50	.1	30				10				g 10		75	300	
299	Winter Harbor	.25	60	.1	30								g 10		200	800	
300	Winter Harbor	1	20	.2	80	.8									800	800	fringing marsh
301	Winter Harbor	.75	70	.5	15	.1	10		5						800	1,066	
302	Winter Harbor	1	95	.9	5										100	100	Sb, g
303	Winter Harbor	1	95	.9	5										150	150	
304	Winter Harbor	.25	5		95	.2									400	400	
305	Winter Harbor	.33	40	.1	60	.2									400	1,212	Sb

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

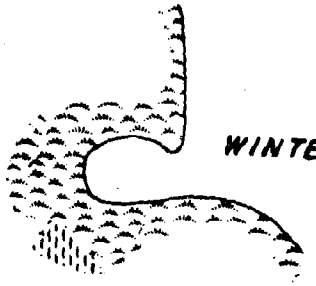
Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis



WINTER HARBOR

NO. 308

SALTMARSH CORDGRASS
BLACK NEEDLERUSH
SALTBUSH



WINTER HARBOR

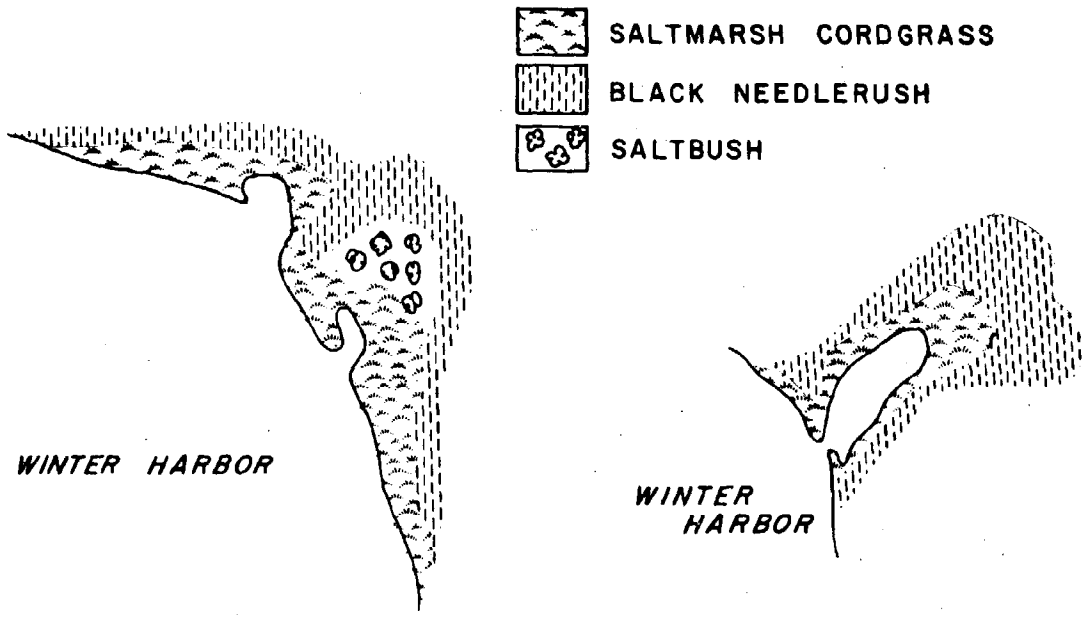
NO. 313

Section V. Winter Harbor.

#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres			
306	Winter Harbor	.25	25		70	.2			5						200	800	
307	Winter Harbor	.5	20	.1	80	.4									400	800	fringing marsh
308	Winter Harbor	1.5	45	.7	45	.7			10						400	266	
309	Winter Harbor	.5			40	.2	40	.2	20	.1					150	300	sand berm
310	Winter Harbor	.33	30	.1	70	.2									800	2,424	
311	Winter Harbor	1.5	95	1.4	5	.1									200	133	Sb
312	Winter Harbor	.75	50	.4	50	.4									1,600	2,133	fringing marsh
313	Winter Harbor	.25	95	.2	5										150	600	
314	Winter Harbor	.25	90	.2	10										500	2,000	
315	Winter Harbor	.25	90	.2			5		5						100	400	
316	Winter Harbor	3	85	2.5			15	.4							200	66	Sb
317	Winter Harbor	1.5	65	1.	5		20	.3	5						200	133	
318	Winter Harbor	.75	50	.4	10		25	.2	15						600	800	
319	Winter Harbor	.5	40	.2	60	.3									200	400	

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Seltwort
t = Sea Oxeye
u = Fimbristylis


SALTMARSH CORDGRASS
BLACK NEEDLERUSH
SALTBUSH
WINTER HARBOR
WINTER HARBOR

NO. 318

NO. 319

Section V. Winter Harbor.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
320	Winter Harbor	.25	60	.1	35		5								200	800	
321	Winter Harbor	.25	30		70	.2									150	600	
322	Winter Harbor	.5	30	.1	70	.3									800	1,600	
323	Winter Harbor	.75	20	.1	80	.6									500	666	
324	Winter Harbor	180	15	27	60	108	15	27	10	18					14,200	78	
325	Winter Harbor	7.5	40	3	60	4.5									800	106	
326	Winter Harbor	3	80	2.4	10	.3	10	.3							600	200	
327	Winter Harbor	4	80	3.2			20	.8									Jr, Sb
328	Winter Harbor	6	30	1.8	70	4.2									1,600	53	
329	Winter Harbor	78	20	15.6	60	46.8	10	7.8	10	7.8					7,400	95	
330	Winter Harbor	150	10	15	60	90	30	45							20,400	136	
331	Winter Harbor	42	20	8.4	80	33.6									6,200	147	
332	Winter Harbor	160	85	136	5	8	5	8	5	8	8				44,800	280	many ponds
	Total Section V	718.4		257		323.7		99.8		34.4				.2			

