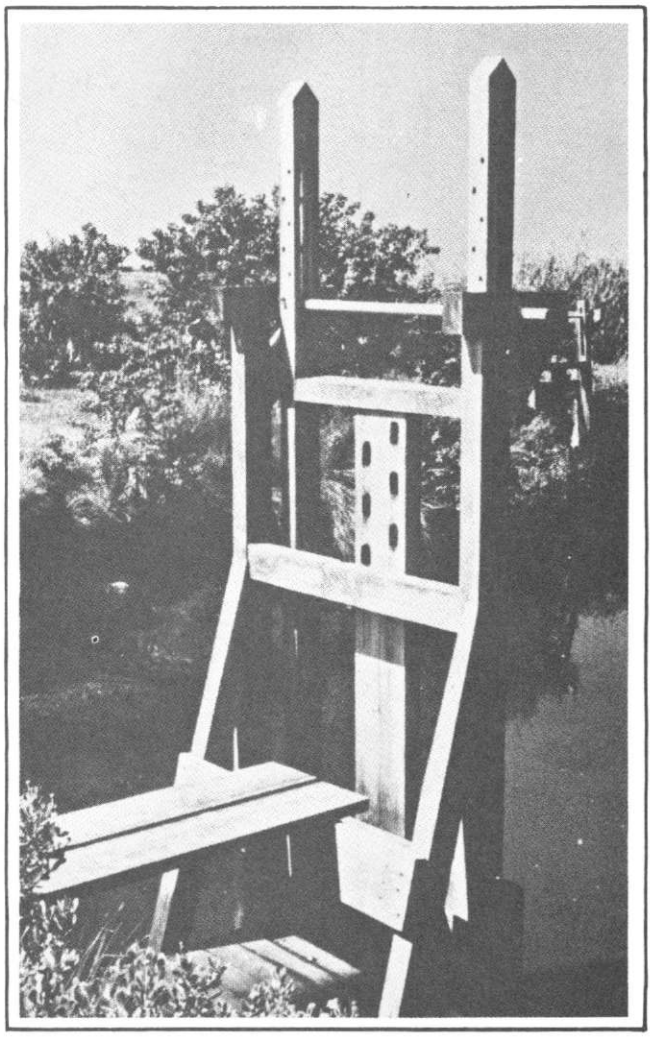
South Carolina
Sea Grant Consortium

SOUTH CAROLINA COASTAL WETLAND IMPOUNDMENTS:

Ecological Characterization, Management, Status, and Use

Volume III: Technical Appendix



Edited by
M. Richard DeVoe
Douglas S. Baughman

Technical Report #SC-SG-TR-86-3

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PREFACE

Coastal wetland impoundments, remnants of a once-flourishing rice culture industry, are the focus of a wetlands management controversy in the State of South Carolina. At one time, impoundments comprised approximately 29% of the State's 504,000 acres of tidal wetlands. Approximately 15% of these wetlands are currently impounded and are managed primarily for waterfowl habitat. Recent interest in reimpounding formerly impounded wetlands for additional waterfowl habitat and aquaculture has raised a number of ecological, policy and management questions. The controversy has focused on the question of how the state should regulate and monitor activities proposed for wetland areas which had been or are now impounded.

The Coastal Wetland Impoundment Project (CWIP) was designed to generate the first comprehensive characterization of a coastal impoundment system in South Carolina. The purpose of this investigation was to develop an information base which could be used by policy-makers and regulatory agencies to address the complex questions surrounding this valuable state resource.

The CWIP, a multi-institutional effort, was conducted at the Tom Yawkey Wildlife Center, near Georgetown, S. C., from summer 1982 to spring 1985. Each element of this four-year effort was reviewed by a peer group of scientists in each area to maintain scientific quality. The results of the CWIP are presented in three volumes: Volume I - Executive Summary; Volume II - Technical Synthesis; and Volume III - Technical Appendix. Volume I provides a concise statement of the research findings, along with a summary of research, management, and policy recommendations. Volume II contains the detailed results of the CWIP and has been organized into nine sections. Volume III provides supplemental technical data and information which support the results presented in Volume II. As a whole, the three-volume synthesis represents the efforts of a variety of individuals involved in the CWIP during the last four years.

Due to the number of perspectives represented in the CWIP synthesis, the terms "coastal wetland impoundments", "impoundments", "former rice fields", "diked wetlands", "impounded wetlands" and "managed wetlands" have been used interchangeably.

Any opinions expressed within the chapters of Volume II are those of the individual authors and not necessarily those of the editors or the South Carolina Sea Grant Consortium.

ACKNOWLEDGEMENTS

In a large research project such as the CWIP the list of individuals that deserve acknowledgement can be very long. During the four years of this study, the assistance of many persons was critical to the success and completion of this project; we would like to thank each person for his/her assistance. Additionally, each chapter in Volume II acknowledges the individuals associated with the research task. The acknowledgements cited here are those of the editors and the South Carolina Sea Grant Consortium.

We would like to thank the Trustees of the Tom Yawkey Wildlife Center and the South Carolina Wildlife and Marine Resources Department for allowing the research to be conducted on the Cat Island Impoundments. Special thanks are extended to Mr. R. Joyner, Resident Biologist and Project Leader, Tom Yawkey Wildlife Center, for his cooperation throughout the four years of the study.

We are indebted to S. Olsen, J. Kraeuter, L. Barclay, W. Kitchens, R. E. Turner and P. Hodson for critical review and comment on the scope and direction of the project. Additionally, a number of scientists assisted in reviewing the individual chapters in Volume II. Their efforts are greatly appreciated. Phil Wilkinson, G. Reeves and K. Williams are acknowledged for providing technical assistance on impoundment management.

Special thanks are due to Carole Olmi for her assistance in the synthesis and preparation of Volume II. Andrew Mount also assisted in the preparation of the three-volume document, while Anne Hill provided writing, editorial and production assistance. Their efforts are gratefully acknowledged.

We are especially appreciative of the efforts of Annette Wilson, who spent many hours and exhibited extreme patience in typing and word processing the document. Monica Mulvey and Pattie Christian are thanked for providing additional assistance with the typing effort. Thanks also to Wyatt Coon of the S. C. Wildlife and Marine Resources Department for his assistance with the computer system used for word processing. Karen Swanson and Lucy Hollingsworth are commended for the production of the numerous figures and graphs.

The editors acknowledge the assistance of Frances Tindall for copy editing the entire Volume II. Her expertise and experience were important to the completion of this document.

This project was funded by the National Sea Grant College Program and the South Carolina Sea Grant Consortium. We would like to thank Ms. Margaret A. Davidson, Consortium Executive Director, and Dr. David Dunne, Sea Grant College Program Monitor, for their support and encouragement throughout the four years of the study.

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Appendix Table 5.1

Sediment descriptions of long cores. Core identification codes refer to pond number and quadrant (Fig. 5.2). Recovery refers to length of recovered sample (numerator) and total length cored (denominator).

No.	Location	Depth (cm)	Description
1	1-NW		(Recovery: 70/100)
		0- 3	organics
		3-70	gray silt, clayey; var. fib. root zones
2	1-NE		(Recovery: 95/100)
		0-50	gray clay, silty; thin root zone
		50-95	brownish gray; as above
3	1-SE		(Recovery: 55/100)
		0-10	gray clay; firm
		10-20	tan silt
		20-40	gray clay
		40-55	brown clay
4	1-SW		(Recovery: 40/100)
		0-15	brown clay, root fibers
		15-40	gray silt, few roots
5	1-SW		(Recovery:190/200)
		0-10	brown organic clay; pH=6; Sal=18 ppt.
		10-90	dk. gray silt; layers of brown organics
		90-100	no recovery
		100-200	gray silt
		100-200	textural analysis: sand-3%/silt-95%/clay-2%

Appendix Table 5.1 Continued

No.	Location	Depth (cm)	Description
6	2-NE		(Recovery: 60/100)
		0-10	dk gray to black organic silt
		10-20	gray silt, clayey; few organics
		20-45	same as 10-20
		45-60	brown fibrous silt
7	2-NE		(perimeter ditch; sample on canoe paddle blade!)
		0-50	(approx.) dk. black organic muck; soupy
			textural analysis: silt-80.1%/clay-19.9%
			moisture content-82%
8	2-SC		(Recovery: 70/100)
		0-10	organic clay; fibrous
		10-20	gray silt; no roots
		20-30	brown fibrous sediment with permeability
		30-70	silt, clayey
9	3-SC		(Recovery: 65/160)
		0-10	brown organic silt; Sal=22 ppt.; pH=7
		10-65	dk gray silt; layers of brown organics
		65-160	no recovery
		160	hard sand
10	4-NW		(Recovery: 70/200)
		0-10	brown organic silt; pH=6.0
		10-55	dk gray clay
		55-70	brown organic clay
		70-200	no recovery

Appendix Table 5.1 Continued

No.	Location	Depth (cm)	Description
11	4-NE		(Recovery: 80/100)
		0-20	buff silt
		20-80	gray clay; sticky
		80-100	no recovery
12	4-C		(Recovery: 85/100)
		0-20	buff silt
		20-65	gray clay; sticky
		65-85	brown fibrous layer
		85-100	no recovery
13	4-SW		(Rec. 170/170)
		0-10	brown, organic silt
		10-50	dark gray clay
			textural analysis-Sand-0%/silt-38%/clay-62%
		50-90	brown, org. silt
		90-100	dark gray silt; firm
		100-130	dark gray silt; soft
		130-170	wood; pH=6
		170	sand; hard
14	4-SE		(Recovery: 65/100)
		0-10	brown silt; fibrous
		10-65	gray clay; sticky
15	5-NE		(Recovery: 60/100)
		0- 4	organic layer; roots
		4-20	buff silt, clayey; soft
		20-60	dk gray silt, clayey; little organics; sticky

Appendix Table 5.1 Continued

No.	Location	Depth (cm)	Description
16	5-SW		(Recovery: 280/300)
		0-40	gray-brown organic silt; soft
		40-80	gray silt; clayey; firm; pH=6.5; Sal=26 ppt.
		80-100	no recovery
		100-170	gray silt
		170-200	brown-gray silt; organic; soft; roots
		200-300	as above; pH=6.0
17	6-NE		(Recovery: 300/300)
		0-300	brownish gray silt; var. fibrous layers.

Appendix Table 5.2

Sand/silt/clay ratios of supplementary short cores.

(See Fig. 5.2 for location of sampling sites).

No.	Location	% sand	% silt	% clay
18	1-NW	5.4	54.3	40.3
19	1-NE	2.2	37.4	60.4
20	1-SE	0.0	30.1	69.9
21	1-SW	0.0	43.2	56.8
22	1-E	0.0	43.3	56.7
23	Marsh-1	0.0	48.0	52.0
24	Marsh-3	0.0	49.5	50.5
25	Creek-2A	67.2	6.0	26.8
26	Creek-2B	69.1	4.1	26.8
27	Creek-3	82.5	7.8	9.7
28	2-NE;0-10 cm	1.6	86.5	11.9
	10-20 cm	1.8	22.4	75.8
29	2-NE	0.0	80.1	19.9
30	2-SC	1.1	20.3	78.5
31	2-E	0.0	50.7	49.3
32	4-NW	1.6	31.7	66.8
33	5-NE	0.0	18.5	81.5

Appendix Table 5.3

Depth to sand/shell layer beneath marsh sediments as determined by steel probe. Location number refers to pond number and portion of pond (NE = northeast, etc.).

Location	Depth (m)	Depth (ft)	
1-NC	2.3	7.5	
SC	3.4	11.0	
NW	3.7	12.0	
NE	3.7	12.0	
SW	2.9	9.5	
2-NE	>3.8	>12.5	
NE	2.4	8.0	
NC	3.4	11.0	
NC	>3.8	>12.5	
NC	2.7	9.0	(thin layer)
	>3.0	>10.0	
NW	2.7	9.0	(thin layer)
	>3.8	>12.5	
EC	>3.8	>12.5	
C	2.1	7.0	
SC	2.0	6.5	
3-NC	2.0	6.5	
SC	1.5	5.0	
4-NC	1.5	5.0	
NW	2.6	8.5	(thin layer)
	3.7	12.0	
NW	3.0	>10.0	
C	2.6	8.5	
NE	2.1	7.0	
NE	1.8	6.0	
EC	3.0	>10.0	

Appendix Table 5.3 Continued

Location	Depth (m)	Depth (ft)
4-NC	2.3	7.5
WC	2.3	7.5
5-NC	>3.8	>12.5
6-NE	>3.8	>12.5

Appendix Table 5.4

Salinity measurements of ground and surface waters.

LOCATION	8/16	8/25	11/04	12/09
6-NE-2.5m			8	12
1.0m			6	14
4-SW-2.5m	19	20	20	20
1.0m	22		19	20
surface	20	20	27	28
4-SE-2.5m	9	6	6	9
1.0m	9	10	5	9
surface	16	20	29	28
4-C-2.5m	23	16	16	20
1.0m	24	24	24	23
surface	19	20	29	28
4-NE-2.5m	20	20	18	18
1.0m	18	20	19	19
surface	16	20	28	28
4-NW-2.5m	20	18	19	19
1.0m	21	20	24	25
surface	18	19	29	28
Chainey Cr. (high tide)	18			
2-C-2.5m	17	4		
1.0m	18	8		
surface	20	18		
2-NE-2.5m	15	5		
1.0m	15	13		
surface	16	18		
2-NC-2.5m	15	4		
1.0m	16	17		
surface	16	20		

Appendix Table 5.5

Chemical analyses for NH_4, NO_2-NO_3, and o-PO_4 (ppm). Sampling locations are shown in Fig. 5.2. The numbers "3.0" and "1.5" refer to the 3m and 1.5m piezometers.

	/ NH_4			/ NO_2-NO_3			/ o-PO_4		
STA. NO.	MAY	JUL	AUG	MAY	JUL	AUG	MAY	JUL	AUG
	30	24	25	30	24	25	30	24	25
7SW3.0	----	4	1361	----	258	557	----	49	61
6NW3.0	----	90	1077	----	254	63	----	143	3
4SW3.0	----	38	3591	----	83	35	----	1	24
4SW1.5	----	25	3645	----	93	34	----	12	58
4SE3.0	----	67	3403	----	129	255	----	1130	955
4SE1.5	----	7	3763	----	69	830	----	283	49
4 C3.0	1599	2840	3344	32	447	286	3	5	6
4 C1.5	2523	1138	5727	33	46	61	-11	8	6
4NE3.0	----	405	3827	----	153	173	----	30	1
4NE1.5	----	401	3698	----	113	7136	----	53	25
4NW3.0	1396	0	3267	68	366	261	-1	108	498
4NW1.5	2460	1764	1358	563	426	279	30	1	12
2 C3.0		-1	1406		36	210		5	248
2 C1.5		-2	1267		96	114		-1	8
2NE3.0		---	3969		---	163		---	24
2NE1.5		22	3285		183	565		-5	2
2NC3.0		---	3704		---	283		---	14
2NC1.5		0	5338		73	1786		15	6
3/4DIKE		4047	3066		589	421		12	1
2 DIKE		7	3462		386	405		338	286
1/2DIKE		2	3420		163	248		1099	767

Appendix Table 5.6

Piezometer locations for dike seepage study.

Pond 1/2 dike: located 26 m west of Chainey Creek road; three wells- one in center of dike road, one 3 m north of corner and one 3.4 m south of center; 3.8 cm slotted PVC with screen.

Pond 2/Chainey Creek dike: located 161 m north of SE corner of pond 2; three wells- one in center of road, one 3 m west of center and one 3 m east of center; 3.8 cm slotted PVC with screen.

Pond 3/4 dike: located 32 m west of Chainey Creek road; three wells- one in center of road, one 3 m south of center and one 3 m north and 6 m east of center; 3.8 cm PVC pipe.

Pond 4/Chainey Creek dike: located 16 m north of SE corner of pond 4; three wells- one in center of road, one 3 m east of center and one 3 m west of center; 3.8 cm slotted PVC pipe with screen.

Appendix Table 5.7

Sediment descriptions of piezometer holes bored on dikes. (Depths in cm).

Pond 4/Chainey Creek Dike; west side:

0 - 30	Loose gravel and unconsolidated soil
30 - 60	Clay
60	Water table
60 - 120	Loose, wet organic clay, black
120 - 240	Gray clay, wet, very fine, sticky

Pond 4/Chainey Creek Dike; east side:

0 - 90	Loose gravel and dry, unconsolidated soil
90 - 168	Wet soil at top; gray clay layer
168 - 174	Loose organic layer
174 - 240	Gray clay, wet, very fine

Pond 4/Chainey Creek Dike; center of road:

0 - 30	Sand and loose soil
30 - 120	Sticky gray clay
120 - 150	Organic clay layer, wet
150 - 180	Gray clay, wet
180 - 240	Same, but less moisture

Pond 4/5 Dike; south-central edge of pond 4:

0 - 30	Gravel
30 - 110	Clay, samples at 30, 73, 82 cm.
110 - 140	Organic layer, leaves and bark; samples at 110 and 119 cm.
140 - 240	Gray clay, damp, sample at 180 cm.

Appendix Table 5.8

Water level elevations in impoundments, dike piezometers, and Chainey Creek (cm).

Station	Date 06/12	07/24	08/31	10/03	11/04	11/05	12/05
Pond 1	98	---	---	---	---	---	---
Pond 1/2 dike							
North Well	---	---	109	112	---	126	113
Center Well	---	---	100	105	---	118	124
South Well	---	---	98	101	---	116	114
Pond 2	84	84	---	101	---	117	---
Dike 2/Chainey							
West Well	---	93	87	102	---	117	116
East Well	---	111	100	107	---	111	112
Chainey Creek	12	12	---	55	109	85	67
Pond 3	88	---	---	---	---	---	---
Pond 3/4 Dike							
North Well	---	---	99	109	---	---	---
South Well	---	---	118	118	---	---	---
Pond 4	96	---	---	---	127	123	117
Dike 4/Chainey							
West Well	---	---	107	111	126	125	127
East Well	---	---	89	100	116	108	112
Chainey Creek	12	12	---	55	109	85	67

SECTION IV

PRIMARY PRODUCTIVITY AND SYSTEMS METABOLISM

Appendix Table 7.1

Vascular plant species and code numbers used in Vegetative cover maps.

Code Number	Plant Species
1A	short *Spartina alterniflora*
1B	tall *S. alterniflora*
1C	medium *S. alterniflora*
2	*S. cynosuroides*
3	*Scirpus robustus*
4	*Salicornia europea*
5	*Distichlis spicata*
6	*Aster subulatus*
7	*Cyperus sp.*
8	*Ruppia maritima*
9	*Typha angustifolia*
10	*Spartina patens*
11	*Eleocharis parvula*
12	*Scirpus validus*
13	*Pluchea purpurescens*
14	unknown grass
15	*Typha latifolia*

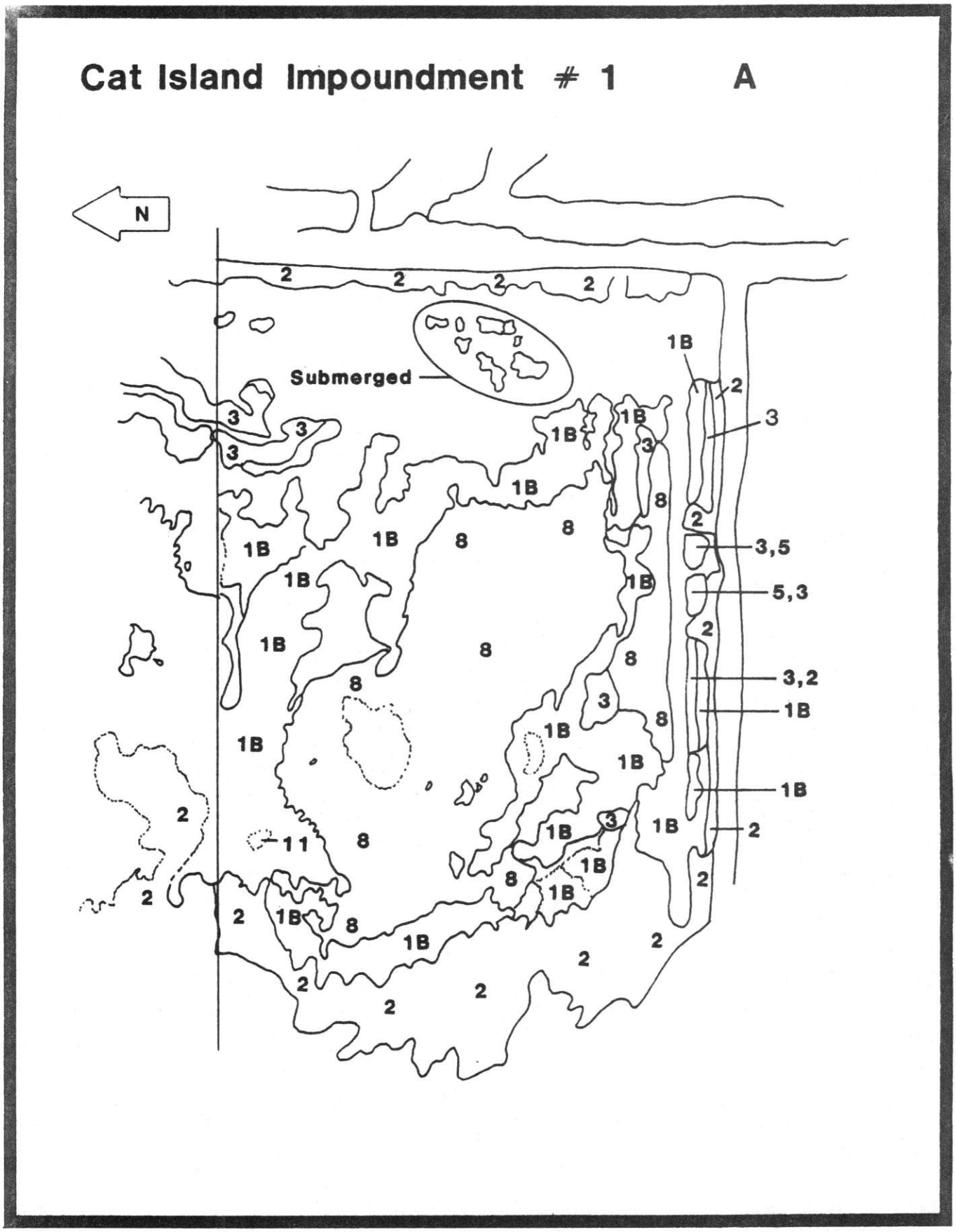

Figure 7.1 Vascular plant cover for impoundment 1 (Part A)

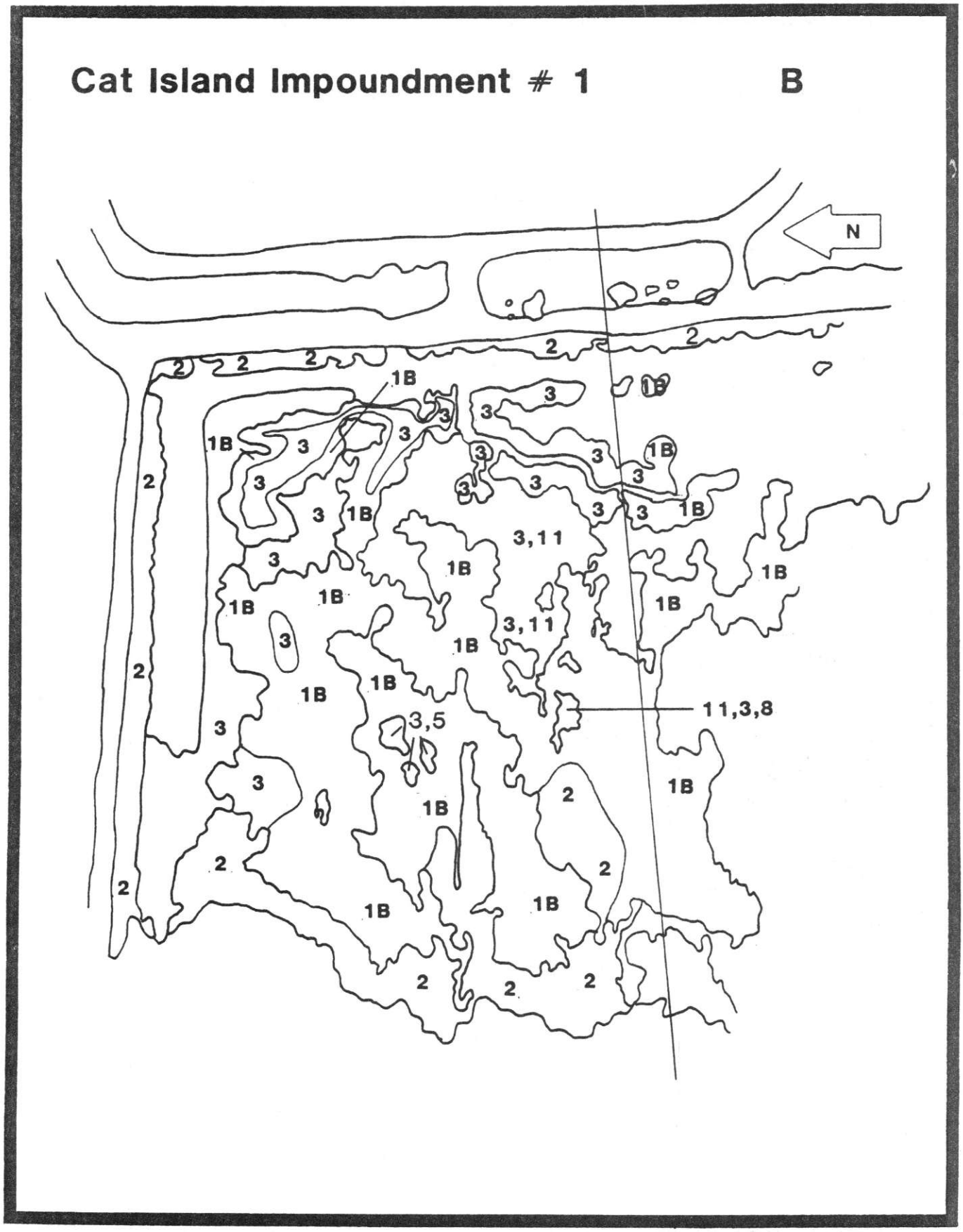

Figure 7.2 Vascular plant cover for impoundment 1 (Part B)

