HACKENSACK MEADOWALNDS DEVELOPMENT COMMISSION
DIVISION OF ENVIRONMENTAL OPERATIONS
ONE DEKORTE PARK PLAZA
LYNDHURST, NJ 07071

INVENTORY OF FISHERIES RESOURCES OF THE HACKENSACK RIVER

FEBRUARY 1987 - DECEMBER 1988

Sediment Anaysis: Arthur Goeller
Invertebrates Identified by: A. Brett Bragin
Report by: Mark L. Kraus, Ph.D. and A. Brett Bragin
Administered by: Anne Galli

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May 18, 1989

SUPPORTED BY THE HACKENSACK MEADOWLANDS DEVELOPMENT COMMISSION THROUGH SPECIAL DISTRICT PROJECT FUNDS

Hackensack Meadowlands Development Commission,

Division of Environmental Operations,

One DeKorte Park Plaza,

Lyndhurst, New Jersey 07071

Inventory of Fisheries Resources of the Hackensack River within the jurisdictional Boundary of the Hackensack Meadowlands Development Commission from Kearny, Hudson County, to Ridgefield, Bergen County, New Jersey.

Date Submitted: 5/18/89

Period of Study: February 1987 - December 1988

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Introduction

The Hackensack River Basin in Northeastern New Jersey contains some of the last major expanses of open space in the Newark/New York metropolitan area. The lower River basin still contains approximately 8,000 acres of wetlands and major waterways which are crisscrossed by major transportation corridors.

Originally the area was considered only for its value as a repository for waste materials, and as a location for heavy industrial uses. This jaundiced view left the region with over 1,600 acres of landfill, three superfund sites, numerous hazardous waste site, and a myriad of dirty industrial sites and sub-standard warehouse facilities.

In 1964 the U.S. Congress authorized a planning grant to study the region. The Army Corps of Engineers was directed to study the basin for flood control and reclamation. One of the final recommendations of this study was that a state agency should be created to coordinate activities in the lower Hackensack River Basin.

In 1968 the New Jersey State Legislature enacted a law creating just such an agency. The Hackensack Meadowlands Development Commission (HMDC) was given broad regulatory, administrative, and financial powers which directly affected 14 municipalities in 2 counties. The HMDC was mandated, among other things, to:

1) Support orderly economic development in the District.

2) Plan for the disposal of all solid waste from communities then dumping in the District.

3) Protect the delicate balance of nature.

By 1970, under the auspices of the Hackensack Meadowlands Reclamation Act (N.J.S.A. 13:17-1 et seq.), the HMDC had completed a comprehensive study of the District and prepared draft zoning regulations. These zoning regulation were finalized in 1972 (N.J.A.C. 19:4-1 et seq.).

Since the inception of the HMDC, the view of the District has changed. It is no longer considered a dumping ground and heavy industrial region. Instead, the region is considered desireable for offices, housing, and clean industry. The Hackensack River is no longer eroneously, and derogatorily described as "dead". Instead, it is more properly viewed as a living and viable River.

With increasing development pressures came additional pressures on the River and its tributaries. The HMDC realized that these pressures could affect fisheries resources, but there was a significant lack of data pertaining to these issues. With this in mind, the HMDC initiated a two year survey of the lower Hackensack River in order to ascertain the fisheries values of the River, and to help guide intelligent decisions on development applications.

Material and Methods

A total of twenty-three (23) sampling sites were established on the Hackensack River and its major tributaries. These sites were chosen under the guidance of the New Jersey Department of Environmental Protection Bureau of Marine Fisheries. Sites were selected based on their distribution along the River, and their suitability for deployment of a given gear type.

Four different types of fishing gear were used. These included:

1) A 16 foot otter trawl (3/4 inch square body mesh, 5/8 inch square cod-end mesh, 1/4 inch mesh cod-end liner) was towed for 3 minutes at 2300 r.p.m. at 9 sites, with 2 repetitions per site. A 20 foot commercial Privateer with 120 h.p. outboard motor was used for towing. Trawls were towed unbridled with 5/8 inch polydacron rope fastened to the transom of the vessel, and deployed with the vessel in forward motion, with tension on the tow ropes and against the prevailing surface current. A minimum 5:1 ratio of tow rope length to station depth was maintained. The net was retrieved by hand.

2) A 60 foot long by 6 foot high by 1/4 inch bag seine was used at 3 sites. The seine was walked through the water in a semi-circular pattern against the shoreline.

3) A 200 foot long by 8 foot high experimental sinking gill net consisting of four 50 foot panels of 3/4 inch, 1 3/4 inch, 3 1/2 inch, and 4 inch square mesh was used at 3 sites. It was deployed with cinder block attached to both leadlines and two bouys attached to the blocks for marking. Sets were fished for approximately 24 hours. Three (3) sites were sampled using this method.

4) An Indiana Trap Net with a 50 foot leader, made up of 1/2 inch square mesh was fished at 6 sites. The nets were deployed at or near low tide and staked with three wooden dowels 1 5/8 inch in diameter and approximately 14 feet long, one at the lead end and two at the first frame brace. A cinder block was attached to the cod-end. The net was pulled taut until it stood erect and was perpendicular to the shore by means of a floatline attached to the cod-end cinder block. These nets were also fished for approximately 24 hour sets. A total of eight (8) sites were sampled using this method. Fish were identified and counted, and a subsample was measured in the field. Most fish were released, but some specimens were preserved in 10% formalin and taken to the laboratory for further identification or as reference specimens. Numbers in large catches of fish or invertebrates were estimated by counting a subsample.