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis

SECTION VI

Garden Creek

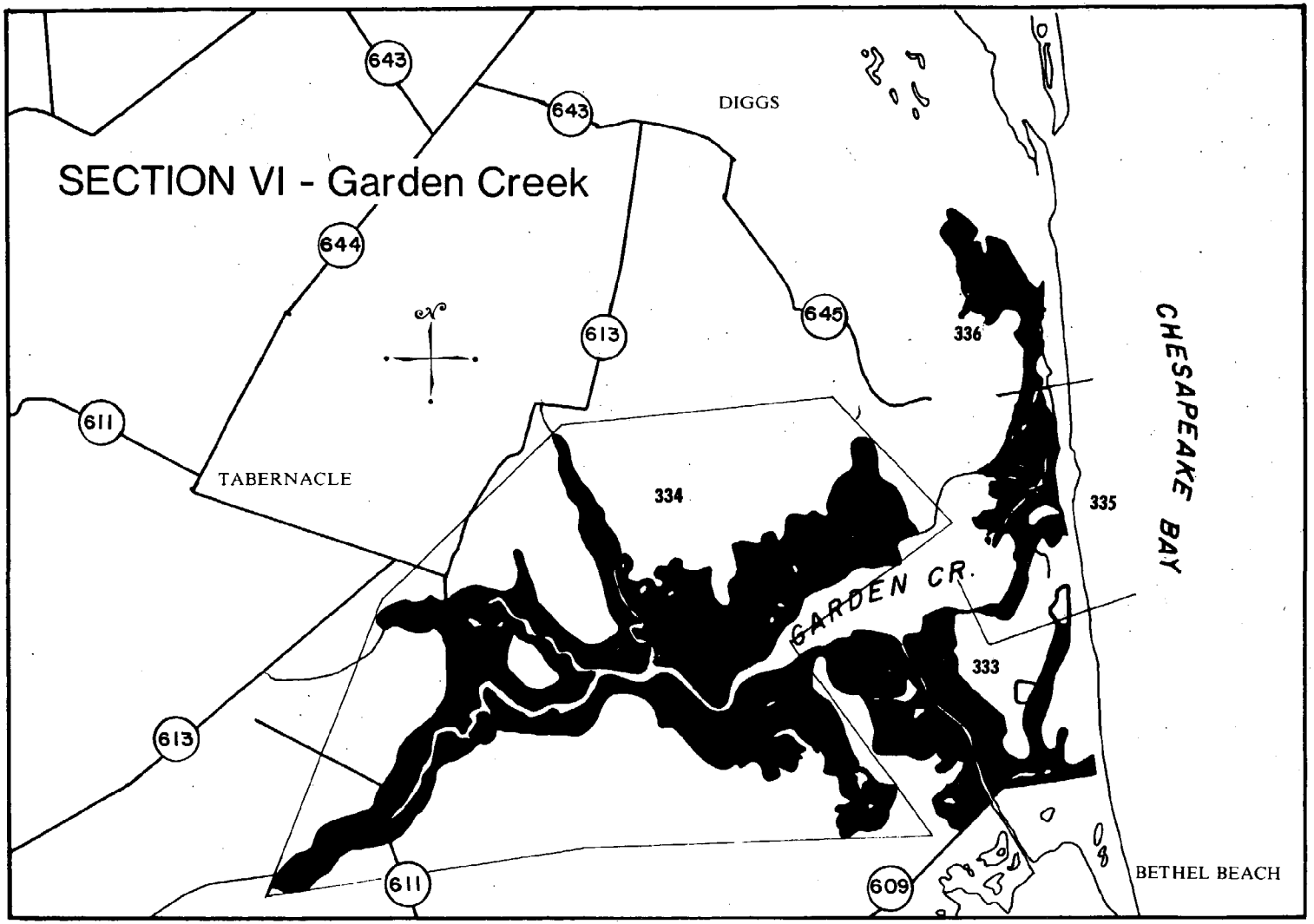
Garden Creek is a low-lying watershed system which is largely made up of marshlands dominated by black needlerush. Although the channel that connects with Horn Harbor is a relatively deep waterway (6 feet at MHW), Garden Creek itself is very shallow in most areas, especially near the mouth of the channel.

The mouth of the creek has been dredged to afford access to Chesapeake Bay. Sand accretion in this channel will likely be a constant problem.

The total acreage of marsh in this section is approximately 524 acres. Although the major portion of the system is dominated by black needlerush, the margins are usually saltmarsh cordgrass, which accounts for nearly 46 acres of the total marsh area.

Meadows are found scattered throughout the marsh system but are commonly found at the margins of the loblolly pine woodlands.

Although most of the marsh is rush dominated, the upper reaches of Garden Creek is quite diversified with communities of saltbush, saltmeadow hay and black needlerush.


SECTION VI - Garden Creek
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DIGGS
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TABERNACLE
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335
CHESAPEAKE BAY
GARDEN CR.
333
613
611
609
BETHEL BEACH

Section VI. Garden Creek.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
333	Garden Creek Channel	94	10	9.4	75	70.5	15	14.1							12,600	134	Md mainly, Sp Sc, d
334	Garden Cr.	364	10	36.4	80	291.2	5	18.2	5	18.2					30,000	82	
335	Haven Beach	32			40	12.8	60	19.2							13,600	425	Md mainly, Sp
336	Haven Beach	34			50	17.	50	17.							3,600	105	
	Total Section VI	524		45.8		391.5		68.5		18.2							

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
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m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis

SECTION VII

Milford Haven - Gwynn Island

This large section has three parts:

Part 1 - Stutts Creek Area which includes White's Creek, Rigby Island, Back Creek, Stoke's Creek, Billups Creek, Stutts Creek, Morris Creek and the Crab Neck-Point Breeze Area.

Part 2 - Milford Haven-Queen's Creek Area containing Lane's Creek, Winder Creek, Queen's Creek and associated minor creeks.

Part 3 - Gwynn Island.

This section has nearly 400 acres of marsh. Most of the marsh area lies in the Stoke's Creek-White's Creek area, which is the least populated region in this system.

The largest marsh in this section, No. 345 (62 acres) in Stoke's Creek, is typical of the larger marshes in Part 1.

Seventy percent of the marsh (43 acres) is black needlerush with a saltmarsh cordgrass fringe in most places. The predominant substrate here is sand, which is a typical habitat for Juncus.

Stutts Creek, one of the more picturesque creeks in Mathews County, is characterized by relatively high banks (5 foot contour roughly parallels the margin of the Creek), small coves with pocket marshes and several secondary creeks.