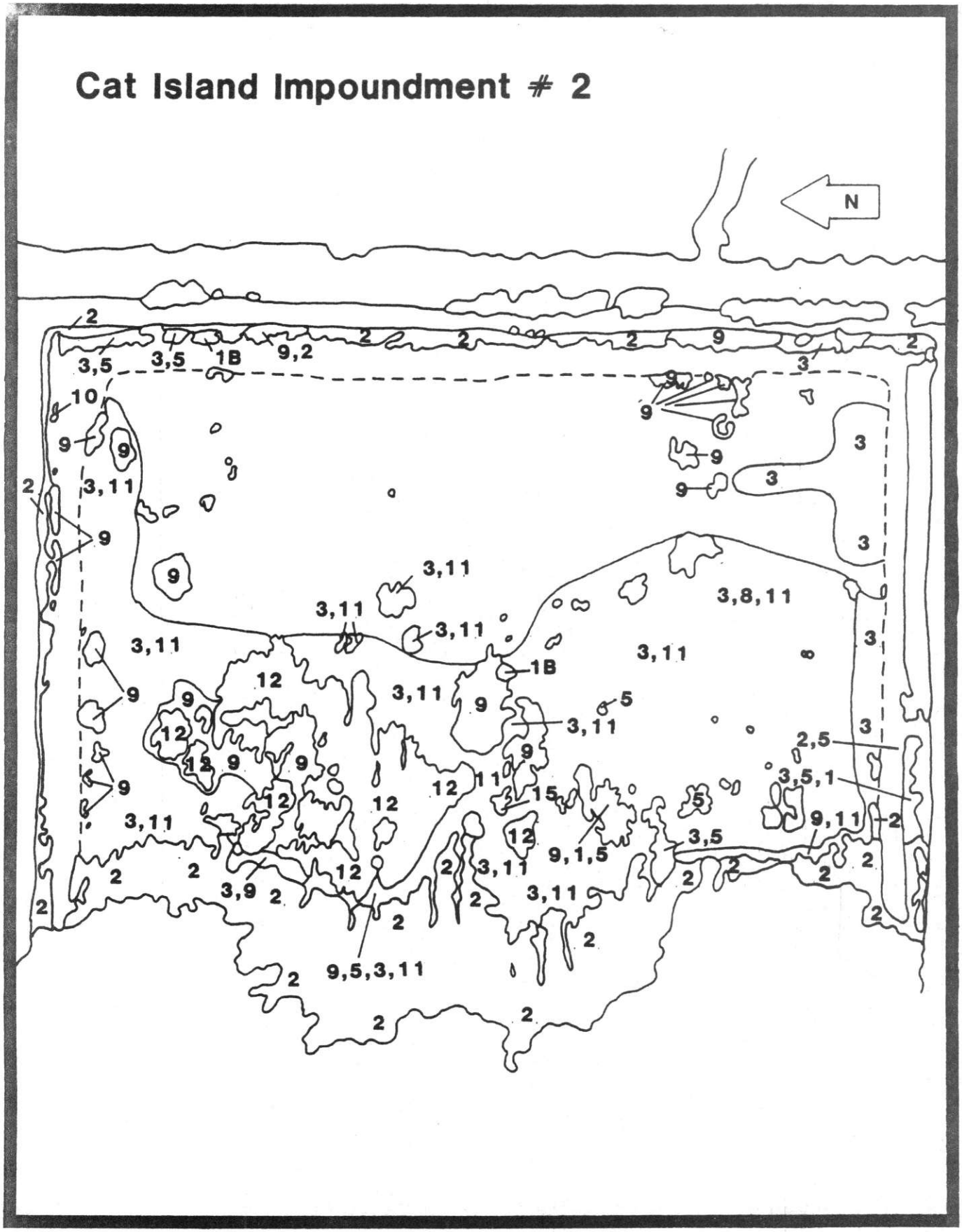

Figure 7.3 Vascular plant cover for impoundment 2

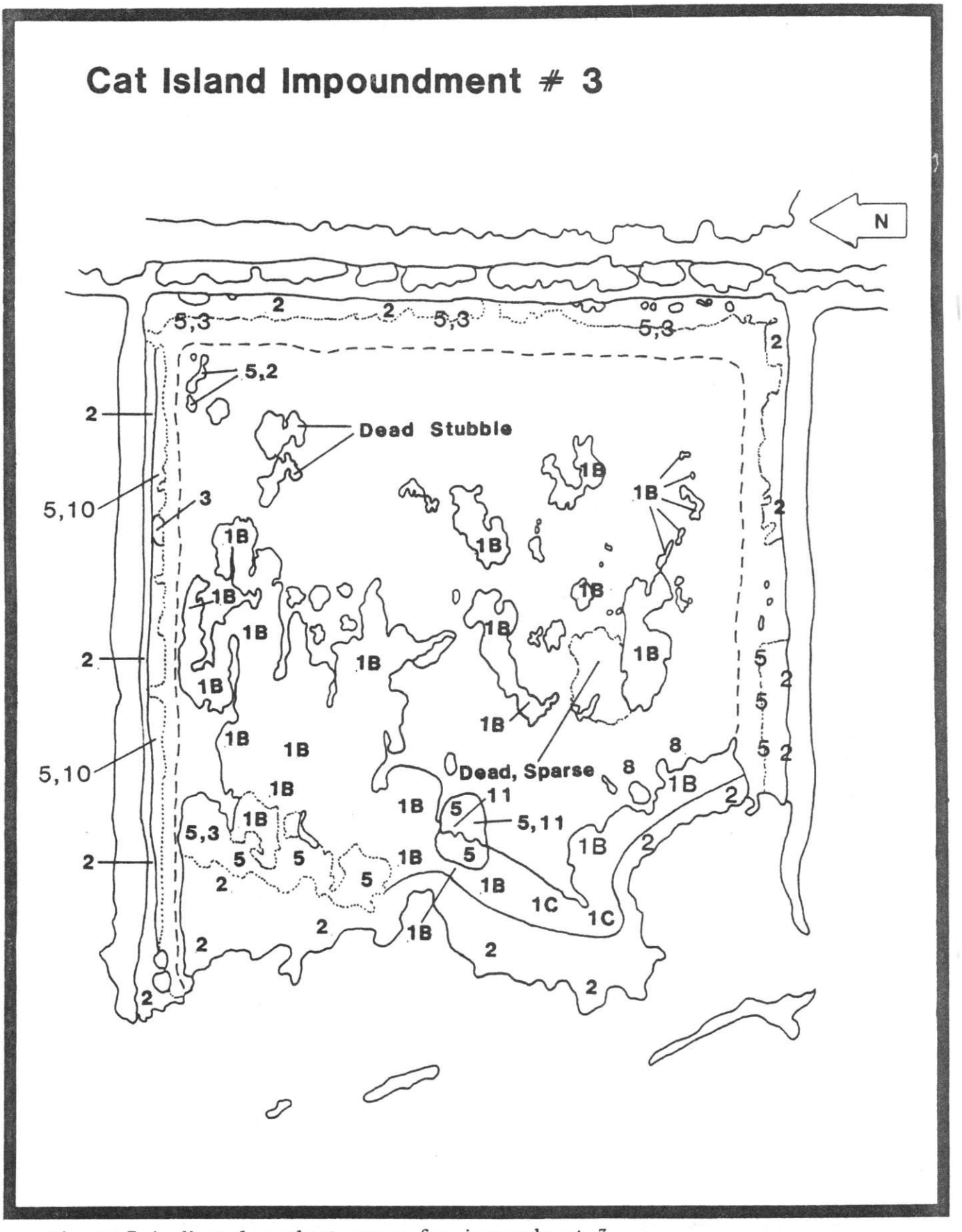

Figure 7.4 Vascular plant cover for impoundment 3

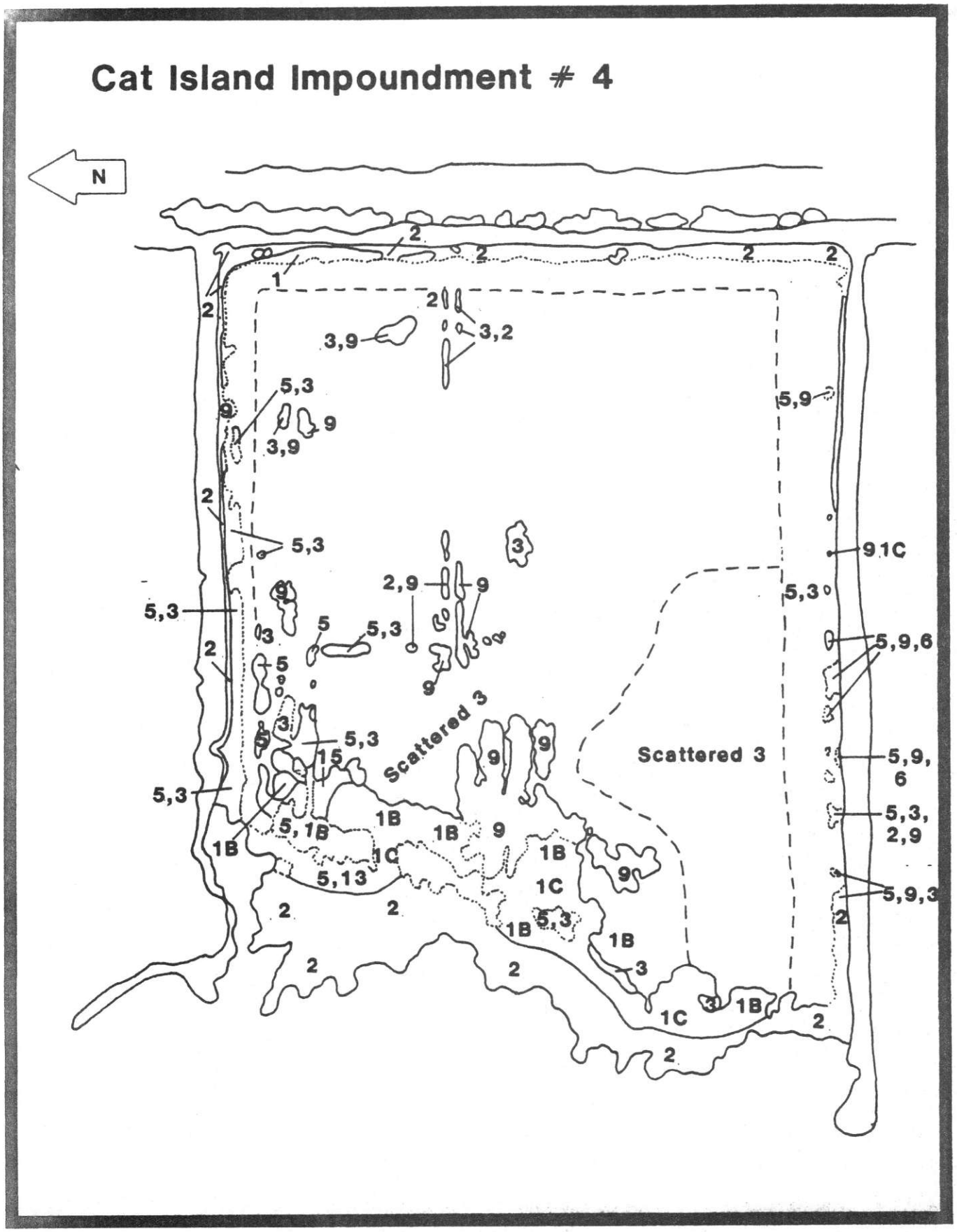

Figure 7.5 Vascular plant cover for impoundment 4

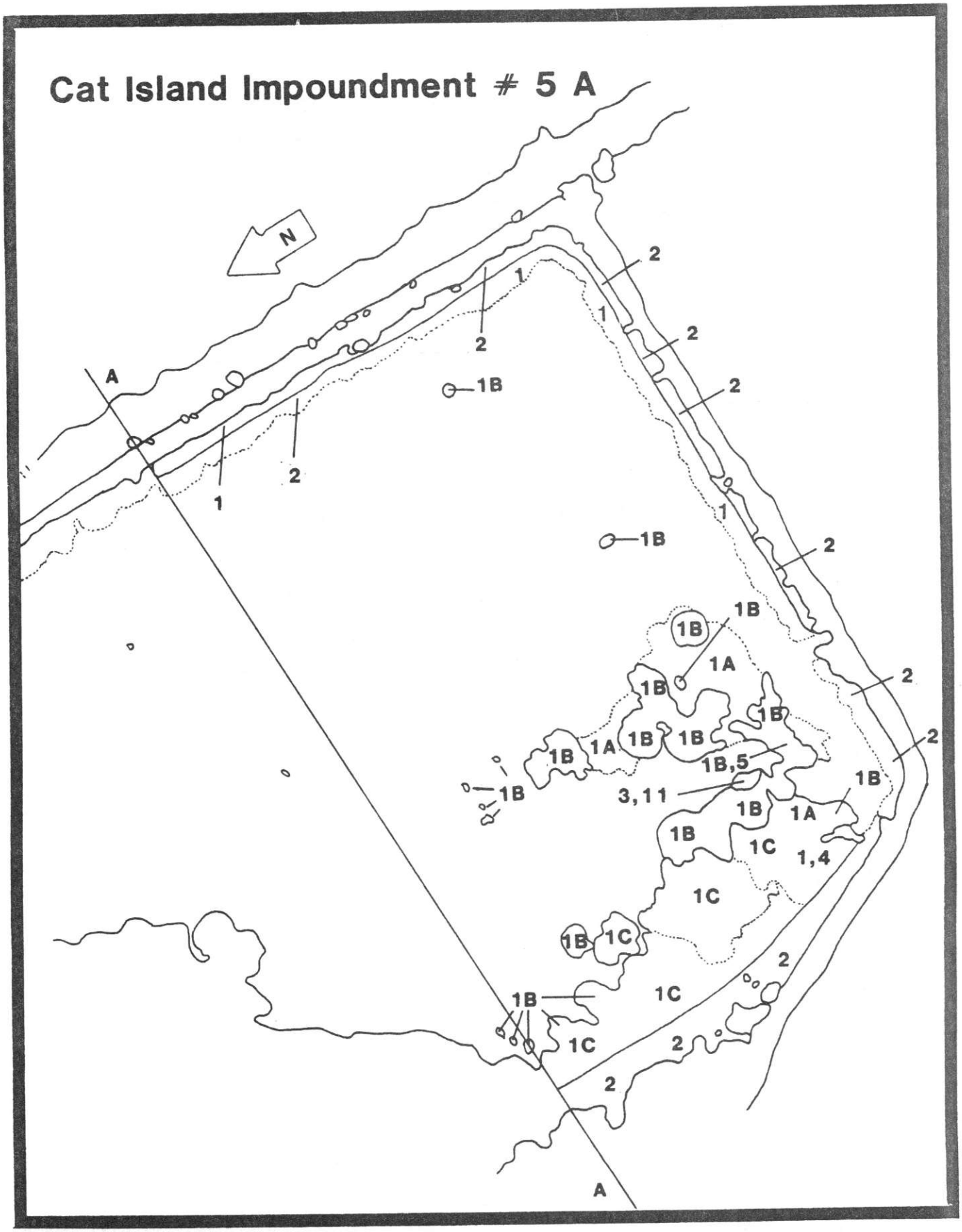

Figure 7.6 Vascular plant cover for impoundment 5 (Part A)

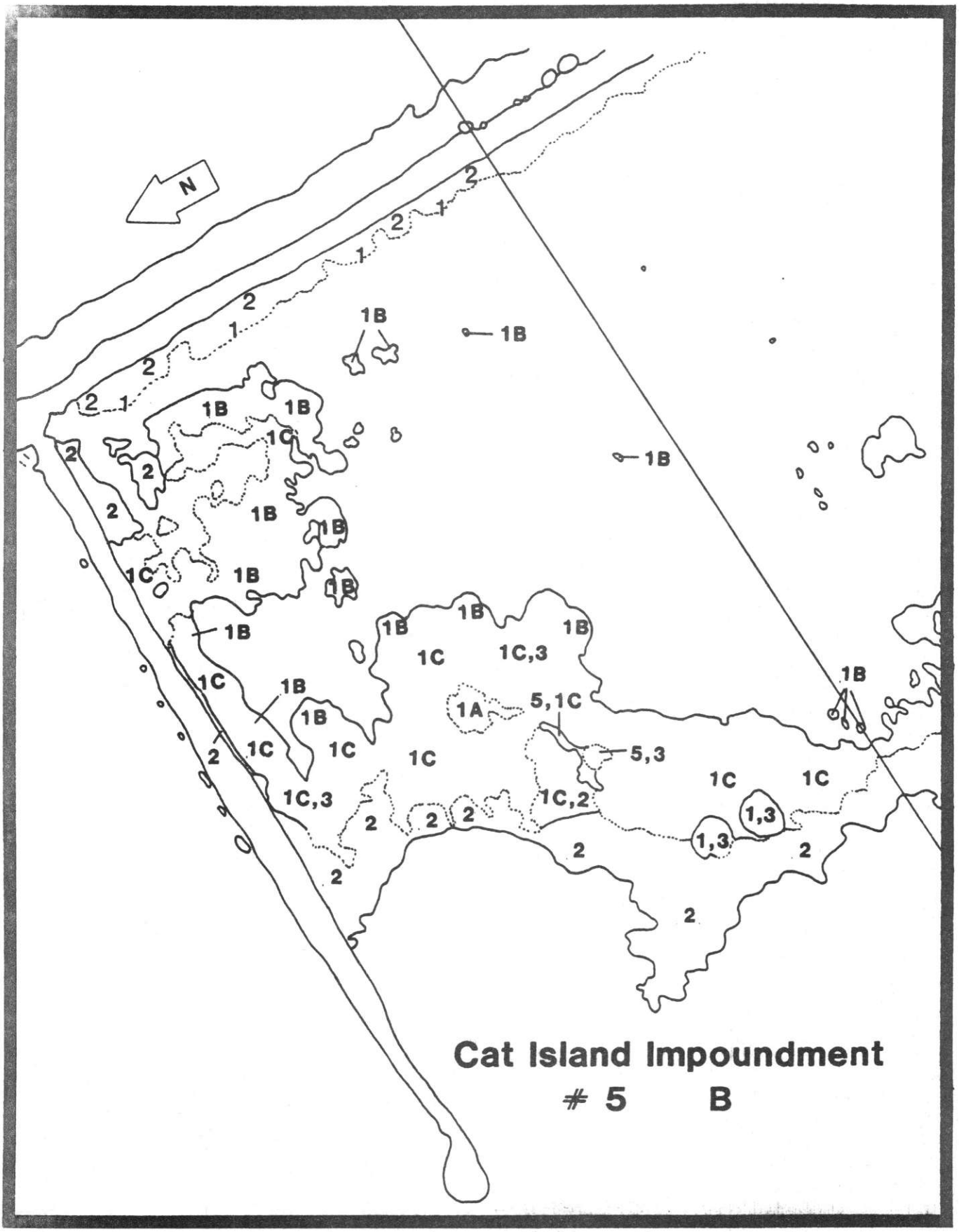

Figure 7.7 Vascular plant cover for impoundment 5 (Part B)

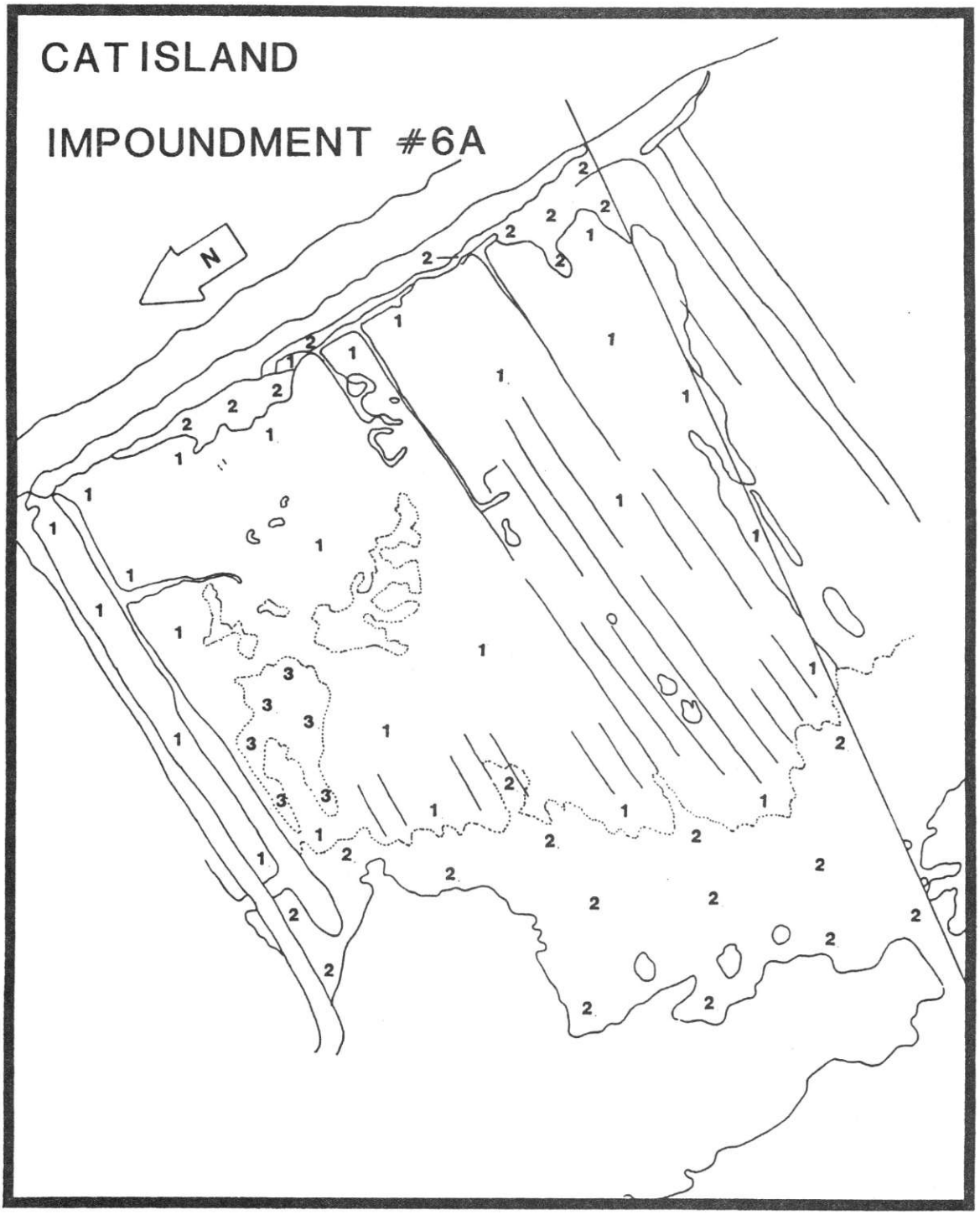

Figure 7.8 Vascular plant cover for impoundment 6, the tidal impoundment (Part A)

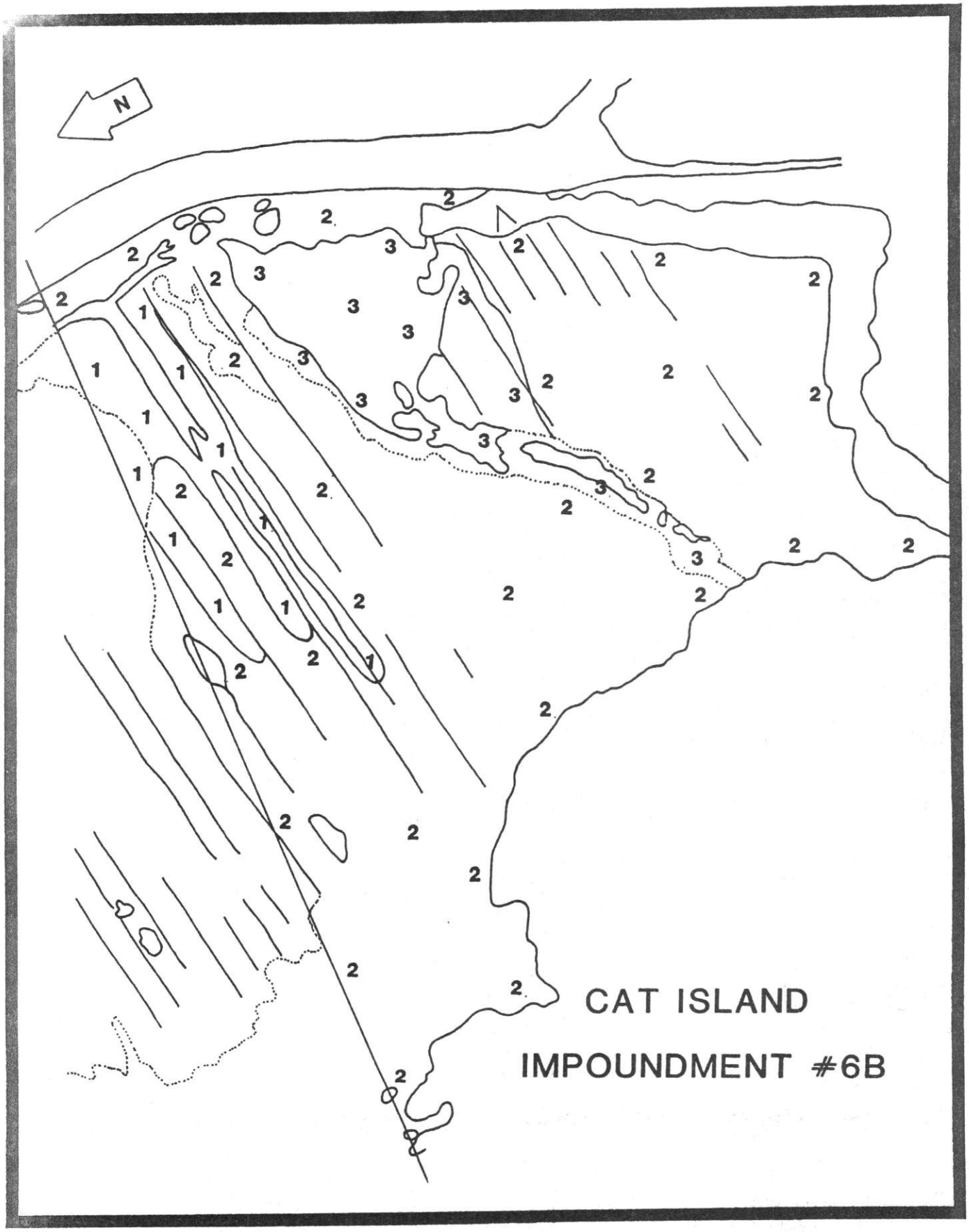

Figure 7.9 Vascular plant cover for impoundment 6, the tidal impoundment (Part B)