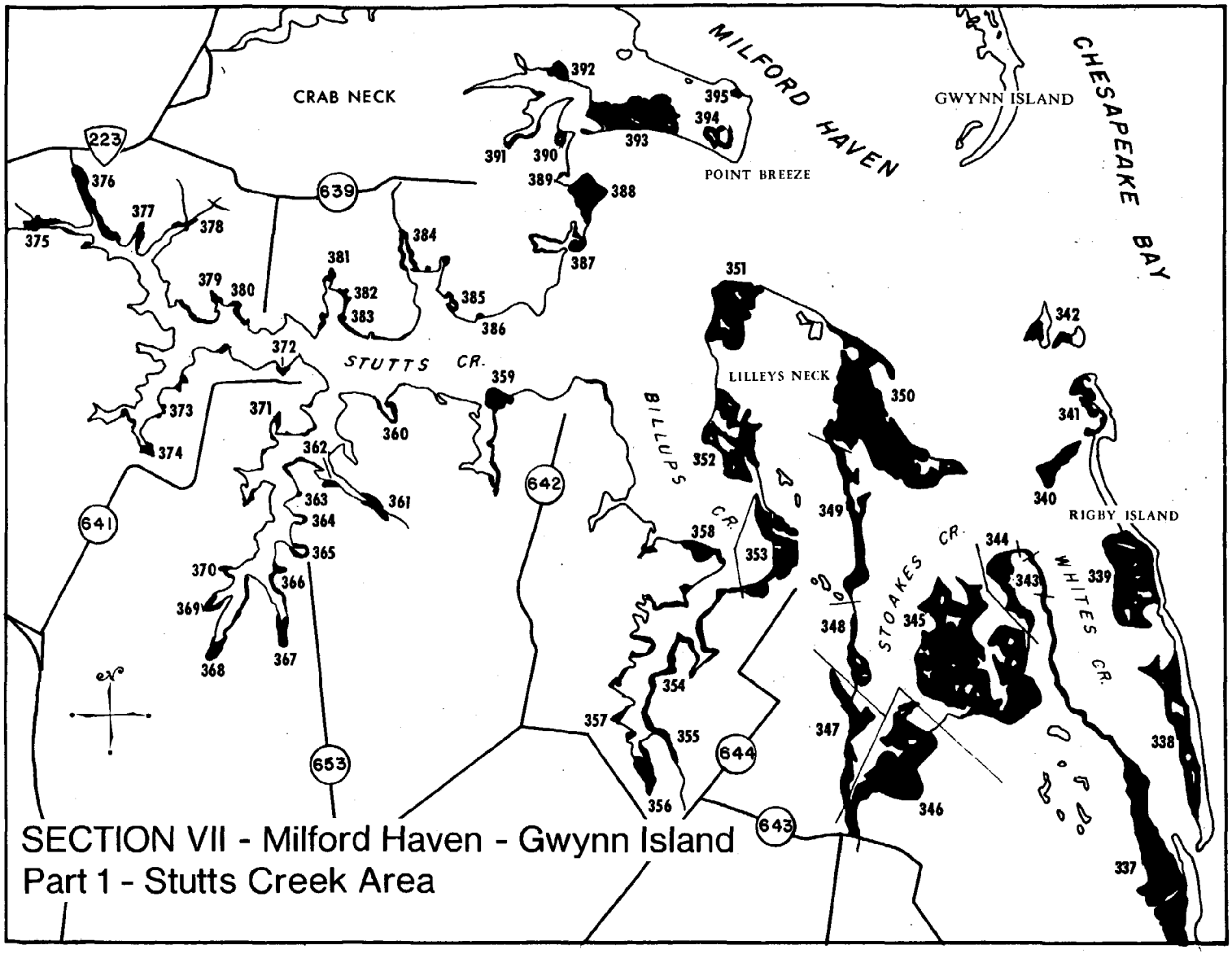
There are 28 pocket marshes in Stutts Creek of which a majority of them are predominantly vegetated with saltmarsh cordgrass. Drainage is usually minimal with no apparent channel or streamlet. Many of these marshes offer sanctuary and food for various species of waterfowl, especially herons.

The wetlands of Part 2 in this section are relatively small pocket or fringing marshes totaling only 40 acres. However, of this total, approximately 23 acres are of the highly productive saltmarsh cordgrass. Often associated with saltmarsh cordgrass in these small marshes is the narrow-leaved cattail, which usually grows along the marsh/upland interface. Although cattails do not tolerate the salinity levels of these brackish wetlands, they do persist in freshwater seepage areas near the margins of the marsh. Although cattails are grass-like in appearance, Typha communities can be easily delineated during the growing season from saltmarsh cordgrass in that cordgrass communities are of a brilliant pea-green color, whereas cattails are bluish-green in contrast.

One of the rarer species of wildlife was observed near marsh No. 396 near Point Breeze. A pair of bald eagles were briefly observed circling in this area. Ospreys and their nests are commonly sited in this section, especially in Milford Haven proper.

The ragged, southern shoreline of Gwynn Island, with its many creeks, coves and peninsulas, contrasts strikingly with the relatively uniform sand beaches on the northeastern and northwestern shoreline. In the protected areas of the southern shore are found nearly all of the island's marshes, totaling slightly more than 50 acres. Most of the marshes here, as in other areas of this section, are small pocket marshes in the coves of small creeks.

The most significant marsh on Gwynn Island is Hill's Creek marsh with 41 acres. This wetland unit, which occupies the mid section of the Sandy Point spit is dominated by black needlerush (80 percent) and is typically fringed with saltmarsh cordgrass. Most of the wetlands in this area of Gwynn Island (Hill's Creek to Barn Creek) are typically Juncus marshes growing on a sandy substrate. The rest of the wetlands on the southern shore (Bark Creek to Wharf Creek) are nearly exclusively saltmarsh cordgrass marshes.


CRAB NECK
MILFORD HAVEN
GWYNN ISLAND
CHESAPEAKE BAY
POINT BREEZE
LILLEYS NECK
STUTTS CR.
BILLUPS CR.
STOAKES CR.
WHITES CR.
RIGBY ISLAND
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SECTION VII - Milford Haven - Gwynn Island
Part 1 - Stutts Creek Area

Section VII. Milford Haven - Gwynn Island. Part 1. Stutts Creek Area.