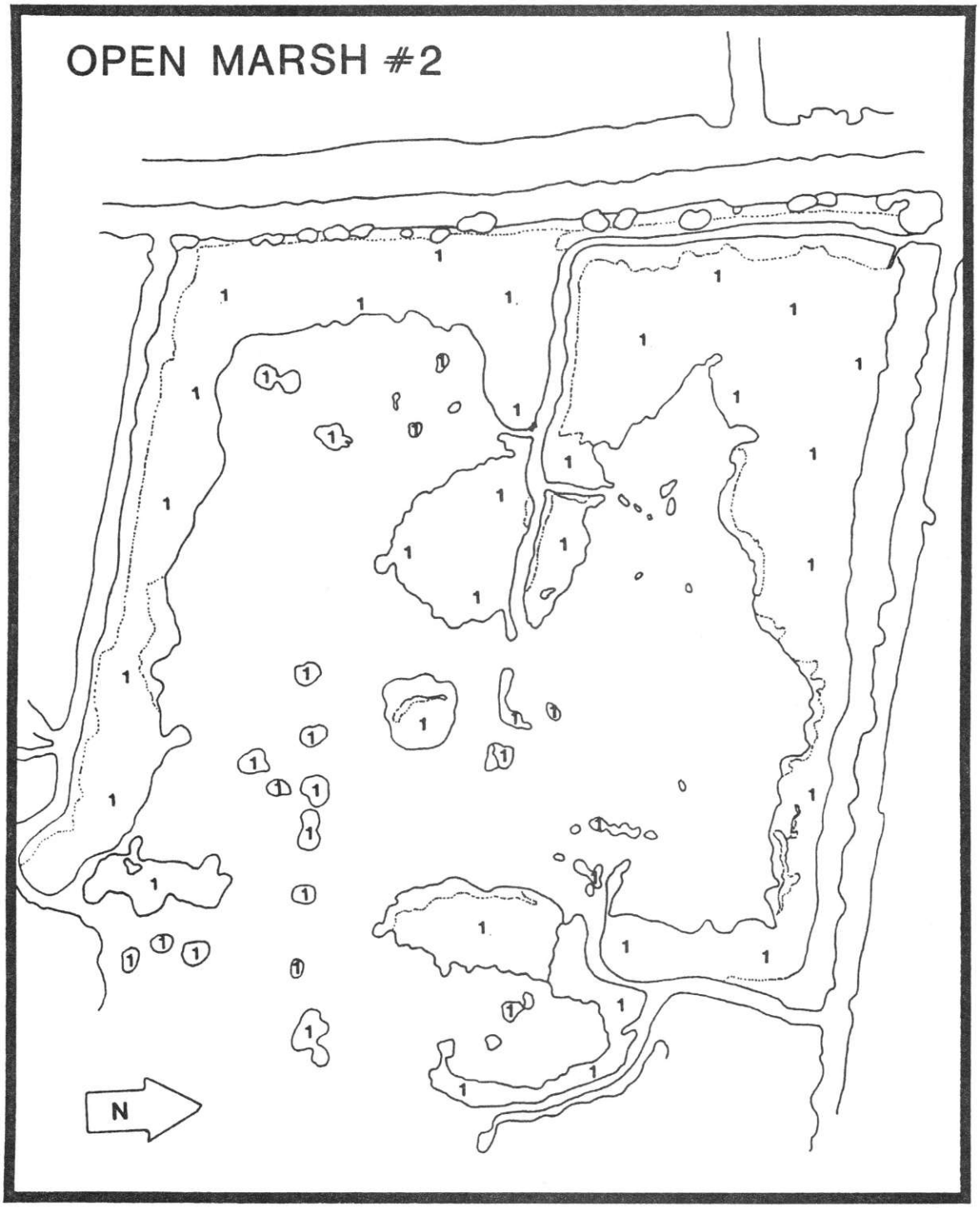

Figure 7.10 Vascular plant cover for the open tidal marsh area (tidal marsh #2 on Fig. 7.1)

SECTION V

PLANKTONIC COMMUNITY

Appendix Table 11.1

Summary of surface and bottom temperatures (^{o}C) and salinities (PPT) recorded at the time of microzooplankton and mesozooplankton collections.

5 October 1982

POND NUMBER	LEVEL	TEMP ^{o}C	SALINITY ppt
1	Surface	28.1	24.7
1	Bottom	26.6	25.5
2	Surface	26.5	23.3
2	Bottom	27.5	20.4
3	Surface	28.0	23.9
3	Bottom	27.4	26.2
4	Surface	26.7	26.1
4	Bottom	26.7	26.4
5	Surface	27.5	24.5
5	Bottom	27.5	24.5
Creek	Surface	26.6	29.4
Creek	Bottom	26.6	28.1

13-14 January 1983

POND NUMBER	LEVEL	TEMP ^{o}C	SALINITY ppt
1	Surface	8.7	14.4
1	Bottom	8.9	14.8
2	Surface	7.7	14.0
2	Bottom	7.7	14.0
3	Surface	9.5	12.5
3	Bottom	9.8	12.5
4	Surface	8.2	15.4

Appendix Table 11.1 Continued

13-14 January 1983

POND NUMBER	LEVEL	TEMP °C	SALINITY ppt
4	Bottom	6.8	15.5
5	Surface	9.0	15.7
5	Bottom	9.0	15.7
Creek	Surface	8.5	16.3
Creek	Bottom	8.5	16.0

16-18 February 1983

POND NUMBER	LEVEL	TEMP °C	SALINITY ppt
1	Surface	13.9	4.6
1	Bottom	13.9	4.6
2	Surface	12.6	7.7
2	Bottom	12.6	14.0
3	Surface	12.8	7.6
3	Bottom	12.8	7.6
4	Surface	13.1	6.5
4	Bottom	6.8	15.5
5	Surface	10.0	3.3
5	Bottom	9.4	4.9
Creek	Surface	9.1	5.9
Creek	Bottom	8.6	6.0

16-21 March 1983

POND NUMBER	LEVEL	TEMP °C	SALINITY ppt
1	Surface	17.3	5.9
1	Bottom	13.6	4.7
2	Surface	19.2	4.5
2	Bottom	19.2	4.5

Appendix Table 11.1 Continued

16-21 March 1983

POND NUMBER	LEVEL	TEMP °C	SALINITY ppt
5	Surface	19.3	3.1
5	Bottom	19.3	3.1
Creek	Surface	15.7	2.1
Creek	Bottom	15.3	2.0

18-19 April 1983

POND NUMBER	LEVEL	TEMP °C	SALINITY ppt
1	Surface	14.0	4.4
1	Bottom	13.6	4.7
4	Surface	12.9	1.8
4	Bottom	13.2	2.9
Creek	Surface	11.7	0.7
Creek	Bottom	13.2	2.9

17-18 May 1983

POND NUMBER	LEVEL	TEMP °C	SALINITY ppt
1	Surface	17.9	17.4
1	Bottom	18.2	17.4
2	Surface	19.9	19.7
2	Bottom	19.6	19.6
3	Surface	21.7	21.9
3	Bottom	21.7	21.7
4	Surface	22.1	23.2
4	Bottom	22.0	23.5
5	Surface	22.6	23.5
5	Bottom	22.2	23.7

Appendix Table 11.1 Continued

Creek	Surface	21.3	27.3
Creek	Bottom	21.0	27.5

15-16 June 1983

POND NUMBER	LEVEL	TEMP °C	SALINITY ppt
1	Surface	27.8	27.8
1	Bottom	26.2	27.8
2	Surface	28.3	28.0
2	Bottom	28.2	27.8
3	Surface	29.7	28.2
3	Bottom	29.7	27.8
4	Surface	29.3	27.8
4	Bottom	28.1	27.4
5	Surface	29.0	28.0
5	Bottom	26.4	27.8
Creek	Surface	26.4	28.0
Creek	Bottom	26.5	26.8

21-24 July 1983

POND NUMBER	LEVEL	TEMP °C	SALINITY ppt
1	Surface	29.7	26.2
1	Bottom	29.9	21.9
2	Surface	29.9	25.3
2	Bottom	29.9	23.8
3	Surface	31.7	27.8
3	Bottom	31.3	27.7
4	Surface	37.7	28.1
4	Bottom	32.8	27.7
5	Surface	28.9	25.5
5	Bottom	28.7	25.7

Appendix Table 11.1 Continued

Creek	Surface	29.5	29.5
Creek	Bottom	21.5	29.5

16-17 August 1983

POND NUMBER	LEVEL	TEMP °C	SALINITY ppt
1	Surface	23.3	20.8
1	Bottom	27.7	20.2
2	Surface	28.7	26.8
2	Bottom	27.2	27.1
3	Surface	26.4	22.7
3	Bottom	26.2	27.1
4	Surface	25.8	26.5
4	Bottom	26.0	26.5
5	Surface	25.8	24.4
5	Bottom	26.8	23.4
Creek	Surface	27.3	30.5
Creek	Bottom	27.4	22.0

17 September 1983

POND NUMBER	LEVEL	TEMP °C	SALINITY ppt
1	Surface	26.4	18.2
1	Bottom	26.0	18.0
2	Surface	24.2	24.5
2	Bottom	27.2	28.3
3	Surface	29.0	20.3
3	Bottom	24.4	19.8
4	Surface	28.9	24.9
4	Bottom	25.2	24.2
5	Surface	25.9	21.4

Appendix Table 11.1 Continued

5	Bottom	24.2	21.4
Creek	Surface	24.6	24.7
Creek	Bottom	24.6	23.8

15 October 1983

POND NUMBER	LEVEL	TEMP °C	SALINITY ppt
1	Surface	21.5	19.2
1	Bottom	21.6	19.0
2	Surface	20.6	28.3
2	Bottom	20.7	23.0
3	Surface	21.0	21.7
3	Bottom	21.0	19.8
4	Surface	20.9	25.3
4	Bottom	20.7	23.1
5	Surface	21.3	23.4
5	Bottom	20.9	23.5
Creek	Surface	23.0	26.1
Creek	Bottom	21.8	26.1

12 November 1983

POND NUMBER	LEVEL	TEMP °C	SALINITY ppt
1	Surface	19.9	19.9
1	Bottom	15.6	15.7
2	Surface	16.6	26.5
2	Bottom	16.0	24.4
3	Surface	15.8	24.9
3	Bottom	15.8	23.5
4	Surface	16.1	25.8
4	Bottom	16.0	22.0

Appendix Table 11.1 Continued

5	Surface	14.5	24.8
5	Bottom	14.1	24.8
Creek	Surface	15.4	21.4
Creek	Bottom	15.5	21.5

16 December 1983

POND NUMBER	LEVEL	TEMP °C	SALINITY ppt
1	Surface	12.3	10.4
1	Bottom	12.3	10.1
4	Surface	9.7	19.3
4	Bottom	9.7	19.5
5	Surface	10.9	19.4
5	Bottom	10.9	19.3
Creek	Surface	10.9	14.8
Creek	Bottom	10.7	14.7

Appendix Table 11.2

Taxa and species identified in zooplankton samples.

Ciliata

- Tintinnida

Hydroidea (hydromedusae, hydroid polyps)

Anthozoa (burrowing anemones)

Ctenophora

Turbellaria

Nemertina

Rotifera

Nematoda

Polychaeta (adults & larvae)

Oligochaeta (adults & larvae)

Gastropoda (veligers)

Bivalvia (larvae)

Cladocera

Ostracoda

Copepoda

- Calanoida
  - *Paracalanus* spp.
  - *Pseudodiaptomus coronatus*
  - *Eurytemora affinis*
  - *Centropages hamatus*
  - *Centropages furcatus*
  - *Labidocera aestiva*
  - *Acartia tonsa*
- Calanoida
  - *Parvocalanus crassirostris*
  - Unidentified calanoids
  - Unidentified nauplii

Appendix Table 11.2 Continued

- Cyclopoida
  - *Oithona colcarva*
  - *Oithona* spp.
  - *Tropocyclops* spp.
  - *Halicyclops* spp.
  - *Microcyclops* spp.
  - *Saphirella* spp.
  - *Cyclops* spp.
  - Unidentified cyclopoids
  - Unidentified nauplii
- Harpacticoida
  - *Enterpina acutifrons*
  - *Tisbe* spp.
  - Unidentified harpactioids
  - Unidentified nauplii

Cirripedia (barnacle nauplii & cyprids)

Stomatopoda

Mysidacea

Isopoda

Amphipoda

Decapoda

- *Palaemonetes* spp.
- Unidentified shrimp-like decapods

Pycnogonida

Arachnida

Insecta

Echinodermata (larvae)

Bryozoa (larvae)

Chaeotognatha

Ascidiacea

Larvacea

Osteichthyes (eggs, larvae, juveniles)

Appendix Table 11.3

Summary of the GLM-SNK analyses of monthly microzooplankton (53 µm-mesh net) standing crops to sampling sites. The mean standing crop values ($\bar{x}$, numbers per liter) are for replicated net tows at each site. The letter A, B, & C indicate standing crop means that were significantly different at the 0.05 level of significance. * = fractional numbers of organisms present.

Copepod nauplii

	Grouping	$\bar{x}$	Sites		Grouping	$\bar{x}$	Site
Oct 82	A	57.6	5	June 83	A	342.1	3
	A	32.7	1		A	340.3	5
	A	26.4	4		A	191.6	2
	A	20.9	3		A	50.3	4
	A	13.9	2		A	22.4	1
	A	9.6	Creek		A	17.4	Creek
Jan 83	A	221.9	4	Jul 83	A	355.4	4
	B	156.3	1		B	133.2	3
	C	70.1	2		B	121.2	5
	C	13.0	Creek		B	90.0	1
	C	11.2	3		B	38.1	2
	C	10.2	5		B	9.3	Creek
Feb 83	A	246.1	4	Aug 83	A	591.2	3
	AB	163.6	2		A	502.4	1
	BC	79.7	1		A	368.6	2
	C	42.2	5		A	310.8	5
	C	13.3	Creek		A	185.4	4
	C	6.4	3		A	64.4	Creek
Mar 83	A	290.6	1	Sep 83	A	1118.2	3
	B	45.1	Creek		B	328.1	4
	B	40.1	5		B	296.4	1
	B	35.5	2		B	295.6	3
	not sampled		3		B	216.7	5
	not sampled		4		B	8.0	Creek
Apr 83	A	126.4	1	Oct 83	A	72.0	1
	B	47.9	Creek		A	38.8	3
	C	17.2	4		A	34.5	2
	not sampled		2		A	17.3	Creek
	not sampled		3		A	14.6	5
	not sampled		5		A	5.6	4
May 83	A	122.3	2	Nov 83	A	190.3	3
	A	117.4	3		A	172.4	4
	A	91.4	1		A	149.7	5
	A	74.6	4		A	100.3	1
	A	63.3	Creek		A	88.9	2
	A	55.5	5		A	10.4	Creek

Appendix Table 11.3 Continued

Copepod nauplii (continued)

	Grouping	$\bar{x}$	Site		Grouping	$\bar{x}$	Site
Dec 83	A	85.9	59				
	A	62.7	4				
	A	13.4	1				
	A	8.7	Creek				
	not sampled		2				
	not sampled		3				

Acartia tonsa

* = fractional numbers persent

	Grouping	$\bar{x}$	Site		Grouping	$\bar{x}$	Site
Oct 82	A	6.4	5	Jun 83	A	25.9	5
	A	3.3	1		B	6.3	3
	A	0.8	Creek		B	3.1	2
	A	0.6	2		B	0.7	Creek
	A	0.5	4		B	0.3	4
	A	0.3	3		B	0.0*	1
Jan 83	A	2.3	1	Jul 83	A	86.7	4
	B	0.7	Creek		B	21.0	1
	B	0.3	5		B	11.9	3
	B	0.3	3		B	5.2	5
	B	0.1	4		B	1.7	2
	B	0.0*	2		B	1.1	Creek
Feb 83	A	0.2	2	Aug 83	A	55.3	5
	A	0.1	3		A	49.6	3
	A	0.0	1		AB	20.7	4
	A	0.0	4		B	8.6	1
	A	0.0	5		B	6.2	Creek
	A	0.0	Creek		B	5.1	2
Mar 83	A	6.4	5	Sept 83	A	7.1	1
	A	0.2	Creek		A	4.3	2
	A	0.2	2		A	3.6	4
	A	0.2	1		A	2.9	5
	not sampled		3		A	0.8	Creek
	not sampled		4		A	0.3	3
Apr 83	A	0.6	4	Oct 83	A	35.1	4
	A	0.4	1		A	28.1	1
	A	0.0	Creek		A	19.6	1
	not sampled		2		A	19.2	5
	not sampled		3		A	3.4	Creek
	not sampled		5		A	1.7	3
May 83	A	31.8	5	Nov 83	A	59.8	5
	B	7.9	4		A	26.8	3
	B	6.8	2		A	22.9	2
	B	2.1	1		A	21.6	4
	B	1.7	Creek		A	11.5	1
	B	1.0	3		A	2.1	Creek

Appendix Table 11.3 Continued

Grouping		$\bar{x}$	Site	Grouping		$\bar{x}$	Site
				Dec 83	A	40.4	5
					A	22.7	4
					A	3.4	1
					A	1.5	Creek
					not sampled		2
					not sampled		3

Rotifers

Grouping		$\bar{x}$	Site	Grouping		$\bar{x}$	Site
Oct 82	A	18.1	3	June 83	A	477.3	2
	A	14.5	5		A	135.4	1
	A	0.3	1		A	40.1	3
	A	0.3	4		A	5.7	Creek
	A	0.1	2		A	4.9	5
	A	0.0	Creek		A	2.6	4
Jan 83	A	4.4	2	Jul 83	A	260.6	5
	A	3.8	3		B	113.7	2
	A	2.0	1		C	21.3	3
	A	1.3	Creek		C	20.3	4
	A	0.9	4		C	5.8	1
	A	0.5	5		C	2.6	Creek
Feb 83	A	14.9	2	Aug 83	A	4884.1	5
	A	11.6	4		B	103.8	4
	A	6.7	1		B	83.5	1
	A	6.7	5		B	22.8	Creek
	A	4.0	Creek		B	7.6	2
	A	1.4	3				
Mar 83	A	183.6	1	Sep 83	A	1833.2	3
	A	89.2	5		A	1423.4	4
	A	3.9	2		B	428.1	5
	A	1.9	Creek		B	150.1	1
	not sampled				B	75.7	2
	not sampled				B	4.4	Creek
				Oct 83	A	13.3	3
					B	0.3	Creek
Apr 83	A	1026.74	4		B	0.2	4
	B	104.0	Creek		B	0.1	2
	B	8.6	1		B	0.0*	5
	not sampled		2		B	0.0	1
	not sampled		3				
	not sampled		5	Nov 83	Rotifers absent		
May 83	A	7.2	3	Dec 83	A	0.0	Creek
	A	6.7	1		A	0.0	4
	B	2.3	2		A	0.0	5
	B	1.8	4		A	0.0	1
	B	0.5	5		not sampled		2
	B	0.0	Creek		not sampled		3

Appendix Table 11.3 Continued

Barnacle nauplii

* = fractional numbers present

	Grouping	$\bar{x}$	Site		Grouping	$\bar{x}$	Site
Oct 82	A	5.2	Creek	Jul 83	A	4.0	Creek
	B	0.4	3		A	3.4	5
	B	0.3	1		A	1.3	2
	B	0.3	5		A	1.1	3
	B	0.2	2		A	0.7	4
	B	0.0*	4		A	0.2	1
Jan 83	A	3.6	3	Aug 83	A	3.7	Creek
	A	2.2	2		B	0.0*	1
	A	1.8	1		B	0.0*	2
	A	1.8	5		B	0.0*	4
	A	1.7	Creek		B	0.0*	5
	A	0.1	4		B	0.0*	3
Feb 83	A	1.3	5	Sep 83	A	0.1	Creek
	A	1.1	2		A	0.0*	1
	A	0.8	1		A	0.0*	2
	A	0.4	Creek		A	0.0*	4
	A	0.3	4		A	0.0*	5
	A	0.3	3		A	0.0*	3
Mar 83	A	4.8	Creek	Oct 83	A	0.4	Creek
	AB	2.1	2		A	0.3	2
	AB	1.6	5		A	0.1	5
	B	0.6	1		A	0.1	1
	not sampled		3		A	0.0*	4
	not sampled		4		A	0.0*	3
Apr 83	A	3.9	4	Nov 83	A	3.0	Creek
	B	0.0	1		A	2.3	2
	B	0.0	Creek		B	0.5	3
	not sampled		2		B	0.2	5
	not sampled		3		B	0.1	4
	not sampled		5		B	0.0	1
May 83	A	68.5	Creek	Dec 83	A	0.8	Creek
	B	20.5	5		A	0.4	5
	C	3.7	2		A	0.2	4
	C	2.4	1		A	0.0	1
	C	2.1	4		not sampled		2
	C	1.8	3		not sampled		3
Jun 83	A	1.1	Creek				
	B	0.1	4				
	B	0.0*	2				
	B	0.0*	1				
	B	0.0*	5				
	B	0.0*	3				

Appendix Table 11.3 Continued

Tintinnids

* = fractional numbers present

	Grouping	$\bar{x}$	Site
Oct 82	Tintinnids absent		
Jan 83	A	0.6	Creek
	B	0.1	1
	B	0.0*	2
	B	0.0*	4
	B	0.0*	5
	B	0.0*	3
Feb 83	Tintinnids absent		
Mar 83	Tintinnids absent		
Apr 83	Tintinnids absent		
May 83	Tintinnids absent		
Jun 83	A	5.9	1
	A	2.6	5
	A	0.0*	3
	A	0.0*	4
	A	0.0*	2
	A	0.0*	Creek
Jul 83	A	1595.8	5
	B	66.9	2
	B	12.4	3
	B	3.8	Creek
	B	0.6	4
Aug 83	A	203.8	5
	B	31.6	Creek
	B	15.7	4
	B	1.5	3
	B	0.4	2
	B	0.3	1
Sep 83	A	7.7	5
	B	1.1	1
	B	0.8	Creek
	B	0.8	3
	B	0.8	2
	B	0.0	4
Oct 83	A	2.3	2
	A	0.0	1
Nov 83	Tintinnids absent		
Dec 83	A	1.9	Creek
	B	0.2	1
	B	0.0	4
	B	0.0	5
	not sampled		2
	not sampled		3

Appendix Table 11.3 Continued

Polychaete larvae

	Grouping	$\bar{x}$	Site
Oct 82	A	9.2	Creek
	A	7.0	5
	A	1.1	3
	A	0.7	4
	A	0.5	2
	A	0.2	1
Jan 83	A	30.0	5
	A	23.7	3
	A	5.4	1
	A	4.0	Creek
	A	2.7	2
	A	0.3	4
Feb 83	A	55.3	5
	B	11.1	3
	C	3.7	1
	C	3.2	2
	C	0.3	4
	C	0.2	Creek
Mar 83	A	11.6	1
	B	0.9	5
	B	0.4	Creek
	B	0.4	2
	not sampled		3
	not sampled		4
Apr 83	A	0.8	1
	A	0.5	Creek
	A	0.0	4
	not sampled		2
	not sampled		3
	not sampled		5
May 83	A	2.0	2
	A	1.4	Creek
	A	1.1	4
	A	0.9	3
	A	0.6	1
	A	0.5	5
Jun 83	A	7.3	Creek
	A	4.4	3
	A	3.7	4
	A	2.8	2
	A	0.6	5
	A	0.6	1
Jul 83	A	380.7	5
	A	41.3	3
	A	29.1	Creek
	A	28.6	4
	A	5.3	2
	A	2.1	1
Aug 83	A	97.3	3
	A	37.5	5
	A	31.5	Creek
	A	8.0	2
	A	5.3	1
	A	4.4	4
Sep 83	A	34.3	5
	A	30.8	Creek
	A	18.7	3
	A	7.3	2
	A	1.8	4
	A	1.5	1
Oct 83	A	17.6	3
	A	11.1	2
	A	10.7	Creek
	A	9.7	5
	A	6.6	1
	A	1.0	4
Nov 83	A	178.5	2
	A	174.8	5
	B	63.7	3
	B	37.1	4
	B	33.6	1
	B	3.8	Creek
Dec 83	A	567.3	5
	B	55.0	1
	B	51.2	4
	B	11.8	Creek
	not sampled		2
	not sampled		3

Appendix Table 11.4
Summary of the GLM-SNK analyses of monthly mesozooplankton (153 µm-mesh net) standing crops according to sampling sites. The mean standing crop values ($\bar{x}$) are for replicated net tows at each site. The letters A-F indicate standing crop means that were significantly different at the 0.05 level of significance.
* = fractional numbers of organisms present.