#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres			
337	Whites Cr.	30	45	13.5	30	9	20	6	5	1.5					6,200	206	Md mainly, Ds
338	Rigby Isl.	17	15	2.5	45	7.6	40	6.8							4,200	247	Sb
339	Rigby Isl.	19	40	7.6	60	11.4									3,000	158	Sb
340	Island near Rigby Isl.	6	20	1.2	80	4.8									2,400	400	Sb
341	Rigby Isl.	4	30	1.2	60		2.4		10	.4					1,800	450	
342	Islands Hole-the-Wall	1	50	.5	50	.5									200	200	mostly sand, unstable
343	Mouth Whites Cr.	.75	15	.1			60	.4	25	.2					800	1,066	Md mainly, Sp
344	Mouth Back Cr.	9	5	.4	40	3.6	30	2.7	25	2.2					2,000	222	scattered cedar and Sb
345	Back Cr. and Stoakes Cr.	62	20	12.4	70	43.4	5	3.1	5	3.1					12,000	193	sandy substrate q
346	Stoakes Cr.	18	40	7.2	60	10.8									4,600	255	
347	Stoakes Cr.	8	70	5.6	20	1.6	5	.4	5	.4					2,400	300	fringing marsh
348	Stoakes Cr.	2.5	35	.9			45	1.1	10	.2			q 10	.2	1,600	640	
349	Stoakes Cr.	12	20	2.4	80	9.6									4,000	333	
350	Stoakes Cr.	50	10	5	70	35	20	10							7,200	144	Sb

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
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f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis

Section VII. Milford Haven-Gwynn Island. Part 1. Stutts Creek Area.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
351	Mouth Billups Cr.	16	45	7.2	45	7.2			10	1.6					2,000	125	sand berm
352	Billups Cr.	12	20	2.4	80	9.6									2,800	233	sand berm, small outlet
353	Billups Cr.	6.5	20	1.3	80	5.2									3,200	493	
354	Billups Cr.	.25	40	.1	60	.1									300	1,200	
355	Upper Billups Cr.	.25	100	.25											800	3,200	
356	Upper Billups Cr.	.5	90	.4			5		5						1,000	2,000	Sb-Md community
357	Upper Billups Cr.	.25	80	.2					20						300	600	
358	Billups Cr.	2	30	.6	10	.2	60	1.2							1,000	4,000	
359	Hudgins Cr.	3.5	100	3.5											800	228	grazed by *horses*
360	Stutts Cr.	.5	80	.4	20	.1									800	1,600	
361	Morris Cr.	.25	100	.25											500	2,000	
362	Morris Cr.	.25	70	.1	30										300	1,200	
363	Morris Cr.	.25	60	.1	40	.1									100	400	
364	Morris Cr.	.25	20		80	.2									150	600	

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
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q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis

Section VII. Milford Haven-Gwynn Island. Part 1. Stutts Creek Area.

#	Place Name	Acres	Ss		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres			
365	Morris Cr.	.33	35	.1	60	.2			5						400	1,212	
366	Morris Cr.	.75	50	.3	50	.3									150	200	Sb
367	Morris Cr.	1.5	80	1.2					10	.1			d 10	.1	1,000	666	
368	Morris Cr.	2	10	.2					80	1.6			h 10	.2	1,300	650	
369	Morris Cr.	.5	80	.4					20	.1					500	1,000	fringe, survey markers
370	Morris Cr.	.25	100	.25											200	800	
371	Morris Cr.	.25	100	.25											200	800	
372	Upper Stutts Cr.	.25	100	.25											150	600	3 pocket marshes
373	Upper Stutts Cr.	.5	90	.4					10						150	300	
374	Upper Stutts Cr.	.5	80	.4					20	.1					300	600	
375	Upper Stutts Cr.	3.5	40	1.4			40	1.4	15	.5			l 5	.1	1,800	514	
376	Upper Stutts Cr.	1.5	40	.6	10	.1			50	.7					1,200	800	
377	Upper Stutts Cr.	.5	50	.2					50	.2					150	300	
378	Upper Stutts Cr.	1	70	.7					30	.3					800	800	

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Ss = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
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h = Foxtail Grass
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k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis

Section VII. Milford Haven-Gwynn Island. Part 1. Stutts Creek Area.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
379	Upper Stutts Cr.	.25	90	.2									h 10		50	200	
380	Upper Stutts Cr.	.25	40	.1	60	.1									50	200	
381	Stutts Cr.	.5	70	.3	30	.1									150	300	2 small marshes
382	Stutts Cr.	.5	40	.2	60	.3									50	100	
383	Stutts Cr.	.25	25		35		35		5						100	400	
384	Stutts Cr.	.25	30		80	.2									400	1,600	fringing marsh
385	Stutts Cr.	.25	20		70	.1			10						250	1,000	
386	Stutts Cr.	.25	5		80	.2			5				d 10		50	200	
387	Mouth Stutts Cr.	.5	20	.1	80	.4									1,000	2,000	surrounded by spoil
388	Crab Neck	6.5	10	.6	90	5.8									1,600	246	sand berm
389	Crab Neck	.75			80	.6			20	.1					500	666	
390	Crab Neck	1.5	5		95	1.4									600	400	
391	Crab Neck	.25	40	.1	60	.1									100	400	
392	Crab Neck	3	10	.3	90	2.7									400	133	