Acartia tonsa

	Grouping	$\bar{x}$	Site		Grouping	$\bar{x}$	Site
Oct 82	A	4.3	1	Jun 83	A	5.5	3
	A	3.9	5		A	4.6	5
	A	1.2	4		A	0.5	Creek
	A	0.7	Creek		A	0.3	2
	A	0.6	2		A	0.2	4
	A	0.4	3		A	0.1	1
Jan 83	A	5.7	1	Jul 83	A	63.0	4
	A	0.7	3		B	12.9	1
	A	0.3	Creek		B	9.0	5
	A	0.3	4		B	5.3	3
	A	0.2	5		B	0.8	2
	A	0.1	2		B	0.7	Creek
Feb 83	A	0.1	2	Aug 83	A	30.8	3
	A	0.0*	3		B	16.0	5
	A	0.0*	4		C	10.7	4
	A	0.0*	5		D	5.2	1
	A	0.0*	Creek		D	3.4	Creek
	A	0.0*	1		E	1.0	2
Mar 83	A	0.3	1	Sep 83	A	5.4	1
	A	0.2	5		B	2.7	5
	A	0.2	2		BC	2.0	2
	A	0.1	Creek		CD	0.9	4
	not sampled		3		D	0.3	Creek
	not sampled		4		D	0.0*	3
Apr 83	A	0.2	4	Oct 83	A	35.3	4
	B	0.0*	1		B	18.9	2
	B	0.0*	Creek		B	18.2	1
	not sampled		2		B	11.1	5
	not sampled		3		B	3.7	3
	not sampled		5		B	1.1	Creek
May 83	A	20.5	5	Nov 83	A	10.7	4
	B	5.7	4		A	10.1	5
	BC	3.5	2		A	9.0	3
	BC	3.0	3		A	7.0	1
	BC	1.6	1		A	5.2	2
	C	0.8	Creek		B	0.7	Creek

Appendix Table 11.4 Continued

	Grouping	$\bar{x}$	Site
Dec 83	A	32.7	4
	A	20.1	5
	A	7.9	1
	A	0.7	Creek
	not sampled		2
	not sampled		3

Total Copepods

	Grouping	$\bar{x}$	Site		Grouping	$\bar{x}$	Site
Oct 82	A	4.9	5	May 83	A	21.2	5
	A	4.4	1		B	6.6	4
	A	2.1	Creek		BC	3.7	2
	A	1.4	4		BC	3.5	3
	A	0.8	2		BC	2.9	Creek
	A	0.5	3		C	1.9	1
Jan 83	A	5.9	1	Jun 83	A	5.9	3
	A	0.7	3		A	5.0	5
	A	0.4	4		A	0.9	Creek
	A	0.4	Creek		A	0.5	4
	A	0.3	5		A	0.4	2
	A	0.1	2		A	0.2	1
Feb 83	A	0.5	1	Jul 83	A	63.5	4
	A	0.5	4		B	13.2	1
	A	0.5	5		B	10.7	5
	A	0.4	Creek		B	5.9	3
	A	0.4	2		B	1.3	2
	A	0.3	3		B	0.8	Creek
Mar 83	A	22.4	Creek	Aug 83	A	50.5	5
	A	9.6	2		B	33.6	3
	A	7.5	1		C	19.6	4
	A	2.5	5		D	9.8	Creek
	not sampled		3		E	5.5	1
	not sampled		4		F	1.4	2
Apr 83	A	5.2	1	Sep 83	A	7.8	4
	AB	2.5	4		B	5.8	1
	B	0.5	Creek		B	4.8	5
	not sampled		2		C	2.3	2
	not sampled		3		D	0.5	Creek
	not sampled		5		D	0.1	3

Appendix Table 11.4 Continued

	Grouping	$\bar{x}$	Site		Grouping	$\bar{x}$	Site
Oct 83	A	35.4	4	Dec 83	A	32.9	4
	B	19.0	2		A	31.4	5
	B	18.3	1		A	7.9	1
	B	11.2	5		A	0.7	Creek
	B	3.8	3		not sampled		2
	B	3.2	Creek		not sampled		3
Nov 83	A	10.7	4				
	A	10.1	5				
	A	9.0	3				
	A	7.0	1				
	AB	5.2	2				
	B	1.1	Creek				

Eurytemora affinis

	Grouping	$\bar{x}$	Site		Grouping	$\bar{x}$	Site
Oct 82	A	0.0*	5	Apr 83	A	2.4	1
	A	0.0*	4		B	0.8	4
	A	0.0*	2		B	0.4	Creek
	A	0.0*	3		not sampled		2
	A	0.0*	1		not sampled		3
	A	0.0*	Creek		not sampled		5
Jan 83	A	0.2	1	May 83	A	0.1	2
	A	0.1	4		A	0.0*	1
	A	0.0*	3		A	0.0*	4
	A	0.0*	Creek		A	0.0	3
	A	0.0*	2		A	0.0	5
	A	0.0*	5		A	0.0	Creek
Feb 83	A	0.4	4	Jun 83	A	0.0*	5
	A	0.4	Creek		A	0.0*	1
	A	0.2	2		A	0.0*	Creek
	A	0.1	1		A	0.0*	2
	A	0.1	5		A	0.0*	4
	A	0.1	3		A	0.0	3
Mar 83	A	21.9	Creek	Jul 83	absent		
	A	6.9	1	Aug 83	absent		
	A	4.2	2	Sep 83	absent		
	A	0.8	5	Oct 83	absent		
	not sampled		3	Nov 83	absent		
	not sampled		4				
				Dec 83	A	0.0*	Creek
					A	0.0*	4
					A	0.0*	5
					A	0.0*	1
					not sampled		2
					not sampled		3

Appendix Table 11.4 Continued

Rotifers

	Grouping	$\bar{x}$	Site		Grouping	$\bar{x}$	Site
Oct 82	absent						
Jan 83	absent						
Feb 83	A	0.0*	5	Jul 83	A	0.0*	5
	A	0.0*	3		A	0.0*	1
	A	0.0*	1		A	0.0*	3
	A	0.0*	4		A	0.0*	4
	A	0.0*	Creek		A	0.0*	2
	A	0.0*	2		A	0.0	Creek
Mar 83	A	2.6	5	Aug 83	A	0.0*	3
	A	0.0*	2		A	0.0	1
	A	0.0*	Creek		A	0.0	2
	A	0.0*	1		A	0.0	4
	not sampled		3		A	0.0	5
	not sampled		4		A	0.0	Creek
Apr 83	A	0.0*	1	Sep 83	A	0.0*	1
	B	0.0*	4		A	0.0*	3
	B	0.0*	Creek		A	0.0*	2
	not sampled		2		A	0.0*	5
	not sampled		3		A	0.0	4
	not sampled		5		A	0.0	Creek
May 83	A	0.0*	3	Oct 83	absent		
	A	0.0	1	Nov 83	absent		
	A	0.0	2	Dec 83	absent		
	A	0.0	4				
	A	0.0	5				
	A	0.0	Creek				
Jun 83	absent						

Barnacle cyprids

	Grouping	$\bar{x}$	Site		Grouping	$\bar{x}$	Site
Oct 82	A	5.1	Creek	Feb 83	A	0.4	2
	B	0.6	5		A	0.2	5
	B	0.3	3		A	0.2	3
	B	0.2	1		A	0.1	4
	B	0.1	2		A	0.0*	Creek
	B	0.1	4		A	0.0*	1
Jan 83	A	0.4	3	Mar 83	A	0.7	2
	A	0.3	Creek		A	0.5	1
	B	0.1	2		A	0.2	5
	B	0.1	5		A	0.2	Creek
	B	0.1	4		not sampled		3
	B	0.0*	1		not sampled		4

Appendix Table 11.4 Continued

Barnacle cyprids

	Grouping	$\bar{x}$	Site
Apr 83	A	0.7	4
	B	0.0*	1
	B	0.0	Creek
	not sampled		2
	not sampled		3
	not sampled		5
May 83	A	5.3	Creek
	B	4.2	5
	C	2.8	2
	D	1.0	3
	D	0.9	4
	D	0.7	1
Jun 83	A	1.5	3
	AB	1.1	4
	BC	0.5	1
	C	0.3	5
	C	0.3	Creek
	C	0.2	2
Jul 83	A	1.3	5
	A	0.6	5
	A	0.5	2
	A	0.5	3
	A	0.0*	1
	A	0.0*	4
Aug 83	A	1.4	Creek
	B	0.1	3
	B	0.0*	4
	B	0.0*	2
	B	0.0*	1
	B	0.0*	5
Sep 83	A	0.1	5
	A	0.0*	4
	A	0.0*	1
	A	0.0*	Creek
	A	0.0*	3
	A	0.0*	2
Oct 83	A	0.5	Creek
	B	0.0*	5
	B	0.0*	2
	B	0.0*	3
	B	0.0	1
	B	0.0	4
Nov 83	A	2.5	Creek
	B	0.0*	2
	B	0.0*	3
	B	0.0*	1
	B	0.0*	4
	B	0.0*	5
Dec 83	A	0.2	Creek
	A	0.2	4
	A	0.1	5
	A	0.0*	1
	not sampled		2
	not sampled		3

Carideans

	Grouping	$\bar{x}$	Site
Oct 82	absent		
Jan 83	A	0.0*	3
	A	0.0	1
	A	0.0	2
	A	0.0	4
	A	0.0	5
	A	0.0	Creek
Feb 83	A	0.0*	3
	A	0.0*	4
	A	0.0*	2
	A	0.0	1
	A	0.0	5
	A	0.0	Creek
Mar 83	absent		

Appendix Table 11.4 Continued

Carideans

	Grouping	$\bar{x}$	Site		Grouping	$\bar{x}$	Site
Apr 83	A	0.0*	4	Sep 83	A	0.1	2
	A	0.0	1		A	0.0*	1
	A	0.0	Creek		A	0.0*	3
	not sampled		2		A	0.0*	Creek
	not sampled		3		A	0.0	4
	not sampled		5		A	0.0	5
May 83	absent						
Jun 83	A	0.0*	2	Oct 83	A	0.2	4
	A	0.0*	4		A	0.0*	Creek
	A	0.0*	1		A	0.0*	2
	A	0.0	3		A	0.0*	1
	A	0.0	5		A	0.0*	5
	A	0.0	Creek		A	0.0*	3
Jul 83	A	0.5	1				
	B	0.3	4				
	C	0.1	2	Nov 83	A	0.0*	1
	C	0.0*	3		A	0.0*	3
	C	0.0*	Creek		A	0.0	2
	C	0.0	5		A	0.0	4
Aug 83	A	0.4	2		A	0.0	5
	A	0.1	5		A	0.0	Creek
	A	0.1	4				
	A	0.1	1	Dec 83			
	A	0.0*	3				
	A	0.0	Creek				

Brachyurans

	Grouping	$\bar{x}$	Site		Grouping	$\bar{x}$	Site
Oct 82	A	0.1	5	May 83	A	1.5	5
	A	0.1	2		B	0.9	4
	A	0.0*	1		B	0.8	Creek
	A	0.0*	Creek		B	0.8	3
	A	0.0*	3		C	0.0*	1
	A	0.0*	4		C	0.0*	2
Jan 83	absent						
Feb 83	absent						
Mar 83	absent						
Apr 83	absent						

Appendix Table 11.4 Continued

Brachyurans

	Grouping	$\bar{x}$	Site
Jun 83	A	1.5	Creek
	B	0.7	5
	B	0.6	3
	B	0.3	4
	B	0.0*	2
	B	0.0*	1
Jul 83	A	2.6	5
	A	2.0	3
	A	0.8	2
	A	0.3	Creek
	A	0.3	4
	A	0.2	1
Aug 83	A	0.4	Creek
	A	0.3	5
	A	0.1	1
	A	0.1	4
	A	0.0*	2
	A	0.0	3
Sep 83	A	0.0*	4
	A	0.0*	1
	A	0.0*	2
	A	0.0*	5
	A	0.0*	Creek
	A	0.0*	3
Oct 83	A	0.0*	Creek
	A	0.0*	1
	A	0.0*	2
	A	0.0*	4
	A	0.0*	5
	A	0.0*	3
Nov 83	A	0.0*	Creek
	A	0.0*	1
	A	0.0*	2
	A	0.0*	4
	A	0.0*	5
	A	0.0*	3
Dec 83	absent		

Insects

	Grouping	$\bar{x}$	Site
Oct 82	A	0.0*	1
	A	0.0*	2
	B	0.0*	4
	B	0.0*	3
	B	0.0*	Creek
	B	0.0*	5
Jan 83	A	0.0*	5
	A	0.0*	2
	A	0.0*	1
	A	0.0	3
	A	0.0	4
	A	0.0	Creek
Feb 83	A	0.0*	5
	A	0.0*	3
	A	0.0*	1
	A	0.0*	2
	A	0.0*	4
	A	0.0	Creek
Mar 83	A	0.7	2
	B	0.0*	1
	B	0.0*	5
	B	0.0*	Creek
	not sampled		3
	not sampled		4
Apr 83	A	0.1	4
	A	0.0*	1
	A	0.0	Creek
	not sampled		2
	not sampled		3
	not sampled		5
May 83	A	0.0*	4
	A	0.0*	1
	A	0.0	2
	A	0.0	3
	A	0.0	5
	A	0.0	Creek

Appendix Table 11.4 Continued

Insects

	Grouping	$\bar{x}$	Site		Grouping	$\bar{x}$	Site
Jun 83	A	0.0*	2	Oct 83	absent		
	AB	0.0*	1	Noc 83	absent		
	BC	0.0*	4				
	C	0.0	3				
	C	0.0	5				
	C	0.0	Creek				
Jul 83	A	0.0*	Creek	Dec 83	A	0.1	1
	B	0.0*	1		A	0.0	4
	C	0.0*	2		A	0.0	5
	C	0.0*	4		A	0.0	Creek
	C	0.0*	5		not sampled		2
	C	0.0*	3		not sampled	0.0	3
Aug 83	absent						
Sep 83	A	0.0*	Creek				
	B	0.0*	3				
	B	0.0	1				
	B	0.0	2				
	B	0.0	4				
	B	0.0	5				

Hydromedusae

	Grouping	$\bar{x}$	Site		Grouping	$\bar{x}$	Site
Oct 82	A	6.8	2	Mar 83	A	0.0*	2
	B	0.2	3		A	0.0	1
	B	0.2	1		A	0.0	5
	B	0.0*	Creek		A	0.0	Creek
	B	0.0*	4		not sampled		3
	B	0.0*	5		not sampled		4
Jan 83	A	0.0*	4	Apr 83	absent		
	A	0.0*	5				
	B	0.0*	2				
	B	0.0*	3				
	B	0.0*	1				
	B	0.0*	Creek				
Feb 83	A	0.0*	4	May 83	A	0.1	4
	A	0.0*	2		A	0.1	Creek
	A	0.0*	3		A	0.1	5
	A	0.0	1		A	0.0*	3
	A	0.0	5		A	0.0*	2
	A	0.0	Creek		A	0.0*	1

Appendix Table 11.4 Continued

Hydromedusae

	Grouping	$\bar{x}$	Site		Grouping	$\bar{x}$	Site
Jun 83	A	0.2	4	Oct 83	A	0.0*	3
	B	0.2	Creek		B	0.0*	Creek
	C	0.0*	3		B	0.0	1
	D	0.0*	1		B	0.0	2
	D	0.0*	2		B	0.0	4
	D	0.0	5		B	0.0	5
Jul 83	A	0.1	2	Nov 83	absent		
	AB	0.0*	5				
	B	0.0*	Creek				
	B	0.0*	3				
	B	0.0*	1				
	B	0.0*	4				
Aug 83	A	0.3	2	Dec 83	A	0.0*	Creek
	B	0.1	Creek		A	0.0*	4
	B	0.0*	5		A	0.0*	5
	B	0.0*	1		A	0.0*	1
	B	0.0*	3		not sampled		2
	B	0.0	4		not sampled		3
Sep 83	A	0.0*	1				
	A	0.0*	2				
	A	0.0*	3				
	A	0.0*	Creek				
	A	0.0*	4				
	A	0.0*	5				

SECTION VI

BENTHIC COMMUNITY

Appendix Table 12.1 Environmental data collected at each site sampled for macrobenthos.

STRATA CODE	COLLECTION NUMBER	MONTH	DAY	STATION DEPTH (CM)	TEMPERATURE	SALINITY
3C1	830001	1	4	200	14.0	11.2
3C1	830002	1	4	200	14.0	11.2
3C1	830003	1	4	200	14.0	11.2
3C2	830004	1	4	200	14.0	11.2
3C2	830005	1	4	200	14.0	11.2
3C2	830006	1	4	200	14.0	11.2
1C1	830007	1	4	100	12.0	11.0
1C1	830008	1	4	100	12.0	11.0
1C1	830009	1	4	100	12.0	11.0
1B2	830010	1	5	20	11.0	9.2
1B2	830011	1	5	10	11.0	9.2
1B2	830012	1	5	10	11.0	9.2
1B1	830013	1	5	10	11.0	9.2
1B1	830014	1	5	10	11.0	9.2
1B1	830015	1	5	10	11.0	9.2
1C2	830016	1	4	100	12.0	11.0
1C2	830017	1	4	100	12.0	11.0
1C2	830018	1	4	100	12.0	11.0
1A1	830019	1	5	20	11.0	9.2
1A1	830020	1	5	20	11.0	9.2
1A1	830021	1	5	20	11.0	9.2
1A2	830022	1	5	20	11.0	9.2
1A2	830023	1	5	20	11.0	9.2
1A2	830024	1	5	20	11.0	9.2
3M1	830025	1	5	20	13.0	9.2
3M1	830026	1	5	30	13.0	9.2
3M1	830027	1	5	30	13.0	9.2
3M2	830028	1	5	30	13.0	9.2
3M2	830029	1	5	20	13.0	9.2
3M2	830030	1	5	20	13.0	9.2
2B1	830031	1	5	10	13.0	10.0
2B1	830032	1	5	10	13.0	10.0
2B1	830033	1	5	10	13.0	10.0
2B2	830034	1	5	10	13.0	10.0
2B2	830035	1	5	10	13.0	10.0
2B2	830036	1	5	10	13.0	10.0
2A1	830037	1	5	20	13.0	10.0
2A1	830038	1	5	20	13.0	10.0
2A1	830039	1	5	20	13.0	10.0
2A2	830040	1	5	20	13.0	10.0
2A2	830041	1	5	20	13.0	10.0
2A2	830042	1	5	20	13.0	10.0
2C1	830043	1	5	70	12.0	9.2
2C1	830044	1	5	70	12.0	9.2
2C1	830045	1	5	70	12.0	9.2
2C2	830046	1	5	120	12.0	9.2
2C2	830047	1	5	120	12.0	9.2
2C2	830048	1	5	120	12.0	9.2
1A1	830049	6	28	36	26.0	27.8
1A1	830050	6	28	36	26.0	27.8
1A1	830051	6	28	36	26.0	27.8
1A2	830052	6	28	35	26.0	32.7
1A2	830053	6	28	35	26.0	32.7
1A2	830054	6	28	35	26.0	32.7
3M1	830055	6	28	2	27.0	33.0

Appendix Table 12.1 Continued

STRATA CODE	COLLECTION NUMBER	MONTH	DAY	STATION DEPTH (CM)	TEMPERATURE	SALINITY
3M1	830057	6	28	2	27.0	33.0
3M2	830058	6	28	2	27.0	32.6
3M2	830059	6	28	2	27.0	32.6
3M2	830060	6	28	2	27.0	32.6
1B1	830061	6	28	17	27.0	30.5
1B1	830062	6	28	17	27.0	30.5
1B1	830063	6	28	17	27.0	30.5
1B2	830064	6	28	18	27.0	31.5
1B2	830065	6	28	18	27.0	31.5
1B2	830066	6	28	18	27.0	31.5
2A1	830067	6	29	28	24.0	27.0
2A1	830068	6	29	28	24.0	27.0
2A1	830069	6	29	28	24.0	27.0
2A2	830070	6	29	32	25.0	27.0
2A2	830071	6	29	32	25.0	27.0
2A2	830072	6	29	32	25.0	27.0
2B1	830073	6	29	7	26.0	29.0
2B1	830074	6	29	7	26.0	29.0
2B1	830075	6	29	7	26.0	29.0
2B2	830076	6	29	11	26.0	28.7
2B2	830077	6	29	11	26.0	28.7
2B2	830078	6	29	11	26.0	28.7
1C1	830079	6	29	109	26.0	31.4
1C1	830080	6	29	109	26.0	31.4
1C1	830081	6	29	109	26.0	31.4
1C2	830082	6	29	105	27.0	31.2
1C2	830083	6	29	105	27.0	31.2
1C2	830084	6	29	105	27.0	31.2
2C1	830085	6	29	75	26.0	30.4
2C1	830086	6	29	75	26.0	30.4
2C1	830087	6	29	75	26.0	30.4
2C2	830088	6	29	77	26.0	30.4
2C2	830089	6	29	77	26.0	30.4
2C2	830090	6	29	77	26.0	30.4
3C1	830091	6	29	99	25.0	31.8
3C1	830092	6	29	99	25.0	31.8
3C1	830093	6	29	99	25.0	31.8
3C2	830094	6	29	105	24.0	31.8
3C2	830095	6	29	105	24.0	31.8
3C2	830096	6	29	105	24.0	31.8
1A3	830097	11	1	50	19.0	20.4
1A3	830098	11	1	50	19.0	20.4
1A3	830099	11	1	50	19.0	20.4
1A4	830100	11	1	50	19.5	20.3
1A4	830101	11	1	50	19.5	20.3
1A4	830102	11	1	50	19.5	20.3
1B3	830103	11	1	20	19.5	18.8
1B3	830104	11	1	20	19.5	18.8
1B3	830105	11	1	20	19.5	18.8
1B4	830106	11	1	20	20.0	19.6
1B4	830107	11	1	20	20.0	19.6
1B4	830108	11	1	20	20.0	19.6
1C3	830109	11	1	110	19.5	18.9
1C3	830110	11	1	110	19.5	18.9
1C3	830111	11	1	110	19.5	18.9

Appendix Table 12.1 Continued

STRATA CODE	COLLECTION NUMBER	MONTH	DAY	STATION DEPTH (CM)	TEMPERATURE	SALINITY
1C4	830113	11	1	100	19.5	18.7
1C4	830114	11	1	100	19.5	18.7
2A3	830115	11	2	30	30.0	18.3
2A3	830116	11	2	30	30.0	18.3
2A3	830117	11	2	30	30.0	18.3
2A4	830118	11	2	45	29.5	19.4
2A4	830119	11	2	45	29.5	19.4
2A4	830120	11	2	45	29.5	19.4
2B3	830121	11	2	10	29.0	18.1
2B3	830122	11	2	10	29.0	18.1
2B3	830123	11	2	10	29.0	18.1
2B4	830124	11	2	18	29.0	18.6
2B4	830125	11	2	18	29.0	18.6
2B4	830126	11	2	18	29.0	18.6
2C3	830127	11	2	70	29.5	19.7
2C3	830128	11	2	70	29.5	19.7
2C3	830129	11	2	70	29.5	19.7
2C4	830130	11	2	100	28.5	21.0
2C4	830131	11	2	100	28.5	21.0
2C4	830132	11	2	100	28.5	21.0
3M3	830133	11	1	15	27.0	20.2
3M3	830134	11	1	20	27.0	20.2
3M3	830135	11	1	25	27.0	20.2
3M4	830136	11	1	5	27.0	22.3
3M4	830137	11	1	10	27.0	22.3
3M4	830138	11	1	15	27.0	22.3
3C3	830139	11	1	230	29.5	17.4
3C3	830140	11	1	230	29.5	17.4
3C3	830141	11	1	230	29.5	17.4
3C4	830142	11	1	220	29.5	17.6
3C4	830143	11	1	220	29.5	17.6
3C4	830144	11	1	220	29.5	17.6
1A3	840145	1	26	12	7.6	13.0
1A3	840146	1	26	12	7.6	13.0
1A3	840147	1	26	12	7.6	13.0
1A4	840148	1	26	6	7.3	13.5
1A4	840149	1	26	6	7.3	13.5
1A4	840150	1	26	6	7.3	13.5
1C3	840157	1	26	70	7.0	13.0
1C3	840158	1	26	70	7.0	13.0
1C4	840159	1	26	70	6.7	13.0
1C4	840160	1	26	70	6.7	13.0
1C4	840161	1	26	70	6.7	13.0
2A3	840162	1	27	30	2.8	11.0
2A3	840163	1	27	30	2.8	11.0
2A3	840164	1	27	30	2.8	11.0
2A4	840165	1	27	30	2.6	10.5
2A4	840166	1	27	30	2.6	10.5
2A4	840167	1	27	30	2.6	10.5
2B3	840168	1	27	6	3.0	11.2
2B3	840169	1	27	6	3.0	11.2
2B3	840170	1	27	6	3.0	11.2
2B4	840171	1	27	12	3.0	11.0
2B4	840172	1	27	12	3.0	11.0
2B4	840173	1	27	12	3.0	11.0