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
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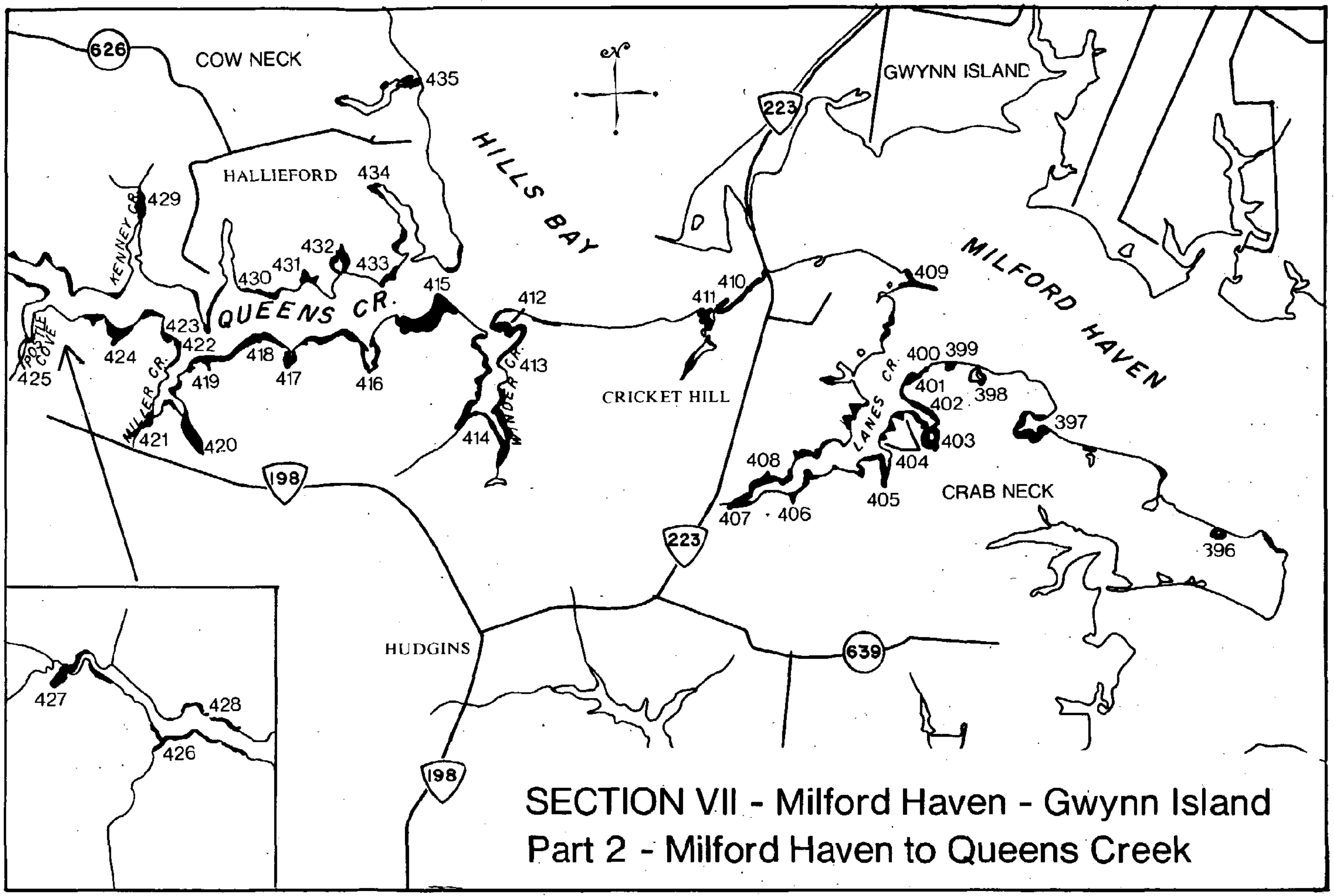
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis

Section VII. Milford Haven-Gwynn Island. Part 1. Stutts Creek Area.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
393	Pt. Breeze	13	30	3.9	60	7.8			10	1.3					3,000	230	
394	Pt. Breeze	2	65	1.3	30	.6			5	.1					1,400	700	sand berm, g
395	Pt. Breeze	1	70	.7	10	.1			20	.2					200	200	
	Sub-total Section VII Part 1	326.33		91.75		183.5		33.1		14.9				.6			

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis


COW NECK
HALLIEFORD
HILLS BAY
GWYNN ISLAND
MILFORD HAVEN
QUEENS CR.
KENNEY CR.
MILLER CR.
WINDER CR.
LANES CR.
CRICKET HILL
CRAB NECK
HUDGINS
626
223
198
639
396
397
398
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SECTION VII - Milford Haven - Gwynn Island
Part 2 - Milford Haven to Queens Creek

Section VII. Milford Haven-Gwynn Island. Part 2. Milford Haven-Queen's Creek.

#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres			
396	Pt. Breeze	.5	80	.4	5				15						200	400	sand berm 2 bald eagles
397	Crab Neck	2	90	1.8	5				5						1,200	600	
398	Crab Neck	.25	90	.2					10						500	2,000	
399	Lanes Cr.	.75	60	.4	35	.2			5						400	533	sand berm fringing marsh
400	Lanes Cr.	.25	25		70	.1			5						300	1,200	sand berm fringing marsh
401	Lanes Cr.	1	20	.2	35	.3	30	.3	15	.1					500	500	
402	Lanes Cr.	.5	20	.1	60	.3			20	.1					600	600	
403	Lanes Cr.	1.5	85	1.3	5		5		5						300	600	fringing marsh
404	Lanes Cr.	1	15	.1	80	.8			5						1,000	666	fringing marsh and pocket marshes
405	Lanes Cr.	.75	85	.6	10				5						600	600	
406	Lanes Cr.	.25	90	.2	5				5						50	200	
407	Lanes Cr.	.75	90	.7					10						600	800	
408	Lanes Cr.	.25	100	.25											150	600	
409	Lanes Cr.	1	30	.3	5		5		60	.6					950	950	

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

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b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
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f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis

Section VII. Milford Haven-Gwynn Island. Part 2. Milford Haven-Queen's Creek.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
410	The Narrows	.5	80	.4									20[a]	.1	800	1,600	
411	The Narrows	3.5	85	2.9					15	.1					1,600	457	
412	Windless Cr.	1.5	---	---	---	---	---	dredged	---	---	---	---	---	---			spoil on marsh
413	Windless Cr.	.5	70	.3	30	.1									600	1,200	fringing marsh
414	Windless Cr.	3	80	2.4					20	.6					2,000	666	twin pocket marshes
415	Mouth Queen's Cr.	6	85	5.1					15	.9					1,800	300	fringing marsh
416	Queen's Cr.	.25	40	.1	50	.1			10						200	800	deep channel
417	Queen's Cr.	.25	80	.2	15				5						50	200	
418	Queen's Cr.	.25	20		80	.2									300	1,200	fringing marsh
419	Miller Cr.	.25	70	.1	30										50	200	
420	Miller Cr.	.5	100	.5											400	800	
421	Miller Cr.	1	60	.6									40[d]	.4	1,000	1,000	
422	Miller Cr.	.25	10		90	.2									500	2,000	fringing marsh
423	Queen's Cr.	.25	10		80	.2									200	800	fringing marsh

*Water Interfsce (ft.) **Interfsce/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
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a = Saltmarsh Bulrush
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l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis

Section VII. Milford Haven-Gwynn Island. Part 2. Milford Haven-Queen's Creek.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
424	Queen's Cr.	.25	80	.2	10				5				d 5		200	800	
425	Queen's Cr.	.25	80	.2					20						50	200	
426	Queen's Cr.	1	80	.8	5				15	.1					800	800	
427	Queen's Cr.	5	20	1	70	3.5			10	.5					2,800	560	
428	Queen's Cr.	.5	80	.4	15				5						100	200	
429	Kenney Cr.	.75	70	.5	30	.2									800	1,066	
430	Kenney Cr.	.25	20		80	.2									200	800	
431	Kenney Cr.	1	25	.2	40	.4							d 35	.3	500	500	2 small coves
432	Kenney Cr.	.25	80	.2	20										400	1,600	mostly fringe
433	Kenney Cr.	.25			80	.2			20						300	1,200	
434	Kenney Cr.	.25	85	.2					5				d 5 e 5		100	400	sand berm
435	Hill's Bay	1.5	95	1.4	5		5										
	Sub-total Section VII Part 2	40		24.25		7.0		.3		3.0				.8			

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
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Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
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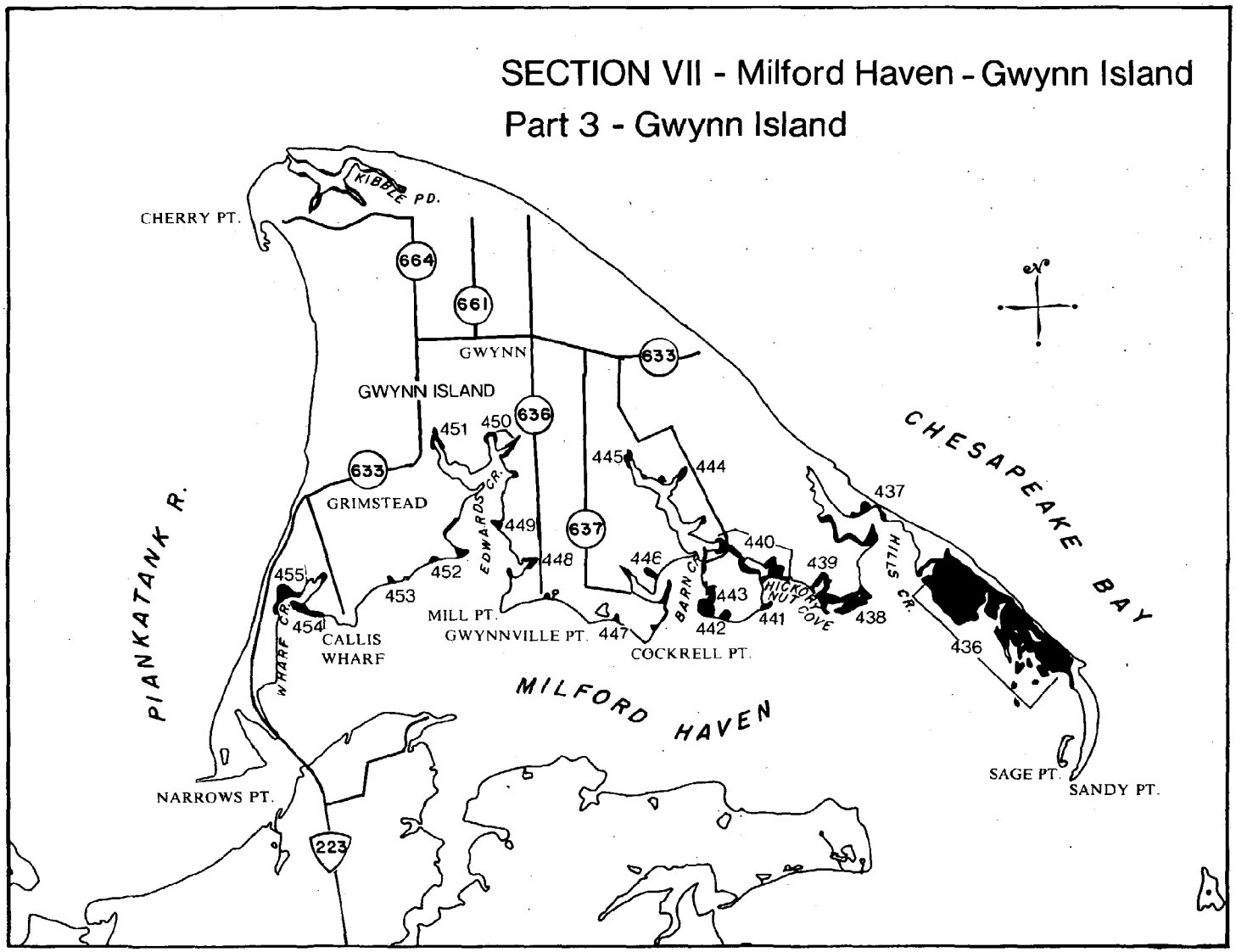
SECTION VII - Milford Haven - Gwynn Island
Part 3 - Gwynn Island
KIBBLE PD.
CHERRY PT.
664
661
GWYNN
633
GWYNN ISLAND
636
451
450
445
444
437
633
GRIMSTEAD
EDWARDS CR.
449
637
440
439
455
452
448
446
BARN CR.
HICKORY NUT COVE
NILES CR.
453
MILL PT.
443
441
438
454
CALLIS WHARF
GWYNNVILLE PT.
447
442
COCKRELL PT.
436
WHARF CR.
PIANKATANK R.
MILFORD HAVEN
CHESAPEAKE BAY
SAGE PT.
SANDY PT.
NARROWS PT.
223

Section VII. Milford Heven-Gwynn Island. Part 3. Gwynn Island.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
436	Hills Cr.	41	20	8.2	80	32.8									6,400	156	Sa margin, ponds
437	Upper Hills Cr.	4	10	.4	90	3.6									2,400	600	sand substrate
438	Mouth Hickory Nut Cove	1.5	15	.2	85	1.2									2,000	1,333	
439	Hickory Nut Cove	.33	50	.1	50	.1									300	909	
440	Hickory Nut Cove	3	35	1	65	2									2,000	666	
441	Hickory Nut Cove	.25	35		30				35						300	1,200	
442	Near Barn Cr.	.25	20		70	.1			10						200	800	
443	Mouth Barn Cr.	1.5	10	.1	85	1.3			5						1,000	666	
444	Barn Cr.	.25	100	.25											400	1,600	
445	Barn Cr.	.25	95	.2					5						200	800	
446	Barn Cr.	.25	100	.25											100	400	
447	Near Gwynnville Pt	.25	95	.2					5						100	400	
448	Mill Pt.	.25	100	.25											200	800	small cove
449	Edwards Cr.	.25	80	.2	10				10						300	1,200	

*Water Interfsce (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
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Sc = Big Cordgrass
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b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
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f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed
p = Wild Rice
q = Sea Lavender
r = Marsh Pink
s = Saltwort
t = Sea Oxeye
u = Fimbristylis