Appendix Table 12.1 Continued

STRATA CODE	COLLECTION NUMBER	MONTH	DAY	STATION DEPTH (CM)	TEMPERATURE	SALINITY
2C3	840175	1	26	60	3.6	12.0
2C3	840176	1	26	60	3.6	12.0
2C4	840177	1	26	70	3.7	12.0
2C4	840178	1	26	70	3.7	12.0
2C4	840179	1	26	70	3.7	12.0
3M3	840180	1	27	0	4.3	12.0
3M3	840181	1	27	0	4.3	12.0
3M3	840182	1	27	0	4.3	12.0
3M4	840183	1	27	0	4.0	12.5
3M4	840184	1	27	0	4.0	12.5
3M4	840185	1	27	0	4.0	12.5
3C3	840186	1	26	130	4.2	10.5
3C3	840187	1	26	130	4.2	10.5
3C3	840188	1	26	130	4.2	10.5
3C4	840189	1	26	150	4.2	10.5
3C4	840190	1	26	150	4.2	10.5
3C4	840191	1	26	150	4.2	10.5
1C3	840192	1	26	70	7.0	13.0
1C5	840205	4	9	30	2.6	16.8
1C5	840206	4	9	30	2.6	16.8
1C5	840207	4	9	30	2.6	16.8
1C6	840208	4	9	30	2.6	16.8
1C6	840209	4	9	30	2.6	16.8
1C6	840210	4	9	30	2.6	16.8
2A5	840211	4	9	15	3.4	17.0
2A5	840212	4	9	15	3.4	17.0
2A5	840213	4	9	15	3.4	17.0
2A6	840214	4	9	15	3.4	17.5
2A6	840215	4	9	15	3.4	17.5
2A6	840216	4	9	15	3.4	17.5
2C5	840223	4	9	50	3.4	18.0
2C5	840224	4	9	50	3.4	18.0
2C5	840225	4	9	50	3.4	18.0
2C6	840226	4	9	50	3.4	18.0
2C6	840227	4	9	50	3.4	18.0
2C6	840228	4	9	50	3.4	18.0
3M5	840229	4	10	5	1.6	15.0
3M5	840230	4	10	5	1.6	15.0
3M5	840231	4	10	5	1.6	15.0
3M6	840232	4	10	5	1.6	15.0
3M6	840233	4	10	5	1.6	15.0
3M6	840234	4	10	5	1.6	15.0
3C5	840235	4	10	190	1.6	14.5
3C5	840236	4	10	190	1.6	14.5
3C5	840237	4	10	190	1.6	14.5
3C6	840238	4	10	190	1.6	14.5
3C6	840239	4	10	190	1.6	14.5
3C6	840240	4	10	190	1.6	14.5
1A5	840241	7	30	40	18.8	31.5
1A5	840242	7	30	40	18.8	31.5
1A5	840243	7	30	40	18.8	31.5
1A6	840244	7	30	30	18.8	31.5
1A6	840245	7	30	30	18.8	31.5
1A6	840246	7	30	30	18.8	31.5
1B5	840247	7	30	30	17.3	31.8

Appendix Table 12.1 Continued

STRATA CODE	COLLECTION NUMBER	MONTH	DAY	STATION DEPTH (CM)	TEMPERATURE	SALINITY
1B5	840249	7	30	30	17.3	31.8
1B6	840250	7	30	30	17.4	32.0
1B6	840251	7	30	30	17.4	32.0
1B6	840252	7	30	30	17.4	32.0
1C5	840253	7	30	120	20.2	29.0
1C5	840254	7	30	120	20.2	29.0
1C5	840255	7	30	120	20.2	29.0
1C6	840256	7	30	100	20.2	29.0
1C6	840257	7	30	100	20.2	29.0
1C6	840258	7	30	100	20.2	29.0
2A5	840259	7	30	55	20.8	30.0
2A5	840260	7	30	55	20.8	30.0
2A5	840261	7	30	55	20.8	30.0
2A6	840262	7	30	40	20.8	29.8
2A6	840263	7	30	40	20.8	29.8
2A6	840264	7	30	40	20.8	29.8
2B5	840265	7	30	25	19.0	31.0
2B5	840266	7	30	25	19.0	31.0
2B5	840267	7	30	25	19.0	31.0
2B6	840268	7	30	30	18.6	31.0
2B6	840269	7	30	30	18.6	31.0
2B6	840270	7	30	30	18.6	31.0
2C5	840271	7	30	75	21.6	30.5
2C5	840272	7	30	75	21.6	30.5
2C5	840273	7	30	75	21.6	30.5
2C6	840274	7	30	75	21.6	30.5
2C6	840275	7	30	75	21.6	30.5
2C6	840276	7	30	75	21.6	30.5
3M5	840277	7	31	25	22.6	27.5
3M5	840278	7	31	15	22.6	27.5
3M5	840279	7	31	25	22.6	27.5
3M6	840280	7	31	15	22.5	28.2
3M6	840281	7	31	15	22.5	28.2
3M6	840282	7	31	15	22.5	28.2
3C5	840283	7	31	180	24.3	27.0
3C5	840284	7	31	180	24.3	27.0
3C5	840285	7	31	180	24.3	27.0
3C6	840286	7	31	170	24.3	27.0
3C6	840287	7	31	180	24.3	27.0
3C6	840288	7	31	180	24.3	27.0

Appendix Table 12.2 Ranked abundance of macrobenthos collected at each site during the sampling period. Asterisk (*) indicates questionable identification and (P) signifies presence of unquantifiable taxon.

SITE 1R

RANK	SPECIES	WI83	WI84	SP84	SU83	SU84	FA83
1.0	HYDROBIIDAE	821		1	47	56	12
2.0	LITTORIDINOPS MONROENSIS	465			21		15
3.0	HYDROBIIDAE A	200					
4.0	HYDROBIIDAE B	122					
5.0	CHIRONOMIDAE	78		1	3	2	1
6.0	HYDROBIIDAE D	3			19	33	6
7.0	OLIGOCHAETA	2		1	29	24	
8.0	NEREIS SUCCINEA	1			49	1	
9.0	HOBSONIA FLORIDA	1		1	26		
10.0	CAPITELLA CAPITATA		1	1	2	5	
11.0	HYDROPHILIDAE A	6		1			6
12.0	STENONINEREIS MARTINI			1	2	6	3
13.0	COENAGRIONIDAE	11				1	
14.0	COENAGRIONIDAE *	6					
15.0	EPHYDRIDAE				3		
18.0	PALAEMONETES SP.				1	1	
18.0	LIBELLULIDAE						1
18.0	HYDROBIIDAE C	2					
18.0	STREBLOSPIO BENEDICTI						
18.0	CAPITELLIDAE					1	
25.5	PALAEMONETES PUGIO				1		
25.5	HYDROPHILIDAE B			1			
25.5	HALIPLIDAE				1		
25.5	MYTILIDAE						1
25.5	ONOBOPS JACKSONI				1		
25.5	LITTORIDINOPS SP. A				1		
25.5	POLYCHAETA			1			
25.5	HOBSONIA FLORIDA *						
25.5	HIRUDINEA						
25.5	NEREIDAE				1		

Appendix Table 12.2 Continued

RANK	SPECIES	SITE 1 Sp					
		WI83	WI84	SP84	SU83	SU84	FA83
	AMPHIPODA					P	
1.0	HYDROBIIDAE	807			139	81	64
2.0	OLIGOCHAETA	351	2	41	288	182	20
3.0	CHIRONOMIDAE	224	2	2	27	3	157
4.0	HYDROBIIDAE A	373			2	1	12
5.0	LITTORIDINOPS MONROENSIS	155			31		21
6.0	HYDROBIIDAE B	158				2	24
7.0	HYDROBIIDAE D				94	54	24
8.0	STENONINEREIS MARTINI		1	1	2	29	81
9.0	HYDROPHILIDAE A	33			54	2	6
10.0	CERATOPOGONIDAE	79					
11.0	GAMMARUS TIGRINUS	20			8		
12.0	COENAGRIONIDAE	9				1	4
13.5	LIBELLULIDAE	5			3	3	2
13.5	HYDROBIIDAE C	11				1	1
15.0	CAPITELLA CAPITATA				4	6	
16.0	HOBSONIA FLORIDA			1	7		
17.0	HYDROPHILIDAE B			3	4		
18.0	TABANIDAE	2				1	1
19.0	MANAYUNKIA SP.	2					1
22.0	PALAEMONETES PUGIO						2
22.0	GAMMARUS SP.	1			1		
22.0	HALIPLIDAE				2		
22.0	ONOBOPS JACKSONI	1					1
22.0	STREBLOSPIO BENEDICTI	1				1	
32.0	UCA SP. *					1	
32.0	HARGERIA RAPAX	1					
32.0	COROPHIUM LACUSTRE			1			
32.0	MELITA APPENDICULATA	1					
32.0	PSEUDOSCORPIONES						1
32.0	STAPHYLINIDAE	1					
32.0	EMPIDAE *	1					
32.0	EPHYDRIDAE	1					
32.0	TIPULIDAE				1		
32.0	ARGULUS SP.						1
32.0	ONOBOPS SP.				1		
32.0	DETRACIA FLORIDANA						1
32.0	MELAMPUS BIDENTATUS						1
32.0	LAEONEREIS CULVERI					1	
32.0	CAPITELLIDAE				1		

Appendix Table 12.2 Continued

RANK	SPECIES	SITE ID					
		WI83	WI84	SP84	SU83	SU84	FA83
1.0	CHIRONOMIDAE	9		252			
2.0	STREBLOSPIO BENEDICTI	107	4	2		1	5
3.0	HOBSONIA FLORIDA	17		68			
4.0	OLIGOCHAETA			39			2
5.0	NEMATODA	20					
6.0	PALAEMONETES PUGIO		1	2			
7.0	CAPITELLA CAPITATA	2				5	1
8.0	CUCULIDAE			3			
13.0	MYSIDOPSIS ALMYRA	1					
13.0	COLLEMBOLA						
13.0	ARGULUS SP.						1
13.0	MACOMA BALTHICA				1		
13.0	MACOMA SP.						1
13.0	HYDROBIIDAE	1					
13.0	LITTORIDINOPS MONROENSIS	1					
13.0	STENONINEREIS MARTINI			1			
13.0	HESIONIDAE				1		

Appendix Table 12.2 Continued

		SITE 2R					
RANK	SPECIES	WI83	WI84	SP84	SU83	SU84	FA83
1.0	OLIGOCHAETA	147			190	1	
2.0	HYDROBIIDAE	246			6		
3.0	NEREIS SUCCINEA	2			127	7	3
4.0	LITTORIDINOPS MONROENSIS	107			6		
5.0	CHIRONOMIDAE	15		72			
6.0	STREBLOSPIO BENEDICTI		4			5	
7.0	HOBSONIA FLORIDA	1		4	36		
8.0	HYDROBIIDAE A	43			1		
9.0	HYDROBIIDAE B	31			1		
10.0	CAPITELLA CAPITATA	1		1	3	10	
11.0	MOLGULA MANHATTENSIS	12					
12.5	PALAEMONETES PUGIO			4	3	2	
12.5	HYDROPHILIDAE A	10			1		
14.0	PALAEMONETES SP.			3	2	2	1
15.0	LAEONEREIS CULVERI			1		6	
16.0	CAPITELLIDAE	1			4		
17.0	STENONINEREIS MARTINI				4		
18.0	HYDROBIIDAE D	3					
19.5	HYDROBIIDAE C	2					
19.5	AMPHARETIDAE				2		
25.5	PALAEMONETES PUGIO *				1		
25.5	PALAEMONETES VULGARIS				1		
25.5	CALLINECTES SAPIDUS	1					
25.5	PENAEUS SP.			1			
25.5	MYSIDOPSIS SP.					1	
25.5	DOLICHOPODIDAE				1		
25.5	LIBELLULIDAE	1					
25.5	GEUKENSIA DEMISSA	1					
25.5	POLYCHAETA	1					
25.5	NEREIDAE				1		

Appendix Table 12.2 Continued

RANK	SPECIES	SITE 2S WI83	WI84	SP84	SU83	SU84	FA83
1.0	OLIGOCHAETA	1819	96	1479	3254	2257	498
2.0	HYDROBIIDAE	995			768	13	49
3.0	CAPITELLA CAPITATA	6	35	130	489	31	34
4.0	LITTORIDINOPS MONROENSIS	282			616	1	9
5.0	CHIRONOMIDAE	243		7	428	1	194
6.0	HYDROPHILIDAE A	140		3	285	4	23
7.0	STENONINEREIS MARTINI	10	4	22	62	37	269
8.0	HOBSONIA FLORIDA		10	95	22	106	111
9.0	HYDROBIIDAE A	349			74		6
10.0	HYDROBIIDAE B	110			63		4
11.0	HYDROBIIDAE D	8			68	10	1
12.0	STREBLOSPIO BENEDICTI		2	1			4
13.0	HYDROBIIDAE C	18			9	1	
14.0	PALAEMONETES PUGIO	6				1	4
15.0	TABANIDAE	2				1	7
16.0	UCA SP.			1	2	5	
17.0	LIBELLULIDAE	4			1	2	
18.5	CERATOPOGONIDAE	1			1	4	
18.5	HYDROPHILIDAE B				4	1	1
20.0	DOLICHOPODIDAE				4	1	
21.0	EPHYDRIDAE				4		
23.0	COENAGRIONIDAE	3					
23.0	TIPULIDAE				3		
23.0	NEREIS SUCCINEA	1			2		
25.5	LAEONEREIS CULVERI				1		1
25.5	MANAYUNKIA SP.				2		
31.5	GAMMARUS MUCRONATUS					1	
31.5	STRATIOMYIDAE						1
31.5	COLLEMBOLA			1			
31.5	CUCULIDAE					1	
31.5	PSYCHODIDAE *					1	
31.5	NEMATODA						1
31.5	ONOBOPS JACKSONI				1		
31.5	LUMBRICUS TERRESTRIS						
31.5	SPIONIDAE						
31.5	CAPITELLIDAE	1					

Appendix Table 12.2 Continued

RANK	SPECIES	SITE 2D WI83	WI84	SP84	SU83	SU84	FA83
	BALANUS IMPROVISUS						P
1.0	STREBLOSPIO BENEDICTI	56	19	1		118	
2.0	CAPITELLA CAPITATA	127				79	4
3.0	MYSIDACEA					19	
4.5	CHIRONOMIDAE			6			
4.5	NEREIS SUCCINEA	5				1	
6.5	MYSIDOPSIS SP.					4	
6.5	STENONINEREIS MARTINI	1					2
8.0	PALAEMONETES PUGIO			3			
10.5	PENAEIDAE						2
10.5	HOBSONIA FLORIDA	2					
10.5	OLIGOCHAETA	1		1			
10.5	NEREIS SP.	2					
15.0	MACOMA TENTA						1
15.0	MACOMA SP.					1	
15.0	LAEONEREIS CULVERI					1	
15.0	SPIONIDAE						
15.0	NEREIDAE	1					

Appendix Table 12.2 Continued

RANK	SPECIES	SITE 3C WI83	WI84	SP84	SU83	SU84	FA83
	BALANUS IMPROVISUS			P			P
	BALANUS SP.			P		P	
	MEMBRANIPORA ARBORESCENS			P			
	CRASSOSTREA VIRGINICA			P			
1.0	COROPHIUM LACUSTRE	20	2	793		31	42
2.0	STREBLOSPIO BENEDICTI	385	21	15	75	22	71
3.0	OLIGOCHAETA	134	2	50	58	17	19
4.0	LAEONEREIS CULVERI	15		3	115	91	14
5.0	NEREIS SUCCINEA	7		66	14	8	2
6.0	CAPITELLA CAPITATA				26	49	
7.0	POLYDORA SP.	1		5		44	5
8.0	NEMERTINEA	1		7	11	19	10
9.0	MELITA NITIDA	16		18		2	2
10.0	HETEROMASTUS FILIFORMIS	24		2	3	3	
11.0	HOBSONIA FLORIDA			23	1		
12.0	TELLINA SP.			5	13	1	
13.0	NEMERTINEA B	15			1		
14.0	MULINIA LATERALIS	1			6	4	1
15.0	MACOMA BALTHICA				11		
16.0	TELLINIDAE	8		2			
17.0	POLYDORA LIGNI	3					6
18.5	CASSINIDEA LUNIFRONS	1				4	3
18.5	SCOLECOLEPIDES VIRIDIS				8		
21.0	NEMERTINEA A	3			4		
21.0	SABELLARIA VULGARIS						7
21.0	ETEONE HETEROPODA	5				1	
25.0	MOLGULA MANHATTENSIS	4					1
25.0	PALAEMONETES PUGIO	4				1	
25.0	PALAEMONETES VULGARIS			5			
25.0	EDOTEA MONTOSA	3					
25.0	POLYDORA SP. A						1
28.0	STENONINEREIS MARTINI					2	2
31.5	CALLINECTES SAPIDUS	1		1			
31.5	RHITHROPANOPEUS HARRISII			3			
31.5	EURYPANOPEUS DEPRESSUS			3			
31.5	CHIRONOMIDAE			3			
31.5	MACOMA SP.					2	1
31.5	GLYCERA AMERICANA						3
36.0	TRACHYPENAEUS CONSTRICTUS						2
36.0	PARAPLEUSTES AESTUARIUS	2					
36.0	TELLINIDAE *	2					
48.5	TRACHYPENAEUS CONSTRICTUS *						
48.5	ALPHEUS HETEROCHAELIS						
48.5	NEOPANOPE SAYI						1
48.5	PANOPEUS HERBSTII			1			
48.5	GAMMARUS SP.	1					
48.5	GAMMARUS MUCRONATUS	1					
48.5	COROPHIUM SP.					1	
48.5	COROPHIIDAE A	1					
48.5	GAMMARUS TIGRINUS			1			
48.5	PHOXICHILIIDAE	1					
48.5	NEMERTINEA C	1					
48.5	ISCHADIUM RECURVUM			1			
48.5	MACOMA SP. *	1					
48.5	MACOMA SP. A	1					
48.5	HETERODONTIDA A	1					
48.5	HETERODONTIDA B	1					
48.5	SCOLECOLEPIDES VIRIDIS *				1		
48.5	NEPHTYS SP.	1					
48.5	HIRUDINEA					1	
48.5	CAPITELLIDAE				1		
48.5	PARAPRIONOSPIO PINNATA						1
48.5	MEDIOMASTUS CALIFORNIENSIS						

Appendix Table 12.2 Continued.

RANK	SPECIES	SITE 3M WI83	WI84	SP84	SU83	SU84	FA83
1.0	OLIGOCHAETA	2339	54	843	1299	447	944
2.0	STREBLOSPIO BENEDICTI	246	35	63	5	34	164
3.0	NEREIS SUCCINEA	73	7	70	144	22	33
4.0	MANAYUNKIA SP.	189		69	38	3	8
5.0	HYDROBIIDAE	39		6	72	15	33
6.0	GAMMARUS PALUSTRIS	66	1	39	18	4	4
7.0	ORCHESTIA UHLERI	68	1	11	18	22	3
8.0	HARGERIA RAPAX	84		14	2		2
9.0	CASSINIDEA LUNIFRONS	29		6	28	7	6
10.0	CERATOPOGONIDAE	70			1	2	
11.0	CAPITELLA CAPITATA	41		8	1	7	1
12.0	UCA SP.	9		14	4	21	4
13.0	HYDROBIIDAE D	3			34	6	5
14.0	EPHYDRIDAE	2			42		
15.0	UCA PUGNAX				14		11
16.0	HOBSONIA FLORIDA				5	13	
18.0	CHIRONOMIDAE	1	1				
18.0	NEMATODA	7			5		5
18.0	HYDROBIIDAE C	13			2		2
20.0	ETEONE HETEROPODA	1					5
21.0	HYDROBIIDAE B	1					7
22.5	MUSCIDAE	2				5	
22.5	POLYDORA SP. A				6		
24.5	DOLICHOPODIDAE	5					
24.5	HYDROBIIDAE A	2			2		2
27.0	PALAEMONETES PUGIO					1	4
27.0	UCA MINAX	5					
27.0	POLYDORA LIGNI	5					
29.0	GEUKENSIA DEMISSA	2				1	1
30.5	LAEONEREIS CULVERI				1	1	1
30.5	CAPITELLIDAE			1	2		
36.0	PALAEMONETES VULGARIS					1	1
36.0	MELITA APPENDICULATA				2		
36.0	GAMMARIDEA	2					
36.0	HYDROPHILIDAE A	2					
36.0	COENAGRIONIDAE	2					
36.0	NEMERTINEA				2		
36.0	GASTROPODA					2	
36.0	STENONINEREIS MARTINI	1					1
36.0	POLYDORA SP.						1
53.0	CALLINECTES SAPIDUS	1					
53.0	PANOPEUS HERBSTII	1					
53.0	SESARMA RETICULATUM						1
53.0	PALAEMONETES SP.					1	
53.0	SESARMA CINEREUM	1					
53.0	MELITA NITIDA					1	
53.0	OSTRACODA					1	
53.0	ERICHTHONIUS BRASILIENSIS	1					
53.0	EDOTEA MONTOSA	1					
53.0	CAPRELLA SP.	1					
53.0	ORCHESTIA UHLERI *						1
53.0	HETEROCERIDAE *						1
53.0	TABANIDAE	1					
53.0	EMPIDAE *	1					
53.0	LIBELLULIDAE	1					
53.0	HYDROPHILIDAE *	1					
53.0	HYDROPHILIDAE B					1	
53.0	COLLEMBOLA					1	
53.0	POLYMESODA CAROLINIANA *			1			
53.0	LITTORINA IRRORATA					1	
53.0	MACOMA SP.				1		
53.0	LITTORIDINOPS MONROENSIS				1		
53.0	HOBSONIA FLORIDA *						1
53.0	CAPITELLA CAPITATA *	1					
53.0	CAPITELLIDAE *			1			

Appendix Table 12.3

Community structure values [number of individuals, number of species, species diversity (H'), evenness (S') and species richness (SR)] obtained by pooling data taken each sampling period from replicate quadrats.

STRATA	SEASON	NO. INDIV.	NO. SPECIES	H'	J'	SR
	WI(1)	806	9	1.55	0.49	1.19
	SU(1)	122	9	2.22	0.70	1.67
	FA	30	4	1.76	0.88	0.88
1R	WI(2)	26	6	1.87	0.72	1.53
	SP	5	5	2.32	1.00	2.49
	SU(2)	46	5	1.32	0.57	1.04
	WI(1)	215	13	2.20	0.59	2.23
	SU(1)	189	12	1.65	0.46	2.10
	FA	4	2	0.81	0.81	0.72
2R	WI(2)	59	6	1.32	0.51	1.23
	SP	14	6	2.32	0.89	1.89
	SU(2)	31	6	2.31	0.89	1.46
	WI(1)	757	12	1.95	0.54	1.66
	SU(1)	209	12	2.23	0.62	2.06
	FA	177	14	2.46	0.65	2.51
1Sp	WI(2)	20	2	0.29	0.29	0.33
	SP	6	4	1.79	0.89	1.67
	SU(2)	98	10	1.81	0.54	1.96
	WI(1)	931	11	2.18	0.63	1.46
	SU(1)	1700	15	2.40	0.61	1.88
	FA	467	12	1.86	0.52	1.79
2S	WI(2)	531	7	1.46	0.52	0.96
	SP	252	6	1.47	0.57	0.90
	SU(2)	198	11	2.01	0.58	1.89
	WI(1)	128	5	0.81	0.35	0.82
	SU(1)	2	2	1.00	1.00	1.44
	FA	8	4	1.55	0.77	1.44
1D	WI(2)	57	4	1.20	0.60	0.74
	SP	73	4	0.46	0.23	0.70
	SU(2)	6	2	0.65	0.65	0.56
	WI(1)	193	6	1.23	0.47	0.95
	SU(1)	0	0	--	--	--
	FA	9	4	1.84	0.92	1.37
2D	WI(2)	202	4	0.17	0.08	0.57
	SP	4	2	0.81	0.81	0.72
	SU(2)	204	6	1.21	0.47	0.94

Appendix Table 12.3 Continued

STRATA	SEASON	NO. INDIV.	NO. SPECIES	H'	J'	SR
	WI(1)	519	27	1.80	0.38	4.16
	SU(1)	278	13	2.48	0.67	2.13
	FA	160	17	2.52	0.62	3.15
3C	WI(2)	266	13	1.25	0.34	2.15
	SP	952	17	1.13	0.28	2.33
	SU(2)	266	16	2.75	0.69	2.69
	WI(1)	846	25	3.04	0.65	3.56
	SU(1)	328	20	2.87	0.66	3.28
	FA	267	22	2.34	0.52	3.76
3M	WI(2)	474	11	1.35	0.39	1.62
	SP	297	12	2.77	0.77	1.93
	SU(2)	146	17	3.24	0.79	3.21

SECTION VII

NEKTONIC COMMUNITY

Appendix Table 13.1

Numbers of samples scheduled (S) and collected (C) at each station during the macroplankton sampling program.