Section VII. Milford Haven-Gwynn Island. Part 3. Gwynn Island.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
450	Edwards Cr.	.25	95	.2					5						400	1,600	
451	Edwards Cr.	.25	100	.25											300	1,200	
452	Edwards Cr.	.75	85	.6			5		10						200	266	sand berm
453	Edwards Cr.	.5	95	.4									d 5		400	800	
454	Edwards Cr.	.75	50	.3					50	.3					800	600	
455	Wharf Cr.	1.5	80	.6			10		10						600	400	
	Sub-total Section VII Part 3	57.3		13.7		41.1				.3							
	Total Section VII	423.63		129.7		231.6		33.4		23.5				1.4			

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Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
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Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane
c = Saltmarsh Aster
d = Cattail
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f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum
j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
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SECTION VIII

Piankatank River

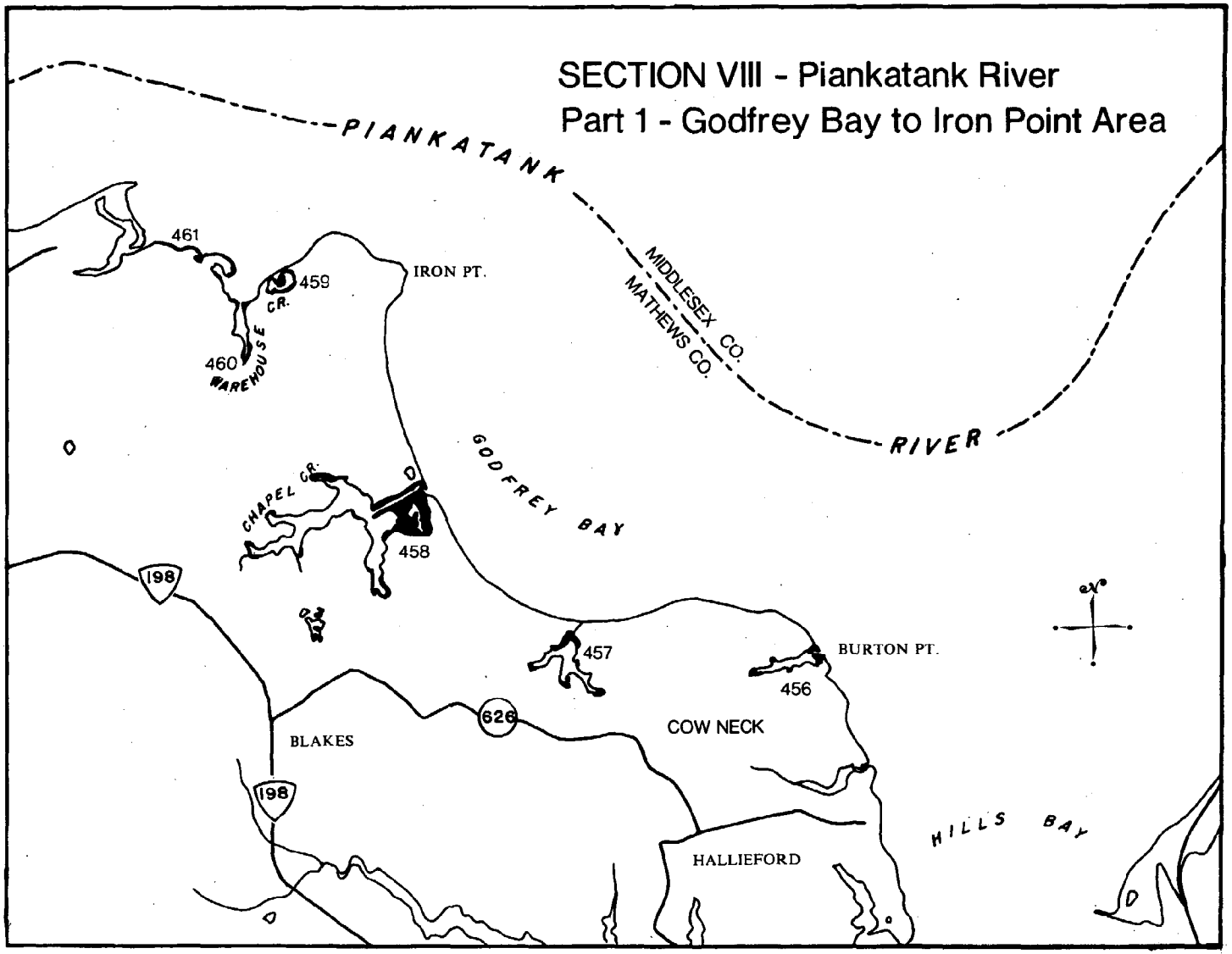
The Piankatank River in Mathews County is noted for its high bluffs and steep banks allowing very few areas for marshes to develop except along tributary streams and in small coves.

One of the most pristine marshes in this section is the Chapel Creek Marsh (No. 458). This marsh is barely noticeable from Godfrey Bay because of a sand berm that supports a dense stand of pines. Various species of waterfowl were observed here.

The largest marsh in this section is the Wadinger Creek Marsh (No. 470) with 17 acres. Here the substrate is predominantly sand and Juncus is the most dominant species.

The marshes of Cobb's Creek could be foreseeably stressed by development and the want for water access by waterfront property owners. There are several areas where dredging and filling operations have already taken place.

Marsh No. 471 lies on the Mathews-Gloucester County line. Most of the marsh is within Gloucester County.


SECTION VIII - Piankatank River
Part 1 - Godfrey Bay to Iron Point Area
PIANKATANK
RIVER
MIDDLESEX CO.
MATHEWS CO.
461
459
IRON PT.
CR.
460
WAREHOUSE
CHAPEL CR.
458
GODFREY BAY
198
457
BURTON PT.
456
626
COW NECK
BLAKES
198
HILLS BAY
HALLIEFORD

Section VIII. Piankatank River. Part 1. Godfrey Bay-Iron Point Area.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
456	Burton Pt.	.75	90	.7	5				5								accretion of sand on marsh Md, a
457	Cow Neck	2											i 70 e 30	1.4 .6	500	250	Sc, j, o, v
458	Chapel Cr.	12	75	9			20	2.4	5	.6					4,600	383	Jr, i, j
459	Near Warehouse Cr.	1.5	90	1.3			5		5						800	533	q well drained, many blue crabs, ponds
460	Warehouse Cr.	.25	70	.1									d 30		200	800	
461	Near Warehouse Cr.	.25	90	.2					10						500	2,000	severe erosion, fringing marsh
	Sub-total Section VIII Part 1	16.75		11.3				2.4		.6				2.0			

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
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Md = Saltgrass Meadow
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Sc = Big Cordgrass
a = Saltmarsh Bulrush
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c = Saltmarsh Aster
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o = Smartweed
p = Wild Rice
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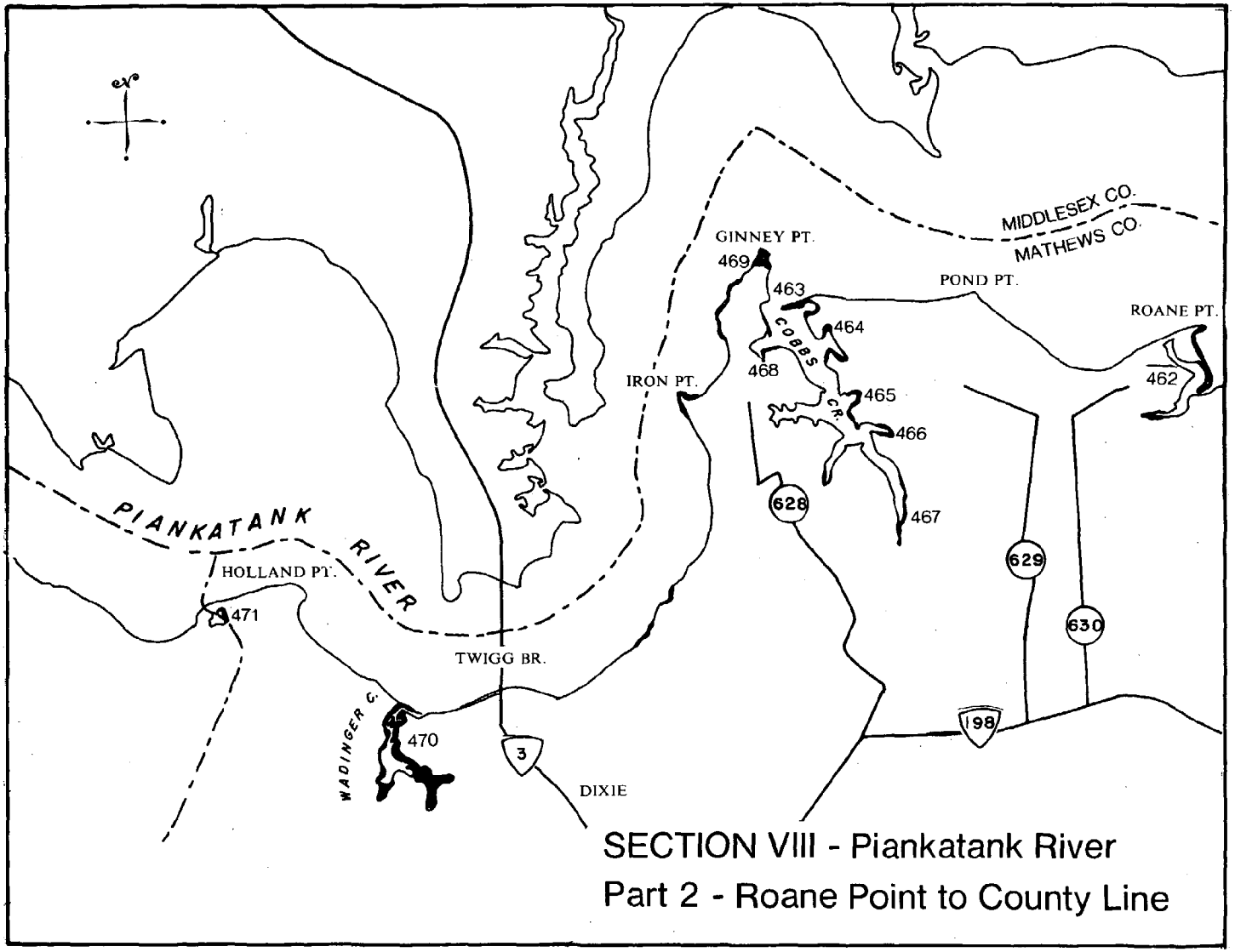
u = Fimbristylis


MIDDLESEX CO.
MATHEWS CO.
GINNEY PT.
469
463
POND PT.
ROANE PT.
464
COBBS CR.
468
IRON PT.
462
465
466
628
467
629
630
PIANKATANK RIVER
HOLLAND PT.
471
TWIGG BR.
WADINGER C.
470
3
198
DIXIE
SECTION VIII - Piankatank River
Part 2 - Roane Point to County Line

Section VIII. Pisankatank River. Part 2. Roane Point to County Line.

#	Place Name	Acres	Sa %	Sa Acres	Jr %	Jr Acres	Md %	Md Acres	Sb %	Sb Acres	Sc %	Sc Acres	Other %	Other Acres	WI*	I/AR**	Observations
462	Roane Pt.	1	85	.8	10	.1			5						1,500	1,500	fringing marsh
463	Cobb's Cr.	.5	35	.1	10		30	.1	25	.1					600	1,200	
464	Cobb's Cr.	.25	70	.1									d 30		200	800	Md mainly, Sp
465	Cobb's Cr.	.33	80	.2	20										200	606	
466	Cobb's Cr.	.5	70	.3									d 30	.1	50	100	
467	Cobb's Cr.		----------				dredged										
468	Cobb's Cr.	.33	85	.3									e 15		50	151	
469	Ginney Pt.	.75	20	.1	70		.5		10						600	800	
470	Wadinger Cr.	17	35	6.	60	10.2							d 5	.8	2,500	147	
471	Co. Line Marsh	.75	60	.4	10		20	.1	10						600	800	Md mainly, Ds
	Sub-total Section VIII Part 2	21.41		8.3		10.3		.2		.1				.9			
	Total Section VIII	38.16		19.6		10.3		2.6		.7				2.9			
	GRAND TOTAL	2937.24		839.8		1247.5		551.6		230.5		40.5		4.4			

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Seltmarsh Cordgrass
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Md = Saltgrass Meadow
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Sc = Big Cordgrass
a = Saltmarsh Bulrush
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s = Seltwort
t = Sea Oxeye
u = Fimbristylis