	INTENSIVE & EXTENSIVE SAMPLES											
	CH01		CH02		SC01		I200		I400		TOTAL	
	S	C	S	C	S	C	S	C	S	C	S	C
YEAR I												
JAN 83	2	2	2	2			2	2			6	6
FEB	15	15	15	15	12	12	15	13	12	10	69	65
MAR	16	15	16	15	12	11	16	13	12	10	72	64
APR	15	15	15	15	12	12	15	12	12	9	69	63
MAY	16	15	16	15	12	12	16	15	12	11	72	68
JUN	15	15	15	15	12	12	15	13	12	9	69	64
JUL	15	15	15	15	12	12	15	14	12	10	69	66
AUG	16	16	16	16	12	12	16	1	12	1	72	46
SEP	15	15	15	15	12	12	15	3	12	0	69	45
OCT	15	15	15	15	12	12	15	7	12	0	69	49
NOV	15	15	15	15	12	12	15	9	12	0	69	51
DEC	16	16	16	16	12	12	16	7	12	6	72	57
JAN 84	14	13	14	13	12	11	14	10	12	8	66	55
TOTAL	185	182	185	182	144	142	185	119	144	74	843	699
YEAR II												
FEB	2	2	2	2			2	2			6	6
MAR	2	2	2	2			2	2			6	6
APR	2	2	2	2			2	2			6	6
MAY	3	3	3	3			3	3			9	9
JUN	2	2	2	2			2	2			6	6
JUL	2	2	2	2			2	2			6	6
AUG	2	2	2	2			2	2			6	6
SEP	2	2	2	2			2	2			6	6
OCT	2	2	2	2			2	2			6	6
NOV	2	2	2	2			2	0			6	4
DEC	1	1	1	1			1	0			3	2
TOTAL	22	22	22	22			22	19			66	63

Appendix Table 13.1 Continued

	SPECIAL SAMPLES											
	CH01		CH02		SC01		I200		I400		TOTAL	
Draindown (May 83)							9	9	9	8	18	17
Reflood (May 83)							2	2	2	2	4	4
Water level reduction (Oct 83)							3	3	3	3	6	6
Water level reduction (NOV 83)							3	3	3	3	6	6
TOTAL	9	9					17	17	17	16	43	42
All Samples	216	213	207	204	144	142	224	155	161	90	952	804

Appendix Table 13.2

Number of samples collected by month, and number of individuals and density of penaeids by month and species for all samples (Extensive, Intensive and Event) collected during Years I and II.

Month	Number of Samples	P. aztecus N	P. aztecus N/100 m³	P. duorarum N	P. duorarum N/100 m³	P. setiferus N	P. setiferus N/100 m³	T. constrictus N	T. constrictus N/100 m³	P. sp. N	P. sp. N/100 m³	TOTAL N	TOTAL N/100 m³
JAN	6	0		0		0		0		0		0	
FEB	65	0		0		0		0		0		0	
MAR	64	0		0		0		0		0		0	
APR	63	0		0		0		0		0		0	
MAY	89	305	9.07	23	0.71	0		0		33	1.01	361	10.79
JUN	64	12	0.39	20	0.65	46	1.50	33	1.08	8	0.26	119	3.88
JUL	66	10	0.33	184	6.05	968	31.81	43	1.41	9	0.30	1214	39.90
AUG	46	2	0.09	388	17.00	119	5.21	36	1.58	1	0.04	546	23.92
SEP	45	0		448	21.45	54	2.59	79	3.78	0		581	27.82
OCT	55	1	0.03	563	18.85	12	0.40	37	1.24	0		613	20.52
NOV	57	1	0.04	131	5.43	9	0.17	11	0.46	0		152	6.10
DEC	57	40	1.48	11	0.41	7	0.26	0		0		58	2.15
JAN	55	0		0		0		0		0		0	
FEB	6	1	0.27	0		0		0		0		1	0.27
MAR	6	0		0		0		0		0		0	
APR	6	37	11.40	0		0		0		0		37	11.40
MAY	9	49	20.33	0		0		0		0		49	20.33
JUN	6	0		1	0.56	0		0		0		1	0.56
JUL	6	0		108	35.39	0		0		0		108	35.39
AUG	15	1	0.46	225	42.24	0		7	1.31	0			
SEP	6	0		66	24.80	0		41	15.41	0		107	40.21
OCT	6	0		18	5.06	0		4	1.12	0		22	6.18
NOV	4	0		2	0.84	0		0		0		2	0.84
DEC	2	0		0		0		0		0		0	
YEAR I TOTAL	732	371	1.14	1768	5.46	1215	3.75	239	0.74	51	0.16	3644	11.25
YEAR II TOTAL	72	88	2.75	420	13.14	0		52	1.63	0		560	17.25
TWO-YEAR TOTAL	804	459	1.29	2188	6.15	1275	3.41	291	0.82	51	0.14	4204	11.81

Appendix Table 13.3

Dates, penaeid shrimp densities (N/100 m3), and water temperatures and salinities of Extensive macroplankton samples collected during Years I and II (19 Jan 83 - 5 Dec 84).

Date	Penaeus aztecus	Penaeus duorarum	Penaeus setiferus	Trachypenaeus constrictus	Penaeus sp.	All Penaeids	Temp. (°C)	Salinity (ppt)
				YEAR I				
19 JAN 83	0	0	0	0	0	0	6.4	4.0
27	0	0	0	0	0	0	8.6	9.5
1 FEB	0	0	0	0	0	0	14.8	15.0
10	0	0	0	0	0	0	9.7	10.0
15	0	0	0	0	0	0	9.5	6.3
23	0	0	0	0	0	0	11.7	0.0
1 MAR	0	0	0	0	0	0	10.7	3.0
9	0	0	0	0	0	0	15.6	0.5
15	0	0	0	0	0	0	17.5	2.7
23	0	0	0	0	0	0	14.0	3.0
29	0	0	0	0	0	0	18.1	0.8
6 APR	0	0	0	0	0	0	17.0	1.5
12	0	0	0	0	0	0	18.1	1.4
19	0	0	0	0	0	0	14.4	0.5
28	0	0	0	0	0	0	17.9	1.1
7 MAY	17.03	0	0	0	27.86	44.89	23.4	3.0
12	22.63	0	0	0	12.73	35.36	23.8	12.8
17	17.30	4.12	0	0	2.47	23.89	22.3	19.5
24	6.26	0.89	0	0	0	7.15	24.2	21.5
30	5.40	1.80	0	0	0	7.20	26.6	25.5
8 JUN	0	0	0	0	0	0	25.0	20.5
15	1.20	0.40	0	0.68	0	2.28	27.2	25.4
22	0.82	0.82	8.99	0	0	10.63	26.8	24.2
28	0	3.48	6.97	0	0.70	11.15	28.9	21.9
6 JUL	0	5.58	507.18	0	0	512.76	27.8	15.1
12	0	15.09	5.66	5.66	1.33	27.74	30.6	22.3
19	0	59.50	104.80	0	0	164.30	30.4	25.3
27	0	15.42	60.27	1.40	0	77.09	29.4	27.1
2 AUG	3.07	35.28	24.54	0	0	62.89	31.6	26.3
9	0	34.82	17.41	5.80	0	58.03	30.8	26.4
16	0	28.33	6.89	0.77	0	35.99	27.0	29.3
25	0	19.58	8.97	3.26	0	31.81	29.2	24.9
30	0	72.16	0.93	1.85	0	74.94	31.1	25.6
7 SEP	0	62.41	9.93	0	0	72.34	32.4	28.4
12	0	58.10	3.71	1.24	0	63.05	30.5	28.2
20	0	7.72	0	0	0	7.72	26.0	25.4
26	0	13.93	0	2.46	0	16.39	23.4	26.9
5 OCT	0	20.06	2.08	4.84	0	26.98	25.7	27.7
11	0	49.37	0	2.51	0	51.88	22.9	30.9
20	0	24.61	0	0	0	24.61	21.4	29.6
27	0	243.58	0.95	0	0	244.53	17.2	29.5
3 NOV	0	12.02	1.00	0	0	13.02	18.0	31.0
8	0	7.13	0	0.71	0	7.84	17.1	31.9
16	0	2.68	0	0	0	2.68	16.0	24.9
21	0	1.65	0	0	0	1.65	16.6	23.9
2 DEC	6.48	1.29	0	0	0	7.77	12.2	22.3
5	0	0.91	0	0	0	0.91	17.0	24.5
13	6.73	0	1.68	0	0	8.41	15.4	18.0
19	0	0	3.18	0	0	3.18	12.0	9.4
31	0	0	0	0	0	0	4.0	3.0
4 JAN 84	0	0	0	0	0	0	6.6	6.0
9	0	0	0	0	0	0	8.6	6.3
18	0	0	0	0	0	0	9.0	12.1
TOTAL	1.34	13.83	15.56	0.61	0.53	31.87		

Appendix Table 13.3 Continued

Date	*Penaeus aztecus*	*Penaeus duorarum*	*Penaeus setiferus*	*Trachypenaeus constrictus*	*Penaeus* sp.	All Penaeids	Temp. (°C)	Salinity (ppt)
				YEAR II				
1 FEB	0	0	0	0	0	0	7.9	0.9
16	0.52	0	0	0	0	0.52	14.8	13.7
2 MAR	0	0	0	0	0	0	10.1	1.1
19	0	0	0	0	0	0	20.6	1.2
3 APR	20.81	0	0	0	0	20.81	16.0	2.0
16	1.28	0	0	0	0	1.28	20.6	1.6
1 MAY	30.57	0	0	0	0	30.57	22.7	2.0
16	4.91	0	0	0	0	4.91	22.1	1.8
31	20.39	0	0	0	0	20.39	21.5	19.9
13 JUN	0	0	0	0	0	0	26.8	21.1
28	0	1.27	0	0	0	1.27	27.2	23.7
12 JUL	0	2.09	0	0	0	2.09	27.1	26.1
30	0	65.06	0	0	0	65.06	28.4	24.6
13 AUG	0.68	38.25	0	0	0	38.93	29.4	14.5
27	0	26.16	0	10.17	0	36.33	27.2	29.1
18 SEP	0	36.92	0	0	0	36.92	21.3	21.9
25	0	13.23	0	30.12	0	43.35	26.3	28.7
10 OCT	0	6.41	0	0	0	6.41	21.8	26.6
24	0	3.79	0	2.17	0	5.96	25.8	29.0
8 NOV	0	1.77	0	0	0	1.77	14.1	27.4
27	0	0	0	0	0	0	15.3	29.7
5 DEC	0	0	0	0	0	0	12.3	24.7
YEAR II	3.06	9.34	0	1.81	0	14.21		

Appendix Table 13.4

Catches of penaeid shrimps from Intensive samples in relation to species, station, and month (N = number of individuals; N/100 m^3 = number of individuals per 100 m^3 of water filtered; Number of samples: CH01 = 141, CH02 = 141, SC01 = 142, I200 = 82, I400 = 68).

Penaeus aztecus

	CH01		CH02		SC01		I200		I400	
	N	N/100 m^3	N	N/100 m^3	N	N/100 m^3	N	N/100 m^3	N	N/100 m^3
FEB	0		0		0		0		0	
MAR	0		0		0		0		0	
APR	0		0		0		0		0	
MAY	26	5.97	22	6.28	47	7.13	88	31.79	40	17.32
JUN	0		0		1	0.14	8	1.10	2	1.61
JUL	0		0		1	0.19	8	1.08	1	0.40
AUG	0		0		0		0		0	
SEP	0		0		0		0		0	
OCT	0		0		1	0.14	0		0	
NOV	0		0		1	0.14	0		0	
DEC	7	1.19	12	2.18	17	1.60	0		0	
JAN	0		0		0		0		0	
TOTAL	33	0.44	34	0.51	68	0.76	104	4.67	43	4.29

All Creek Stations		All Impoundment Stations	
N/Station	N/100 m^3	N/Station	N/100 m^3
45.0	0.58	73.5	4.52

Penaeus duorarum

FEB	0		0		0		0		0	
MAR	0		0		0		0		0	
APR	0		0		0		0		0	
MAY	2	0.46	3	0.86	2	0.30	3	1.08	5	2.16
JUN	4	0.65	3	0.54	4	0.41	3	0.41	0	
JUL	32	4.72	16	3.32	22	4.28	15	2.03	3	1.21
AUG	40	7.29	58	11.28	111	15.20	15	32.40	2	12.27
SEP	87	16.71	96	21.61	190	23.95	2	17.54	0	
OCT	81	12.56	41	7.05	97	13.26	7	2.72	0	
NOV	43	7.00	25	4.57	49	6.73	0		0	
DEC	0		3	0.55	7	0.66	0		0	
JAN	0		0		0		0		0	
TOTAL	289	3.81	245	3.66	482	5.39	45	2.02	10	1.00

All Creek Stations		All Impoundment Stations	
N/Station	N/100 m	N/Station	N/100 m
338.7	4.37	27.5	1.69

Appendix Table 13.4 Continued

	CH01		CH02		SC01		I200		I400	
	N	N/100 m^3	N	N/100 m^3	N	N/100 m^3	N	N/100 m^3	N	N/100 m^3
Penaeus setiferus										
FEB	0		0		0		0		0	
MAR	0		0		0		0		0	
APR	0		0		0		0		0	
MAY	0		0		0		0		0	
JUN	4	0.65	1	0.18	18	2.52	1	0.14	1	0.81
JUL	17	2.51	19	3.94	21	4.09	46	6.21	25	10.09
AUG	8	1.46	11	2.14	46	6.30	16	34.56	1	6.14
SEP	7	1.34	13	2.93	31	3.91	0		0	
OCT	1	0.16	1	0.17	1	0.14	5	1.94	0	
NOV	0		1	0.18	2	0.27	1	1.02	0	
DEC	1	0.09	0		1	0.09	0		0	
JAN	0		0		0		0		0	
TOTAL	38	0.50	46	0.69	120	1.34	69	3.10	27	2.69

All Creek Stations		All Impoundment Stations	
N/Station	N/100 m^3	N/Station	N/100 m^3
68.0	0.88	48.0	2.95

Trachypenaeus constrictus										
FEB	0		0		0		0		0	
MAR	0		0		0		0		0	
APR	0		0		0		0		0	
MAY	0		0		0		0		0	
JUN	1	0.17	2	0.36	13	1.82	1	0.14	16	12.91
JUL	7	1.03	8	1.66	5	0.97	7	0.95	14	5.65
AUG	5	0.91	7	1.36	10	1.37	5	10.80	2	12.27
SEP	16	3.07	18	4.05	41	5.17	0		0	
OCT	2	0.31	8	1.38	10	1.37	14	5.44	0	
NOV	1	0.16	3	0.55	6	0.82	0		0	
DEC	0		0		0		0		0	
JAN	0		0		0		0		0	
TOTAL	32	0.42	46	0.69	85	0.95	27	1.21	32	3.19

All Creek Stations		All Impoundment Stations	
N/Station	N/100 m^3	N/Station	N/100 m^3
54.3	0.70	29.5	1.82

Appendix Table 13.5

Densities (N/100 m3) of portunid megalopae and crab stages of C. sapidus and temperature and salinity readings from Extensive samples. Stations CH01, CH02 and I200 are included in density estimates. Temperature and salinity readings are from station CH02. Numbers in ( ) are numbers of individuals used in density calculations.

	Megalopae		Crab stages		Temp. (°C)	Sal (ppt).
	N	N/100 m	N	N/100 m		
19 Jan	0		0		6.4	4.0
27	0		0		8.6	9.5
1 Feb	2	1.36	13(12)	8.17	14.8	15.0
10	0		10(5)	3.88	9.7	10.0
15	0		1	0.71	9.5	6.3
23	0		1	0.70	11.7	0.0
1 Mar	0		1	0.55	10.7	3.0
9	0		3	2.06	15.6	0.5
15	0		2(1)	0.89	17.5	2.7
23	0		2	1.68	14.0	3.0
29	0		1	0.88	18.1	0.8
6 Apr	0		0		17.0	1.5
12	0		0		18.1	1.4
19	0		0		14.4	0.5
28	0		0		17.9	1.1
7 May	1	1.55	3(1)	1.55	23.4	3.0
12	1	1.41	11	15.56	23.8	12.8
17	53	43.66	16	13.18	22.3	19.5
24	28	25.02	0		24.2	21.5
30	17	15.30	3	2.70	26.6	25.5
8 Jun	0		2	3.60	25.0	20.5
15	0		0		27.2	25.4
22	7	5.72	0		26.8	24.2
28	6	4.18	9	6.27	28.9	21.9
6 Jul	2	1.60	8	6.38	27.8	15.1
12	0		0		30.6	22.3
19	141	125.2	0		30.4	25.3
27	14	9.81	18	12.61	29.2	27.1
2 Aug	25	38.34	3	4.60	31.6	26.3
9	25	24.18	9	8.70	30.8	26.4
16	59	45.18	2	1.53	27.0	29.3
25	59	48.12	8	6.52	29.2	24.9
30	56	51.80	11	10.18	31.1	25.6
7 Sep	14	19.86	3	4.26	32.4	28.4
12	77	95.18	15	18.54	30.5	28.2
20	9	7.72	11	9.43	26.0	25.4
26	207	169.67	3	2.46	23.4	26.9
5 Oct	71	49.10	9	6.22	25.7	27.7
11	130	108.89	3	2.51	22.9	30.9
20	15	16.78	2	2.24	21.4	29.6
27	114	108.47	0		17.2	29.5
3 Nov	40	40.08	1	1.00	18.0	31.0
8	333	237.35	1	0.71	17.1	31.9
16	171	229.2	2	2.68	16.0	24.9

Appendix Table 13.5 Continued

	Megalopae		Crab stages		Temp. (°C)	Sal (ppt).
	N	N/100 m	N	N/100 m		
21	92	75.78	1	0.82	16.6	23.9
2 Dec	44	29.77	3	1.94	12.2	22.3
5	5	4.57	0		17.0	24.5
13	31	52.19	25(3)	5.05	15.4	18.0
19	4	3.51	2	1.75	12.0	9.4
31	0		0		4.0	3.0
4 Jan	0		0		6.6	6.0
9	0		1	1.09	8.6	6.3
18	0		4	1.85	9.0	12.1

Appendix Table 13.6

Number of individuals collected (N) and density (N/100 m3) of portunid megalopae (2A) and crab stages of C. sapidus (2B) in relation to station and month from Intensive samples.

A. Portunid Megalopae

	CH01		CH02		SC01		I200		I400	
FEB	0		0		0		0		0	
MAR	0		0		0		0		0	
APR	0		0		0		0		0	
MAY	2	0.46	1	0.29	7	1.06	30(25)	9.03	3	1.30
JUN	0		0		1	0.14	0		0	
JUL	0		1	0.21	1	0.19	1	0.14	1	0.40
AUG	13	2.37	14	2.72	23	3.15	16	34.56	1	6.14
SEP	33	6.34	132	29.71	91	11.48	5	43.86	0	
OCT	106	16.43	124	21.33	92	12.58	28	10.87	0	
NOV	101	16.45	92	16.83	130	17.86	4	4.09	0	
DEC	66	11.20	17	3.09	42	3.96	0		0	
JAN	0		0		0		0		0	
TOTAL	321	4.23	381	5.68	387	4.33	84(79)	3.51	5	0.50

All Creek Stations		All Impoundment Stations	
N/Station	N/100 m^3	N/Station	N/100 m^3
362.7	4.69	44.5	2.58

Appendix Table 13.6 Continued

B. Crab Stages

	CH01		CH02		SC01		I200		I400	
FEB	1	0.11	3	0.38	8	0.92	0		6(0)	--
MAR	5	0.55	4	0.49	4	0.53	5(0)	--	1(0)	--
APR	0		0		1	0.19	0		0	
MAY	5	1.15	4	1.14	3	0.46	25(24)	8.67	10(9)	3.90
JUN	1	0.16	1	0.18	1	0.14	14	1.92	3	2.42
JUL	0		0		1	0.19	6	0.81	2	0.81
AUG	3	0.55	3	0.58	8	1.10	9	19.44	0	
SEP	7	1.34	7	1.58	10	1.26	1	8.77	0	
OCT	4	0.62	5	0.86	3	0.41	15	5.83	0	
NOV	4	0.65	3	0.55	1	0.14	0		0	
DEC	2	0.34	10	1.82	3	0.28	1	2.53	3	5.83
JAN	0		0		0		0		0	
TOTAL	32	0.42	40	0.60	43	0.48	76(70)	3.11	25(17)	1.70

All Creek Stations		All Impoundment Stations	
N/Station	N/100 m^3	N/Station	N/100 m^3
38.3	0.50	50.5	2.68

Appendix Table 13.7

Number of individuals (N) and density (N/100 m^3) of Palaemonetes and temperature and salinity readings from Year I Extensive Samples. (NV = no volume calculated; NS = no sample taken).

	CHO1		CHO2		I200		Temp.	Salinity
	N	N/100 m^3	N	N/100 m^3	N	N/100 m^3	(°C)	(ppt)
19 Jan	3	NV	9	NV	3	NV	6.4	4.0
27	17	52.31	2	4.18	48	NV	8.6	9.5
1 Feb	1126	1414.57	230	342.26	1454	NV	14.8	15.0
10	183	290.48	287	436.17	749	NV	9.7	10.0
15	211	281.33	94	144.39	4	NV	9.5	6.3
23	6	7.70	5	7.70	26	NV	11.7	0.0
1 Mar	21	20.83	6	7.47	7	NV	10.7	3.0
9	78	98.24	71	107.25	14	NV	15.6	0.5
15	29	42.90	11	24.89	738	NV	17.5	2.7
23	152	227.89	28	60.22	5	80.65	14.0	3.0
29	113	165.69	34	77.10	96	8000.00	18.1	0.8
6 Apr	33	62.74	18	36.73	0		17.0	1.5
12	9	12.15	11	22.04	136	13600.00	18.1	1.4
19	31	68.89	171	511.98	13	1300.00	14.4	0.5
28	4	14.60	1	3.24	0		17.9	1.1
7 May	116	316.08	71	254.48	572	NV	23.4	3.0
12	86	189.85	46	219.05	2936	66,727.27	23.8	12.8
17	16	57.14	3	18.29	4090	5311.69	22.3	19.5
24	23	51.45	35	66.54	443	3034.25	24.2	21.5
30	245	392.00	0		17898	88,603.96	26.6	25.5
8 Jun	109	372.01	149	610.66	13041	724,500.00	25.0	20.5
15	13	22.30	4	9.03	965	657.36	27.2	25.4
22	10	17.39	62	110.52	232	2666.67	26.8	24.2
28	184	343.93	101	209.54	2232	5339.71	28.9	21.9
6 Jul	101	258.97	43	88.48	1204	3185.19	27.8	15.1
12	0		18	68.97	69	224.76	30.6	22.3
19	69	115.38	73	138.26	NS		30.4	25.3
27	104	172.19	12	41.24	204	383.46	29.4	27.1
2 Aug	6	15.83	16	58.61	NS		31.6	26.3
9	0		7	33.18	437	943.84	30.8	26.4
16	19	28.83	28	43.28	NS		27.0	29.3
25	73	97.86	31	64.58	NS		29.2	24.9
30	12	22.43	23	42.12	NS		31.1	25.6
7 Sep	1	2.66	2	7.63	45	671.64	32.4	28.4
12	151	381.31	93	225.18	NS		30.5	28.2
20	20	38.61	18	40.54	5	24.51	26.0	25.4
26	13	19.82	11	19.50	NS		23.4	26.9
5 Oct	1	2.09	0		520	947.18	25.7	27.7
11	0		9	16.07	NS		22.9	30.9
20	0		8	18.65	NS		21.4	29.6
27	8	16.03	9	18.11	3	54.55	17.2	29.5
4 Nov	3	5.75	1	2.68	22	213.59	18.0	31.0
8	5	8.25	25	37.65	13	97.74	17.1	31.9
16	9	18.15	16	68.38	28	1750.00	16.0	24.9
21	1	1.86	3	5.05	6	72.29	16.6	23.9

Appendix Table 13.7 Continued

	CHO1		CHO2		I200		Temp.	Salinity
	N	N/100 m^3	N	N/100 m^3	N	N/100 m^3	(°C)	(ppt)
2 Dec	21	27.38	28	39.38	45	681.82	12.2	22.3
5	6	11.09	11	21.19	41	1205.88	17.0	24.5
13	9	27.78	8	29.63	54	NV	15.4	18.0
19	53	80.06	106	221.29	6	50.83	12.0	9.4
31	0		0		14	129.61	4.0	3.0
4 Jan	148	233.07	69	123.21	8	58.82	6.6	6.0
9	117	248.41	57	154.05	71	922.08	8.6	6.3
18	120	176.21	172	225.13	2235	3108.48	9.0	12.1
TOTAL	3885	134.27	2337	96.59	57,043	6562.00		
	(3888)		(2346)		(53,378)			

Appendix Table 14.1 Catches of larval and juvenile fishes by station and year arranged in phylogenetic order. CCS = Chainey Creek surface; CCB = Chainey Creek bottom; MFC = marsh feeder creek; IMP = water control structure at a given impoundment.

	JANUARY 1983 - JANUARY 1984						FEBRUARY - DECEMBER 1984			
	CCS	CCB	MFC	IMP2	IMP3	IMP4	CCS	CCB	IMP2	TOTAL
Elopidae	-	-	-	4	-	1	-	-	-	5
Elops saurus	14	5	20	663	-	853	4	3	86	1648
Megalops atlanticus	1	1	-	26	-	-	-	-	-	31
Anguilliformes	1	-	-	-	-	-	-	-	-	1
Anguillidae										
Anguilla rostrata	7	5	2	7	-	-	-	2	3	26
Ophichthidae										
Myrophis punctatus	26	12	7	44	-	16	3	1	2	111
Clupeidae										
Brevoortia tyrannus	468	551	207	92	-	2	239	134	8	1701
Dorosoma petenense	3	3	-	-	-	-	-	-	-	6
Engraulidae	109	143	194	99	-	89	2	1	2	639
Anchoa hepsetus	3	2	-	1	1	-	-	-	-	7
Anchoa mitchilli	443	506	395	726	-	123	118	137	55	2503
Ictaluridae										
Ictalus catus	-	-	-	1	-	-	-	-	-	1
Batrachoididae										
Opsanus tau	1	-	-	-	-	-	-	-	-	1
Cyprinodontidae										
Cyprinodon variegatus	5	3	6	130	7	21	1	-	3	176
Fundulus sp.	19	10	30	21	-	34	-	-	2	117
Fundulus confluentus	-	-	-	2	-	-	-	-	-	2
Fundulus heteroclitus	2	-	6	73	5	134	-	-	26	246
Lucania parva	1	4	2	123	3	10	-	1	7	151
Poeciliidae										
Gambusia affinis	3	4	2	37	2	98	-	-	1	147
Poecilia latipinna	-	-	-	37	-	151	-	-	-	188
Atherinidae	7	1	6	4	-	53	-	-	-	72
Menidia menidia	-	5	-	5	1	-	-	-	-	11
Menidia beryllina	7	12	26	408	23	149	-	1	49	675
Syngnathidae										
Syngnathus sp.	-	1	-	2	-	-	-	-	-	3
Syngnathus fuscus	1	2	-	2	-	4	-	1	-	9
Syngnathus louisianae	1	2	7	5	1	3	1	-	1	19
Syngnathus scovelli	5	7	4	8	-	-	-	-	-	24

Appendix Table 14.1 Continued

	JANUARY 1983 - JANUARY 1984						FEBRUARY - DECEMBER 1984			
	CCS	CCB	MFC	IMP2	IMP3	IMP4	CCS	CCB	IMP2	TOTAL
Trilidae										
Prionotus sp.	-	-	-	-	-	-	1	-	-	1
Prionotus carolinus	1	-	-	-	-	-	-	-	-	1
Prionotus scitulus	-	-	1	-	-	-	-	-	-	1
Prionotus tribulus	1	-	-	-	-	-	-	-	-	1
Serranidae										
Mycteroperca microlepis	-	-	-	-	-	-	1	-	-	1
Centrarchidae										
Lepomis gulosus	-	-	-	-	-	-	-	-	1	1
Carangidae										
Caranx hippos	1	-	-	1	-	1	-	-	-	3
Lutjanidae										
Lutjanus griseus	-	1	1	-	-	-	-	-	-	2
Gerreidae										
Gerreidae Type I	50	33	37	30	-	1	4	6	5	166
Gerreidae Type II	-	-	1	6	-	-	-	-	-	7
Haemulidae										
Orthopristis chrysopterus	2	-	-	-	-	-	-	-	-	2
Sparidae	2	-	-	-	-	-	-	-	-	2
Archosargus probatocephalus	1	-	-	-	-	-	-	-	-	1
Diplodus holbrooki	-	-	-	1	-	-	-	-	-	1
Lagodon rhomboides	1104	555	824	220	23	3	34	23	129	2729
Sciaenidae	8	20	29	36	-	25	2	-	-	131
Bairdiella chrysoura	62	78	71	93	-	8	46	22	29	363
Cynoscion nebulosus	12	12	18	2	-	-	-	-	2	46
Cynoscion regalis	101	67	98	74	-	106	33	21	195	695
Leiostomus xanthurus	10167	7093	9638	796	14	20	657	479	588	29452
Menticirrhus sp.	9	7	10	14	-	12	-	-	-	57
Micropogonias undulatus	1150	1238	667	505	7	355	99	92	41	4154
Pogonias cromis	3	3	15	8	-	5	-	-	-	34
Sciaenops ocellatus	23	29	85	-	-	-	2	2	-	141
Stellifer lanceolatus	3	6	2	-	-	-	-	-	-	11
Ephippidae										
Chaetodipterus faber	1	-	1	1	-	-	-	-	-	3
Mugilidae										
Mugil cephalus	137	82	70	331	6	325	2	3	2142	3098
Mugil curema	-	-	-	-	-	3	-	-	-	3

Appendix Table 14.1 Continued

	JANUARY 1983 - JANUARY 1984						FEBRUARY - DECEMBER 1984			
	CCS	CCB	MFC	IMP2	IMP3	IMP4	CCS	CCB	IMP2	TOTAL
Blenniidae										
Hypsoblennius sp.	1	1	1	-	-	1	-	-	-	4
Eleotridae	-	-	3	-	-	-	-	-	-	3
Dormitator maculatus	-	2	1	3	-	3	3	1	1	34
Eleotris pisonis	-	-	1	-	-	-	-	-	-	1
Gobiidae	27	21	17	21	-	3	-	-	11	100
Evorthodus lyricus	-	1	-	-	-	-	-	2	2	5
Gobionellus sp.	-	3	1	2	-	-	1	-	-	7
Gobionellus boleosoma	116	93	109	42	1	6	13	14	12	406
Gobionellus hastatus	9	7	10	14	-	12	-	3	2	57
Gobionellus shufeldti	16	5	5	4	-	3	1	-	2	38
Gobiosoma sp.	10	21	4	3	-	1	-	-	-	39
Gobiosoma bosci	437	356	438	284	3	74	102	66	94	1854
Gobiosoma ginsburgi	33	11	7	7	-	2	-	-	-	60
Microgobius sp.	1	-	-	-	-	-	-	-	-	1
Microgobius thalassinus	57	44	113	14	-	-	1	3	3	235
Bothidae										
Citharichthys spilopterus	8	11	3	-	-	-	3	-	-	25
Etropus crossotus	-	1	1	-	-	-	-	-	-	2
Paralichthys albigutta	2	2	-	-	-	-	-	-	-	4
Paralichthys dentatus	31	32	28	3	-	-	5	3	-	102
Paralichthys lethostigma	36	38	21	1	-	-	5	7	2	110
Soleidae										
Trinectes maculatus	5	10	5	1	-	3	-	1	-	26
Cynoglossidae										
Symphurus civitatum	-	-	-	-	-	-	1	-	-	1
Symphurus plagiusa	61	32	35	6	-	1	29	31	19	260
Balistidae										
Stephanolepis hispidus	2	-	2	2	-	1	-	-	-	7
Tetraodontidae										
Sphoeroides sp.	1	-	-	-	-	-	-	-	-	1

Appendix Table 14.2 **Fishes collected by ichthyoplankton nets at all stations from January 1983 to January 1984 (Year I) by month mean ($\bar{x}$ SL) and range of their standard lengths in mm.**

		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan
	total N	423	16633	8667	1755	187	16	1						35
Leiostomus	$\bar{x}$ SL	15	16	18	20	30	51	12						13
xanthurus	range SL	12-19	13-47	12-25	12-40	8-80	43-76							10-15
	total N	133	1233	528	128	1193	4				9	224	54	388
Micropogonias	$\bar{x}$ SL	12	14	16	16	16	24				5	9	12	13
undulatus	range SL	9-20	9-46	11-33	10-32	7-59	20-27				4-7	7-14	8-18	10-23
	total N	49	1828	803	10	15						2	8	15
Lagodon	$\bar{x}$ SL	13	14	14	16	18						12	12	13
rhomboides	range SL	12-15	11-19	12-17	14-17	12-24						12-13	12-13	11-14
	total N		8	1		433	467	555	630	123	28	3	22	
Anchoa	$\bar{x}$ SL		27	27		31	18	15	17	20	25	19	35	
mitchilli	range SL		24-32			15-50	10-47	10-30	8-44	9-41	10-43	16-20	20-46	
	total N			3	2	18	531	224	334	429	38	7	5	
Gobiosoma	$\bar{x}$ SL			10	9	9	8	8	8	7	8	27	22	
bosci	range SL			8-12	8-11	8-10	3-14	4-17	3-28	3-25	3-16	22-36	22	
	total N					1482	43	20	3		1	2	4	
Elops	$\bar{x}$ SL					28	39	21	18		23	24	29	
saurus	range SL					19-40	21-52	16-27	17-20			24-25	25-33	
	total N		4	473	738	104		1						
Brevoortia	$\bar{x}$ SL		32	26	26	28		99						
tyrannus	range SL		25-43	22-31	21-29	24-35								
	total N	12	347	45	6	398	2	2					4	135
Mugil	$\bar{x}$ SL	22	22	20	21	28	36	70					23	30
cephalus	range SL	18-24	19-26	15-25	20-22	21-42	32-40	44-95					23-23	23-97
	total N			1	45	210	263	100	13	2				
Engraulidae	$\bar{x}$ SL			9	8	8	6	6	7	8				
	range SL				4-12	4-16	4-15	4-10	3-15	4-12				
	total N	7	30	141	1	242	142	22	1	3			2	34
Menidia	$\bar{x}$ SL	26	28	40	35	42	35	17	32	13			25	39
beryllina	range SL	24-28	19-33	36-43		10-70	10-50	7-47		7-16			25-25	29-57
	total N					103	102	65	144	31	1			
Cynoscion	$\bar{x}$ SL					7	13	13	5	6	5			
regalis	range SL					4-11	4-57	7-20	3-10	3-10				

Appendix Table 14.2 Continued

Gobionellus boleosoma	total N		8	18	12	5	8	34	100	54	37	21	70	
	$\bar{x}$ SL		11	10	9	10	9	9	7	7	8	11	11	
	range SL		10-12	9-11	9-11	10-10	8-10	7-22	5-8	6-22	7-10	7-21	7-30	
Bairdiella chrysoura	total N					18	177	52	19					
	$\bar{x}$ SL					7	10	29	8					
	range SL					4-14	3-24	18-50	4-12					
Microgobius thalassinus	total N					1	5	2	52	156	12			
	$\bar{x}$ SL					14	10	11	8	7	9			
	range SL						8-13	10-11	5-13	3-13	5-14			
Fundulus heteroclitus	total N	13	22	18		55	2	4			1	72	33	
	$\bar{x}$ SL	40	25	26		25	61	33			50	38	36	
	range SL	19-61	14-54	15-47		13-36	57-65	25-42				25-73	22-52	
Poecilia latipinna	total N	1		2	58	3	4				1	9	109	1
	$\bar{x}$ SL	30		30	29	22	33				27	29	24	13
	range SL			28-31	25-36	16-30	25-42					24-33	18-35	
Symphurus plagiusa	total N		3	10			3	43	27	67	18	2	2	6
	$\bar{x}$ SL		34	31			12	10	10	10	12	10	22	32
	range SL		25-46	28-34			11-13	8-15	7-32	7-82	9-35	9-11	21-23	27-36
Cyprinodon variegatus	total N	1	117	6		8	2	6	1				12	19
	$\bar{x}$ SL	34	32	28		29		19	21				34	31
	range SL		25-46	26-30		25-32		13-28					30-39	24-38
Gerreidae type 1	total N					2	1	1	18	15	70	44		
	$\bar{x}$ SL					11	11	16	10	11	11	11		
	range SL					10-12			8-11	9-14	9-16	8-12		
Gambusia affinis	total N	1	12	13		9	5	11	1		4	5	82	3
	$\bar{x}$ SL	18	17	18		16	16	17	6		15	15	22	13
	range SL		11-22	10-24		8-22	9-22	8-31			8-24	8-22	16-34	8-18
Lucania parva	total N		29	69	1	21		1	2	1	1	3	14	1
	$\bar{x}$ SL		25	24	26	26		8	12	8	8	23	24	24
	range SL		18-31	21-30		21-32			5-18			21-27	23-26	
Sciaenops ocellatus	total N			1					36	85	15			
	$\bar{x}$ SL			46					5	5	5			
	range SL								3-9	3-8	4-6			
Sciaenidae	total N					36	26	38	5	2				
	$\bar{x}$ SL					3	4	4	4	5				
	range SL					3-4	3-4	3-5	2-5	2-6				
Fundulus sp.	total N					102	8	1		1	1			
	$\bar{x}$ SL					6	5	7		2	5			
	range SL					1-10	2-7							

Appendix Table 14.2 Continued

Myrophis punctatus	total N	2	19	13	9	57	1	2	1	1				
	$\bar{x}$ SL	68	55	50	45	54	72	95	103	108				
	range SL	65-71	43-67	43-62	43-48	43-68		78-112						
Paralichthys lethostigma	total N		31	43	4	1								17
	$\bar{x}$ SL		12	12	21	26								11
	range SL		9-14	12-13	18-25									10-12
Paralichthys dentatus	total N	1	40	47	5	1								
	$\bar{x}$ SL	12	14	14	23	25								
	range SL		12-15	12-16	19-29									
Gobiidae	total N					7	14	15	33	17	3			
	$\bar{x}$ SL					11	5	4	5	5	5			
	range SL					8-13	3-9	3-6	3-8	2-7	3-7			
Atherinidae	total N					24	2	43	2					
	$\bar{x}$ SL					5	4	5	5					
	range SL					3-7	4-4	3-8	5-5					
Gobiosoma ginsburgi	total N								8	42	10			
	$\bar{x}$ SL								9	10	10			
	range SL								8-11	5-11	8-11			
Gobionellus hastatus	total N				1	36	2	2	2	1	5		3	
	$\bar{x}$ SL				13	12	8	7	8	7	11		20	
	range SL					8-16	7-8	7-7	7-9		9-12		10-40	
Menticirrhus sp.	total N					10	40	6	1					
	$\bar{x}$ SL					5	6		3					
	range SL					4-7	5-7							
Cynoscion nebulosus	total N						1	2	18	23				
	$\bar{x}$ SL						3	6	5	4				
	range SL							4-8	3-11	2-10				
Gobiosoma sp.	total N				22	4		4	7	2				
	$\bar{x}$ SL					4								
	range SL					3-6								
Pogonias cromis	total N					33	1							
	$\bar{x}$ SL					6	5							
	range SL					5-7								
Gobionellus shufeldti	total N			2		3		10	7	8		1	2	
	$\bar{x}$ SL			9		10		10	7	9		8	16	
	range SL			8-10		9-11		6-32	7-9	8-9			13-19	
Megalops atlanticus	total N						3	15	4	2	4			
	$\bar{x}$ SL						19	18	14	20	19			
	range SL						17-20	16-20	12-19	18-22	16-20			

Appendix Table 14.2 Continued

Gobionellus sp.	total N					2		4		
	$\bar{x}$ SL									
	range SL									
Dorosoma potenense	total N	5	1							
	$\bar{x}$ SL	45	61							
	range SL	42-50								
Elopidae	total N							5		
	$\bar{x}$ SL									
	range SL									
Paralichthys albigutta	total N	1	3							
	$\bar{x}$ SL	11	11							
	range SL		10-12							
Hypsoblennius sp.	total N					1	1		1	1
	$\bar{x}$ SL					4	5		9	9
	range SL									
Caranx hippos	total N					3				
	$\bar{x}$ SL					22				
	range SL					20-25				
Chaetodipterus faber	total N							1	1	1
	$\bar{x}$ SL							6	6	6
	range SL									
Cyprinodontidae	total N				3					
	$\bar{x}$ SL									
	range SL									
Eleotridae	total N				2	1				
	$\bar{x}$ SL									
	range SL									
Mugil curema	total N					3				
	$\bar{x}$ SL					30				
	range SL					27-32				
Syngnathus sp.	total N					1	2			
	$\bar{x}$ SL									
	range SL									
Blenniidae	total N									2
	$\bar{x}$ SL									2
	range SL									2-2
Etropus crossotus	total N			1					1	
	$\bar{x}$ SL			10					10	
	range SL									

Appendix Table 14.2 Continued

Fundulus confluentus	total N			1	1						
	$\bar{x}$ SL				26						
	range SL										
Lutjanus griseus	total N			1			1				
	$\bar{x}$ SL			17			13				
	range SL										
Orthopristis chrysopterus	total N		1	1							
	$\bar{x}$ SL		10	9							
	range SL										
Sparidae	total N		2								
	$\bar{x}$ SL										
	range SL										
Anguilliformes	total N								1		
	$\bar{x}$ SL										
	range SL										
Archosargus probatocephalus	total N										1
	$\bar{x}$ SL										90
	range SL										
Diplodus holbrooki	total N		1								
	$\bar{x}$ SL		10								
	range SL										
Ictalurus catus	total N		1								
	$\bar{x}$ SL		72								
	range SL										
Opsanus tau	total N				1						
	$\bar{x}$ SL				18						
	range SL										
Prionotus carolinus	total N		1								
	$\bar{x}$ SL		7								
	range SL										
Prionotus scitulus	total N		1								
	$\bar{x}$ SL		6								
	range SL										
Prionotus tribulus	total N					1					
	$\bar{x}$ SL					12					
	range SL										
Sphoeroides sp.	total N							1			
	$\bar{x}$ SL							11			
	range SL										

Appendix Table 14.2 Continued

Eleotris pisonis	total N	1	
	$\bar{x}$ SL	13	
	range SL		
Evorthodus lyricus	total N		1
	$\bar{x}$ SL		7
	range SL		

Appendix Table 14.3 Fishes collected by ichthyoplankton nets at all stations from February to December 1984 (Year II) by month with minimum and maximum sizes; SL = standard length mm.

		Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Mugil cephalus	total N	849	1297	1								
	range SL	25-31	20-37	20								
Leiostomus xanthurus	total N	561	900	251	11	1						
	range SL	12-20	12-23	12-29	20-43	36						
Brevoortia tyrannus	total N	1	359	19	2							
	range SL	30	17-28	21-30	28-30							
Anchoa mitchilli	total N	1			7		67	155	76	3		1
	range SL	30			15-22		9-30	9-38	14-34	16-25		31
Gobiosoma bosci	total N				192	6	11	33	76	2		
	range SL				7-10	6-9	5-10	8-25	5-23	7-8		
Cynoscion regalis	total N				245	1		3				
	range SL				4-19	23		5-9				
Micropogonias undulatus	total N	41	39	9					2	99	27	15
	range SL	12-20	12-22	11-25					6-9	6-11	7-25	9-17
Lagodon rhomboides	total N	75	109	2								
	range SL	11-17	10-15	13-14								
Bairdiella chrysoura	total N				96		1					
	range SL				4-9		10					
Elops saurus	total N			1	16	22	47	5		2		
	range SL			30	20-29	25-26	19-25	22-27		25-30		
Symphurus plagiusa	total N		1		1		28	22	10	2		
	range SL		21		24		9-9	8-17	7-31	11-43		
Menidia beryllina	total N	39	8				2		1			
	range SL	20-46	19-39				35-36		8			
Gobionellus boleosoma	total N		8	4	6		10		1	6	3	
	range SL		9-10	8-10	7-11		6-14		8	8-8	8-11	
Fundulus heteroclitus	total N	24	2									
	range SL	29-47	14-24									
Dormitator maculatus	total N			3	18	2	2					
	range SL			8-9	5-8	8-9	26-28					
Gerreidae Type I	total N						7	1	1	4	2	
	range SL						9-10	11	10	11-11	11-11	

Appendix Table 14.3 Continued

		Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Paralichthys lethostigma	total N	7	4	2								
	range SL	11-12	11-12	22-22								
Sciaenidae	total N				13							
	range SL											
Gobiidae	total N			1	10							
	range SL				7-7							
Lucania parva	total N	2	5	1								
	range SL	16-24	19-22	18								
Paralichthys dentatus	total N		7									1
	range SL		12-22									12
Microgobius thalassinus	total N						4	1	1	1		
	range SL						9-11	10	10	11		
Myrophis punctatus	total N	2	1	3								
	range SL	45-94	98	45-49								
Anguilla rostrata	total N		4	1								
	range SL		50-55	47								
Gobionellus hastatus	total N			4	1							
	range SL			12-16	12							
Engraulidae	total N				1		2	1		1		
	range SL				11		6-6	7		8		
Gobionellus shufeldti	total N		1	1			3					
	range SL		9	9								
Cyprinodon variegatus	total N	1			3							
	range SL	22			15-27							
Sciaenops ocellatus	total N							1	2	1		
	range SL							5	5-5	7		
Evorthodus lyricus	total N			1	2				1			
	range SL			9	8-8				8			
Citharichthys spilopterus	total N			3								
	range SL			10-10								
Fundulus sp.	total N				2			1				
	range SL				6-6			6				

Appendix Table 14.3 Continued

		Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Megalops atlanticus	total N					2	1					
	range SL					19-21	14					
Syngnathus louisianae	total N						1		1			
	range SL						56		57			
Cynoscion nebulosus	total N				2							
	range SL				5-6							
Trinectes maculatus	total N		1		1							
	range SL		24		34							
Gambusia affinis	total N				1							
	range SL				12							
Gobionellus sp.	total N				1							
	range SL											
Lepomis gulosus	total N				1							
	range SL				43							
Atherinidae	total N								1			
	range SL											
Microgobius sp.	total N						1					
	range SL											
Mycteroperca microlepis	total N				1							
	range SL				15							
Prionotus sp.	total N				1							
	ramge SL											
Symphurus civitatum	total N									1		
	range SL									10		
Syngnathus fuscus	total N				1							
	range SL				35							

Appendix Table 14.4A Percent frequency of occurrence (F), percent number (N), percent volume (V), and index of relative importance (IRI) of dietary items in the ladyfisb *Elops saurus*, by habitat.

Taxon food item	Impoundment F	N	V	IRI	Creek F	N	V	IRI
Crustacea								
Decapoda	79	44	52	7618	100	100	100	2000
Palaemonetes pugio	79	43	45	7014	60	88	52	8452
Penaeus duorarum	5	1	7	39	40	12	47	2365
Amphipoda								
Gammarus spp.	2	2	+	4	-	-	-	-
Pisces	45	20	28	2232	-	-	-	-
Fundulus heteroclitus	10	3	5	76				
Gambusia affinis	13	11	5	204				
Lucania parva	3	1	1	4				
Menidia beryllina	8	2	4	47				
Poecilla latipinna	8	2	9	89				
unidentified	5	1	6	31				
Annelida								
Polychaeta								
Nereis succinea	4	31	20	210	-	-	-	-
Insecta								
Hemiptera	10	2	+	24	-	-	-	-
Mollusca								
Gastropoda								
Hydrobiidae	2	1	+	1	-	-	-	-
Number of stomachs examined		56				22		
Examined stomachs with food		48				15		

Appendix Table 14.4B Percent frequency of occurrence (F), percent number (N), percent volume (V), and index of relative importance (IRI) of dietary items in Atlantic menhaden, *Brevoortia tyrannus*, from all stations.

Taxon food items	F	N	V	IRI
Algae				
Chrysophyta				
Bacillariophycea	100	33	6	3925
Chaetocerus sp.				
Bacillaria sp.				
Cyanophyta	100	33	31	6425
Chroococeacea				
Oscillatoriaceae				
Agmenellum sp.				
Detritus	100	33	62	9550

Number of stomachs examined	67
Examined stomachs with food	67

Appendix Table 14.4C **Percent frequency of occurrence (F), percent number (N), percent volume (V), and index of relative importance (IRI) of dietary items in the bay anchovy, *Anchoa mitchilli*, by habitat.**

Taxon food item	Impoundment F	Impoundment N	Impoundment V	Impoundment IRI	Creek F	Creek N	Creek V	Creek IRI
Crustacea								
Copepoda	100.00	52.12	46.71	9882.66	100.00	90.00	50.00	14,000.00
Calanoida								
Decapoda	71.43	47.81	51.32	7137.00	25.00	1.25	10.00	281.25
Palaemonetes spp.	4.76	0.04	0.66	3.33	-	-	-	-
Palaemonetes larvae	66.67	3.80	10.53	955.15	25.00	1.25	10.00	281.25
Grapsidae zoea	61.90	43.97	40.13	5205.79	-	-	-	-
Ostracoda								
Isopoda	-	-	-	-	50.00	6.25	20.00	1312.50
Cassidinidea lumifrons	-	-	-	-	25.00	1.25	10.00	281.25
Mollusca								
Gastropoda	-	-	-	-	25.00	1.25	10.00	281.25
Detritus	14.29	0.08	1.97	29.29				

	Impoundment	Creek
Number of stomachs examined	22	12
Examined stomachs with food	21	12

Appendix Table 14.4D Percent frequency of occurrence (F), percent number (N), percent volume (V), and index of relative importance (IRI) of food items in the sheepshead minnow, *Cyprinodon variegatus*, for all stations.

Taxon food items	F	N	V	IRI
Algae				
Chrysophyta				
Bacillaria sp.	100	93	98	19,100
Pleurosigma sp.				
Nitzschia sp.				
Crustacea				
Copepoda				
Calanoida	3	7	2	29

Number of stomachs examined	63
Examined stomachs with food	63

Appendix Table 14.4E Percent frequency of occurrence (F), percent number (N), percent volume (V), and index of relative importance (IRI) of dietary items in the mummichog, *Fundulus heteroclitus*, by habitat.

Taxon food item	Impoundment F	Impoundment N	Impoundment V	Impoundment IRI	Creek F	Creek N	Creek V	Creek IRI
Crustacea								
Copepoda	2	0	0	1	9	14	0	125
Calanoida								
Decapoda	31	3	16	586	55	19	47	3615
Palaemonetes pugio	28	3	16	523	55	19	47	3615
Palaemonetes larvae	3	0	0	1	–	–	–	–
Amphipoda								
Gammarus sp.	–	–	–	–	18	8	4	228
Mysidacea	–	–	–	–	9	5	3	74
Protozoa								
Foraminifera	17	20	0	343	18	19	1	354
Nematoda	3	8	0	22	9	3	0	27
Annelida								
Polychaeta	11	2	7	99	18	8	10	335
Capitella capitata	6	1	0	7	9	5	1	54
Nereis succinea	6	1	7	42	9	3	10	113
Mollusca								
Gastropoda								
Hydrobiidae	3	0	0	1	–	–	–	–
Insecta	42	61	12	3036	18	19	3	395
Hemiptera	31	15	5	600	9	11	2	116
Chironomid larvae	33	46	7	1774	9	8	1	81
Pisces								
Mugil cephalus	–	–	–	–	9	3	31	303
Algae								
Chlorophyta	3	0	0	1	–	–	–	–
Detritus	50	5	64	3470	9	3	1	230
Number of stomachs examined		64				34		
Examined stomachs with food		55				33		

Appendix Table 14.4F Percent frequency of occurrence (F), percent number (N), percent volume (V), and index of relative importance (IRI) of dietary items in rainwater killifish, *Lucania parva*, by season.

Taxon	FALL 1983				WINTER 1984				SPRING 1984			
food item	F	N	V	IRI	F	N	V	IRI	F	N	V	IRI
Crustacea												
Ostracoda	100	78	50	12778	-	-	-	-	50	31	13	2164
Copepoda												
Calanoida	-	-	-	-	50	67	33	5000	-	-	-	-
Decapoda												
Palaemonetes eggs	-	-	-	-	-	-	-	-	13	8	13	252
Protozoa												
Foraminifera	-	-	-	-	-	-	-	-	25	8	6	349
Insecta												
Chironomid larvae	-	-	-	-	-	-	-	-	75	54	69	9195
Algae												
Chlorophyta	67	14	35	3292	-	-	-	-	-	-	-	-
Cyanophyta	-	-	-	-	50	33	67	5000	-	-	-	-
Detritus	44	8	15	1015	-	-	-	-	-	-	-	-
Number of stomachs examined			18				18				16	
Examined stomachs with food			9				10				16	

Appendix Table 14.4G

Percent frequency of occurrence (F), percent number (N), percent volume (V), and index of relative importance (IRI) of dietary items in mosquito fish, *Gambusia affinis*, by season.

Taxon	FALL 1983				WINTER 1984				SPRING 1984			
food item	F	N	V	IRI	F	N	V	IRI	F	N	V	IRI
Crustacea												
Copepoda												
Harpactocoida	17	11	11	370	-	-	-	-	-	-	-	-
Ostracoda	17	11	11	370	-	-	-	-	-	-	-	-
Decapoda												
Palaemonetes sp.	-	-	-	-	-	-	-	-	22	9	36	1001
Insecta	17	22	22	741	50	67	60	6334	78	91	64	12051
Hemiptera	17	22	22	741	25	33	35	1708	28	21	19	1101
Calicidae	-	-	-	-	25	33	25	1458	-	-	-	-
Chironomid larvae	-	-	-	-	-	-	-	-	78	71	45	8969
Algae												
Cyanophyta	83	50	44	7870	50	33	40	3667	-	-	-	-
Number of stomachs examined			19			16					18	
Examined stomachs with food			12			2					18	

Appendix Table 14.4H Percent frequency of occurrence (F), percent number (N), percent volume (V), and index of relative importance (IRI) of dietary items in the sailfin molly, *Poecilia latipinna*, from all stations.

Taxon food items	F	N	V	IRI
Algae				
Chrysophyta				
Bacillariophycea	100	50	50	10,000
Bacillaria sp.				
Thalassiothrix sp.				
Pleurosigma sp.				
Chaetoceros sp.				
Detritus	100	50	50	10,000

Number of stomachs examined	57
Examined stomachs with food	57

Appendix Table 14.4I Percent frequency of occurrence (F), percent number (N), percent volume (V), and index of relative importance (IRI) of dietary items in the inland silverside, *Menidia beryllina*, by habitat.

Taxon food item	Impoundment F	Impoundment N	Impoundment V	Impoundment IRI	Creek F	Creek N	Creek V	Creek IRI
Crustacea								
Copepoda	92	92	46	12725	60	96	56	9129
Calanoida								
Cyclopoida								
Decapoda	41	7	9	675	–	–	–	–
Palaemonetes larvae	31	2	4	174	–	–	–	–
Grapsidae zoea	26	5	5	277	–	–	–	–
Isopoda								
Cassidinidea lumifrons	5	0	0	2	–	–	–	–
Mysidacea	13	0	3	41	–	–	–	–
Amphipoda								
Corophium lacustre	–	–	–	–	13	1	17	245
Cirripedia	–	–	–	–	7	0	3	24
Protozoa								
Foraminifera	3	0	0	1	–	–	–	–
Mollusca								
Gastropoda								
Hydrobiidae	3	0	0	1	–	–	–	–
Insecta	21	0	40	819	20	2	19	407
Hemiptera	18	0	39	702	20	2	19	407
Chironomid larvae	3	0	1	2	–	–	–	–
Algae								
Chlorophyta	5	0	1	4	7	0	2	13
Cyanophyta	–	–	–	–	7	0	2	12
Detritus	8	0	1	10	7	0	2	12

	Impoundment	Creek
Number of stomachs examined	64	34
Examined stomachs with food	56	30

Appendix Table 14.4J Percent frequency of occurrence (F), percent number (N), percent volume (V), and index of relative importance (IRI) of dietary items in the silver perch, *Bairdiella chrysoura*, by habitat.

Taxon food item	Impoundment F	Impoundment N	Impoundment V	Impoundment IRI	Creek F	Creek N	Creek V	Creek IRI
Crustacea								
Copepoda	39	56	3	2333	-	-	-	-
Calanoida								
Cyclopoida								
Decapoda	64	41	59	6438	50	45	14	2956
Palaemonetes pugio	43	1	54	2341	50	9	13	1096
Palaemonetes larvae	43	40	5	1993	-	-	-	-
Sesarma sp.	4	0	0	1	-	-	-	-
Sesarma zoea	4	0	0	1	50	36	1	1861
Mysidacea	11	3	2	45	-	-	-	-
Amphipoda								
Gammarus palustris	-	-	-	-	50	45	1	2315
Insecta								
Hempitera	11	0	0	5	-	-	-	-
Pisces	7	0	35	250	50	9	85	4728
Fundulus heteroclitus	7	0	35	250	-	-	-	-
unidentified	-	-	-	-	50	9	85	4728
Annelida								
Polychaeta	7	0	0	2	-	-	-	-
Detritus	21	0	0	14	-	-	-	-

	Impoundment	Creek
Number of stomachs examined	37	14
Examined stomachs with food	28	2

Appendix Table 14.4K Percent frequency of occurrence (F), percent number (N), percent volume (V), and index of relative importance (IRI) of dietary items in the weakfish, *Cynoscion regalis*, by habitat.

Taxon food item	Impoundment F	N	V	IRI	Creek F	N	V	IRI
Crustacea								
Decapoda	82	91	65	12769	94	94	67	15169
Palaemonetes spp.	68	4	57	4148	94	94	67	15169
Palaemonetes larvae	54	51	7	3132	-	-	-	-
Grapsidae zoea	32	36	0	1153	-	-	-	-
Copepoda	25	6	0	146	-	-	-	-
Calanoida								
Isopoda								
Cassidinidea lumifrons	7	1	1	14	-	-	-	-
Mysidacea	11	0	0	4	-	-	-	-
Pisces	14	1	34	497	11	6	33	438
Menidia beryllina	7	0	14	105	-	-	-	-
Unidentified	7	0	20	144	11	6	33	438
Insecta								
Hemiptera	21	1	0	35	-	-	-	-
Number of stomachs examined		28				23		
Examined stomachsc with food		28				18		

Appendix Table 14.4L Percent frequency of occurrence (F), percent number (N), percent volume (V), and index of relative importance (IRI) of dietary items in the spot, *Leiostomus xanthurus*, by habitat.

Taxon food item	Impoundment F	Impoundment N	Impoundment V	Impoundment IRI	Creek F	Creek N	Creek V	Creek IRI
Protozoa								
Foraminifera	43	89	39	5455	-	-	-	-
Crustacea								
Copepoda	74	8	6	1064	42	46	3	2051
Calanoida								
Cyclopoida								
Harpacticoida								
Decapoda	10	0	1	9	19	1	19	384
Palaemonetes spp.	10	0	1	10	13	0	13	173
Grapsidae	-	-	-	-	6	0	6	41
Ostracoda	7	0	0	2	16	8	1	137
Amphipoda	2	<0	0	0	42	6	21	1145
Gammarus palustris	2	<0	0	0	19	3	10	244
Corophium lacustre	-	-	-	-	23	3	11	332
Isopoda								
Cassidinidea lumifrons	-	-	-	-	3	0	1	4
Cirripedia								
Cypris larva	2	0	0	0	23	20	4	548
Cumacea	-	-	-	-	23	2	1	61
Tanaidacea	-	-	-	-	16	1	1	34
Annelida								
Polychaeta	17	0	1	25	52	2	45	2409
Capitella capitata	15	0	1	22	32	1	17	589
Nereis succinea	2	0	1	0	19	1	28	550
Nematoda	29	0	1	32	195	11	1	231
Mollusca								
Gastropoda								
Hydrobiidae	2	0	1	2	-	-	-	-
Pelecypoda (siphons)	-	-	-	-	16	2	1	50
Insecta	48	2	50	2476	13	1	1	18
Hemiptera	15	1	22	332	-	-	-	-
Chironomid larvae	33	1	28	968	13	1	1	18
Pisces - unidentified	-	-	-	-	3	0	0	1
Detritus	10	0	1	9	19	0	1	31
Number of stomachs examined		63				33		
Examined stomachs with food		62				31		

Appendix Table 14.4M Percent frequency of occurrence (F), percent number (N), percent volume (V), and index of relative importance (IRI) of dietary items in the Atlantic croaker, *Micropogonias undulatus*, by habitat.

Taxon food item	Impoundment F	Impoundment N	Impoundment V	Impoundment IRI	Creek F	Creek N	Creek V	Creek IRI
Protozoa								
Foraminifera	6	1	0	5	3	1	0	4
Crustacea								
Copepoda	36	18	1	668	-	-	-	-
Calanoida								
Cyclopoida								
Harpactocoida								
Decapoda	52	28	46	3802	26	10	61	1816
Palaemonetes pugio	18	3	45	835	-	-	-	-
Palaemonetes spp.	-	-	-	-	26	10	61	1816
Palaemonetes larvae	47	25	1	1231	-	-	-	-
Grapsidae zoea	3	0	0	1	-	-	-	-
Mysidacea	6	0	0	4	26	13	14	703
Amphipoda					36	16	2	571
Corophium lacustre					29	12	1	395
Gammarus palustris					3	4	0	13
Cumacea					3	1	0	4
Annelida								
Polychaeta	48	24	47	3447	29	21	8	827
Capitella capitata	39	18	16	1303	29	18	1	569
Nereis succinea	10	7	31	363	6	2	6	57
Mollusca								
Pelecypoda (siphons)	-	-	-	-	23	21	1	490
Pisces	6	1	0	10	13	5	14	244
Gambusia affinis	6	1	0	10	-	-	-	-
Poecilia latipinna	-	-	-	-	13	5	14	244
Insecta	39	26	6	1281	6	4	0	25
Hemiptera	18	10	2	205	-	-	-	-
Chironomid larvae	35	17	4	736	6	4	0	25
Detritus	12	1	0	14	13	6	0	84

	Impoundment	Creek
Number of stomachs examined	63	36
Examined stomachsc with food	62	31

Appendix Table 14.4N Percent frequency of occurrence (F), percent number (N), percent volume (V), and index of relative importance (IRI) of dietary items in striped mullet, *Mugil cephalus*, for all stations.

Taxon food items	F	N	V	IRI
Protozoa				
Foraminifera	4	1	1	9
Algae				
Chrysophyta				
Bacillariophycea	100	34	38	7133
Bacillaria sp.				
Nitzschia sp.				
Thalassiathrix sp.				
Pleurosigma sp.				
Chaetoceros sp.				
Cyanophyta				
Chroococeacea	94	32	22	5076
Detritus	100	34	38	7133

Number of stomachs examined	86
Examined stomachs with food	86

Appendix Table 14.40 Percent frequency of occurrence (F), percent number (N), percent volume (V), and index of relative importance (IRI) of dietary items in the southern flounder, *Paralichthys lethostigma*, by habitat.

Taxon / food item	Impoundment F	Impoundment N	Impoundment V	Impoundment IRI	Creek F	Creek N	Creek V	Creek IRI
Crustacea								
Decapod	58	76	48	7268	94	91	85	16504
Palaemonetes pugio	58	76	48	7268	78	59	55	88941
Palaemonetes vulgaris	-	-	-	-	11	3	6	95
Palaemonetes spp.	-	-	-	-	39	29	24	2066
Pisces	67	24	52	5030	25	9	15	599
Cyprinodon variegatus	8	3	9	96	-	-	-	-
Fundulus heteroclitus	-	-	-	-	13	5	11	191
Leiostomus xanthurus	17	6	11	286	-	-	-	-
unidentified	42	15	32	1949	19	5	4	163

	Impoundment	Creek
Number of stomachs examined	36	21
Examined stomachs with food	24	16

Appendix Table 14.5 Species of fishes collected by gear type and sampling site. + = present; blank = absent.

FAMILY	SPECIES	IMPOUNDMENT			CREEK			
		Seines	Cast net	Trawls	Cast net	Sm Gill	Lg Gill	Rotenone
Lepisosteidae	Lepisosteus osseus						+	
Elopidae	Elops saurus	+ +		+	+	+	+	
	Megalops atlanticus	+						
Anguillidae	Anguilla rostrata	+ +	+				+	
Ophichthidae	Myrophis punctatus							+
Clupeidae	Brevoortia tyrannus	+ +	+	+	+		+	
	Dorosoma cepedianum				+	+	+	+
	Dorosoma petenense	+		+	+	+		+
	Opisthonema oglinum	+ +	+	+	+			
Engraulidae	Anchoa hepsetus	+	+					
	Anchoa mitchilli	+	+	+	+		+	
Ictaluridae	Ictalurus catus			+				+
Ariidae	Ariopsis felis			+			+	
Batrachoididae	Opsanus tau	+		+				
Gubiesocidae	Gobiesox strumosus							+
Ophidiidae	Ophidion marginatum							+
Belonidae	Strongylura marina					+		
Cyprinodontidae	Cyprinodon variegatus	+	+	+	+			+
	Fundulus Confluentus	+						
	Fundulus heteroclitus	+	+	+	+	+		+
	Fundulus luciae	+						+
	Fundulus majalis			+				+
	Lucania parva	+	+		+			+
Poeciliidae	Gambusia affinis	+			+			+
	Poecilia latipinna	+	+		+			+
Atherinidae	Menidia beryllina	+	+	+	+			+
	Menidia menidia	+	+		+			+
Syngnathidae	Syngnathus fuscus							+
	Syngnathus louisianae	+						+
	Syngnathus scovelli	+		+		+		+
Centropomidae	Centropomus undecimalis	+						
Percichthyidae	Morone americana	+		+	+	+		+
	Morone saxatilis	+			+			
Centrarchidae	Lepomis gulosus	+						
	Lepomis macrochirus	+			+			+
Pomatomidae	Pomatomus saltatrix				+	+	+	
Caramgidae	Caranx hippos				+	+		+
Lutjamidae	Lutjamus griseus			+				+
Gerreidae	Diapterus auratus	+			+			
	Eucinostomus argenteus							
	Eucinostomus sp.	+	+		+			+
Sparidae	Archosargus probatocephalus	+						+
	Lagodon rhomboides	+	+	+	+	+		+

Appendix Table 14.5 Continued

FAMILY	SPECIES	IMPOUNDMENT Seines	IMPOUNDMENT Cast net	Trawls	CREEK Cast net	CREEK Sm Gill	CREEK Lg Gill	CREEK Rotenone
Sciaenidae	Baidiella chrysoura	+	+	+	+	+		+
	Cynoscion nebulosus	+			+			+
	Cynoscion regalis	+	+	+	+	+		
	Leiostomus xanthurus	+	+	+	+	+		+
	Micropogonias undulatus	+	+	+	+	+		+
	Pogonias cromis	+	+					+
	Sciaenops ocellatus	+		+	+		+	
Ephippidae	Chaetodipterus faber			+				+
Mugilidae	Mugil cephalus	+	+	+	+	+	+	+
	Mugil curema	+	+	+	+	+		+
Sphyraenidae	Sphyraena guachancho							+
Blenniidae	Chasmodes bosquianus							+
	Hypleurochilus geminatus							+
	Hypsoblennius hentzi							+
	Hypsoblennius ionthus							+
Eleotridae	Dormitator maculatus	+	+			+		+
Gabiidae	Evorthodus lyricus	+						+
	Gobionellus boleosoma	+		+				+
	Gobionellus hastatus	+	+					+
	Gobionellus shufeldti	+						+
	Gobiosoma bosci	+	+	+				+
	Gobiosoma ginsburgi	+						+
	Microgobius thalassinus	+						+
Triglidae	Prionatus tribulus	+						+
Bethidae	Citharichthys macrops		+	+	+			
	Citharichthys spilopterus	+		+	+			+
	Etropus crossotus	+		+	+			+
	Paralichthys dentatus				+			+
	Paralichthys lethostigma	+		+	+		+	+
Soleidae	Trinectes maculatus	+	+	+				
Cynoglossidae	Symphurus plagiusa	+		+	+			+
Balistidae	Monacanthus hispidus			+				

SECTION VIII

WILDLIFE COMMUNITY

Appendix Table 15.1

Overall bird use-days by species and study site, 1983-84.

BIRD GROUP	STUDY SITE 1	2	3	4	5	TI	OM	CF	Totals
SURFACE									
DIVERS	(38)[1]	(66)	(28)	(47)	(33)	(2)	(38)	(87)	
PBG[3] (400)[2]	365	680	244	558	341	6	115	1379	3688
DCC (186)	250	474	51	52	248	8	448	1155	2686
ANHI (205)	26	102	50	84	94	6	48	1197	1607
Totals (791)	641	1256	345	694	683	20	611	3731	7981
use-days/ha	82	263	98	169	109	2	45	271	1039
AERIAL									
DIVERS	(33)	(51)	(48)	(48)	(47)	(12)	(61)	(86)	
RBG (203)	24	87	86	80	200	10	186	1028	1701
LGUL (226)	72	142	294	146	244	5	224	536	1663
CAST (146)	44	42	88	50	98	0	68	898	1288
GULL[4] (109)	38	44	30	182	115	18	142	604	1173
KING (331)	137	134	103	213	44	38	166	266	1101
ROYL (82)	20	14	102	52	54	0	22	301	565
HERG (40)	4	10	8	12	54	0	4	150	242
FORS (50)	2	38	28	10	25	18	46	26	193
SKIM (30)	8	8	18	10	12	3	64	62	185
BONE (12)	0	22	0	18	3	5	5	37	90
LTRN (23)	0	10	2	0	4	0	8	64	88
COMT (8)	5	0	5	0	8	0	0	16	34
BPEL (11)	0	25	0	8	0	0	7	4	44
GBT (2)	0	0	0	0	0	0	3	3	6
Totals (1253)	354	576	764	781	861	97	945	3995	8373
use-days/ha	45	121	217	190	137	12	70	290	1082

Appendix Table 15.1 Continued

BIRD GROUP		1	2	3	4	5	TI	OM	CF	
WADERS		(78)	(89)	(67)	(78)	(81)	(49)	(94)	(91)	
WIBS	(232)	188	2168	331	340	310	418	2019	1886	7660
GEGT	(656)	315	911	1214	512	493	138	1207	2494	7284
GBH	(689)	667	1332	489	372	629	154	607	2537	6787
LBH	(347)	251	1129	474	517	241	19	77	2728	5436
SNOW	(391)	231	911	271	314	243	200	1476	1672	5318
TRIC	(418)	161	488	314	464	242	88	302	846	2905
BCNH	(131)	40	50	96	56	46	19	84	856	1247
GIBS	(27)	0	100	0	88	24	34	4	826	1076
LBIT	(186)	106	142	78	56	216	56	62	266	982
WSTK	(22)	10	11	2	0	32	0	55	88	198
GREN	(45)	5	20	34	3	24	17	45	36	184
YCNH	(14)	0	0	0	0	38	0	18	17	73
CATL	(4)	0	2	4	0	0	0	0	4	10
SBIL	(1)	0	0	4	0	0	0	0	0	4
ABIT	(1)	2	0	0	0	0	0	0	0	2
Totals	(3164)	1976	7264	3311	2722	2538	1143	5956	14256	39166
use-days/ha		282	1526	473	389	362	163	439	1036	4760
RAPTORS		(17)	(5)	(6)	(8)	(14)	(16)	(24)	(44)	
OSPY	(143)	31	9	16	14	20	8	66	287	451
NOHA	(103)	54	3	20	28	34	99	107	16	361
BLDE	(33)	4	8	10	23	19	0	5	78	147
RTH	(18)	30	8	0	1	4	22	0	13	78
KEST	(11)	5	7	0	0	4	3	0	8	27
PFAL	(1)	0	0	0	0	0	0	0	4	4
Totals	(309)	124	35	46	66	81	132	178	406	1068
use-days/ha		16	7	13	16	13	17	13	30	125

Appendix Table 15.1 Continued

BIRD Group		1	2	3	4	5	TI	OM	CF	
STOREBIRDS		(39)	(45)	(51)	(43)	(40)	(17)	(24)	(36)	
PEEP[5]	(185)	557	488	1529	2295	15761	374	2409	45531	68944
DOWI[6]	(182)	892	1222	3988	3663	7814	249	468	40820	59116
DUNL	(125)	268	741	2362	3096	6695	0	233	35812	49207
YLG?	(170)	618	566	496	1333	6045	62	82	21437	30639
SPPL	(70)	0	7	360	1153	2044	57	160	8206	11987
YLG?	(239)	423	800	389	549	800	58	204	5148	8371
LG[7]	(95)	490	418	993	630	614	55	74	3818	7092
BBPL	(106)	0	56	82	225	400	0	61	966	1790
BNST	(45)	6	35	24	52	82	0	6	834	1039
AVOT	(10)	0	0	0	0	24	0	0	772	796
WLET	(40)	0	0	4	233	350	0	57	27	671
SPOT	(34)	76	36	65	58	16	0	4	211	466
KILD	(37)	0	72	58	172	108	0	0	44	454
SNPE	(39)	129	140	34	50	0	18	0	32	403
SOLS	(9)	5	0	0	0	16	0	2	174	197
MGOD	(3)	0	0	0	0	46	0	0	0	46
STLT	(6)	0	0	2	12	0	0	0	32	46
WPLV	(1)	0	0	0	0	0	0	2	0	2
Totals	(1381)	3464	4581	10386	13521	40815	873	3762	163864	241266
use-days/ha		445	945	2946	3295	6519	111	277	11909	26447
RAILS[8]		(36)	(14)	(16)	(24)	(18)	(2)	(2)	(35)	
GALL	(228)	393	154	138	188	217	0	6	1033	2183
SORA	(22)	111	6	4	6	58	0	0	0	185
VIRG	(2)	0	0	0	0	24	0	0	0	24
YELO	(1)	5	0	0	0	0	0	0	0	5
Totals	(253)	509	160	142	194	353	0	6	1033	2397
use-days/ha		65	34	40	47	31	0	0.4	75	292

Appendix Table 15.1 Continued

BIRD GROUP		1	2	3	4	5	TI	OM	CF	
WATERFOWL		(39)	(52)	(28)	(34)	(35)	(4)	(21)	(54)	
GWT	(234)	1956	5963	2490	6980	8072	406	62	39860	65789
BWT	(151)	1548	1035	54	137	450	0	28	20462	23714
WIDG	(97)	110	560	18	1920	0	35	8	8512	11163
HMER	(172)	49	1666	938	850	361	1	569	1172	5606
COOT	(94)	96	41	0	5	19	0	24	4766	4951
STOV	(49)	8	10	0	204	258	0	2	1218	1700
MOTD	(88)	105	194	46	76	92	23	16	713	1265
GADW	(49)	0	0	0	10	70	0	0	890	970
PINT	(41)	0	9	0	0	0	0	0	902	911
BLAK	(21)	0	42	0	0	42	0	15	102	201
MALD	(17)	12	8	0	2	0	0	5	58	85
CGE	(6)	0	0	0	0	26	0	0	9	35
WOOD	(9)	0	12	0	2	0	0	0	13	27
BUFF	(4)	14	0	0	0	7	0	0	0	21
RBME	(3)	0	0	4	3	0	0	0	4	11
LSCP	(2)	0	0	0	0	0	0	0	4	4
CANB	(1)	0	0	0	0	0	0	0	3	3
RND	(2)	0	0	0	0	0	0	0	2	2
Totals	(1040)	3898	9540	3550	10189	9397	465	729	78690	116458
use-days/ha		501	2001	1007	2483	1501	59	54	5719	13325

[1]Frequency of occurance by site (number of sightings/site sample).

[2]Number of times species was observed during the study.

[3]See Table 15.1 for species code.

[4]Immature and unidentified gulls (Laurs sp.).

[5]Includes least sandpiper, semipalmated sandpiper, western sandpiper and white-rumped sandpiper.

[6]Includes short-and long-billed dowitchers.

[7]Unidentifed yellowlegs (Tringa sp.)

[8]See Fig. 15.7 for clapper tails. American coots are included with waterfowl group.

[9]TI=Tidal Impoundment, OM=Open Marsh, CF=Cooperfield.

Appendix Table 15.2 Total number of birds counted by season, samples and site area, 1983-84.

Study[2] Site	FALL[1] Total birds	FALL per N	FALL perN/ha	WINTER Total birds	WINTER per N	WINTER perN/ha	SPRING Total birds	SPRING per N	SPRING perN/ha	SUMMER Total birds	SUMMER per N	SUMMER perN/ha
No. 1	522	23.7	3.0	1097	28.9	3.7	515	14.3	1.8	214	5.1	0.7
No. 2	1244	24.7	11.4	3540	90.8	19.1	968	26.2	5.5	311	8.0	1.7
No. 3	543	24.7	7.0	2780	73.2	20.7	1147	28.0	7.9	796	19.0	5.4
No. 4	399	20.0	4.9	4905	129.1	31.5	2317	56.5	13.8	394	7.7	1.9
No. 5	283	13.5	2.2	4580	134.7	21.5	7554	229.0	36.6	426	9.1	1.4
TI	195	3.6	0.5	218	2.9	0.4	283	4.4	0.6	241	2.7	0.3
OM	723	13.4	1.0	1427	19.3	1.4	1501	23.5	1.7	1801	20.5	1.5
CF	3823	70.5	5.1	27008	365.0	26.5	67494	1054.6	76.6	2177	24.7	1.8
TOTALS												
Birds		7732			45555			81779			6360	
Birds/N		28.7			111.4			215.2			13.1	

[1] Represents one Field season, 1983.
[2] TI= Tidal Impoundment, OM= Open Marsh, CF= Cooperfield