Most sites were sampled monthly from February 1987 through January 1988. Sites were then sampled quarterly from February 1988 through December 1988.

In addition to collecting fisheries data, sediment samples were collected at each site using a 23cm x 23cm Ponar grab. Three grabs were taken at each of the fisheries site on a quarterly basis from February 1987 through January 1988. These samples were transported back to the laboratory and washed through a 1mm mesh stainless steel sieve. Material remaining on the screen was preserved in 10% rose bengal formalin. Each sample was sorted under a 3x illuminated magnifyer, and invertebrates were identified under a Bausch and Lomb binocular microscope (7x-60x). Sub-samples of identified invertebrates were sent to Mrs. Anne Frame of the National Marine Fisheries Service Laboratory at Sandy Hook, N.J. for verification.

Additional Ponar grabs were taken at each site to characterize particle size distribution of the sediments, and concentrations of selected heavy metals. Representative sub-samples of each grab were sealed in plastic bags and frozen at - 12° C prior to analysis.

Samples used for grain size analysis were dried to a constant weight at a temperature of 100°C. Three (3) 50g sub-samples of dried material were taken from each site and mixed with 100 ml of 0.01N sodium oxalate (dispersing agent) and 50 ml of distilled water. This solution was mixed in a blender for five (5) minutes. The contents of the blender were rinsed through a #230 sieve (0.0625 mm) until the water ran clear. The portion of the sample remaining on the sieve was collected and re-dried to a constant weight at 100°C. The re-dried material was placed in a series of nested sieves (0.125 mm - 4.0 mm) and shaken using a Ro-Tap shaker for 5 minutes.

The fractions of material left on each sieve were collected and weighed on a Mettler Precision balance (P-1000). The percentage of material retained on each sieve was then calculated and classified according to the Wentworth method.

Samples retained for heavy metal analysis were also dried to a constant weight at 100°C. Dried samples were pulverized then digested in analytical grade Nitric acid (HNO_3) and perchloric acid ($HClO_4$). Samples were analyzed using atomic absorption spectrophotometry (Perkin-Elmer 272). Quality control was maintained by analyzing standards of known metal content, and blanks, as well as National Bureau of Standards River Sediment (NBS 1645). Sediments were analyzed for nickle, copper, lead, cadmium, zinc, and chromium.

During each sampling event basic water quality parameters were measured. Dissolved oxygen was measured using a Yellow Spring Instrument Company (Y.S.I.) model 57 oxygen meter. The pH was measured using either a Cole-Parmer electronic pH pen or a Beckman model 21 pH meter. Salinity was measured using either a Y.S.I. model 33 Salinity-Temperature-Conductivity meter or an American Optical model 10419 temperature compensated refractometer. Water clarity was measured using a one foot diameter Secchi disk and temperature was measured using either the Y.S.I. oxygen meter or the Beckman pH meter.

Sampling Sites

Trawl 1 (T1) - Located at the mouth of Penhorn Creek, on the eastern side of the River at approximately River Mile (RM) 3.8. Penhorn Creek has a tide gate upstream from this point, therefore there is a freshwater flow out of Penhorn Creek. Cooling water from the Public Service Electric and Gas generator is also discharged near this site.

Trawl 2 (T2) - Located at the mouth of Sawmill Creek on the western side of the River at approximately RM 5.3. A ConRail swing bridge and the Eastern spur of the New Jersey Turnpike cross the River just south of this site.

Trawl 3 (T3) - Located on the River between the mouth of Berrys Creek, and the mouth of Berrys Creek Canal at approximately RM 7.3. This site is adjacent to the Harmon Cove housing development in Secaucus, Hudson County.

Trawl 4 (T4) - Located on the River between the mouth of Mill Creek and the mouth of Cromakill Creek at approximately RM 9.2. This site is adjacent to the Mill Creek mitigation site in Secaucus, New Jersey.

Trawl 5 (T5) - Located on the River adjacent to the Bergen County Utility Authority sewage treatment plant to the west, and the Ridgefield Public Service Electric and Gas generator to the east. This site is at approximately RM 11.4.

Trawl 6 (T6) - This site is on Sawmill Creek adjacent to the Western Spur of the New Jersey Turnpike. It is approximately 1 nautical mile from the mouth of Sawmill Creek.

Trawl 7 (T7) - This site is on Berrys Creek Canal just south of the New Jersey Route 3 Bridge. It is approximately 0.9 nautical miles from the mouth of Berrys Creek Canal.

Trawl 8 (T8) - This site is on Mill Creek approximately 0.1 nautical miles from the mouth of Mill Creek.

Trawl 9 (T9) - This site is on Cromakill Creek approximately 0.9 nautical miles from the mouth of Cromakill Creek.

Trap net 1 (TN1) - This site is adjacent to T1 near the mouth of Penhorn Creek at approximately RM 3.8.

Trap net 2 (TN2) - This site is near T6 on Sawmill Creek, approximately 1.3 nautical miles from the mouth of Sawmill Creek.

Trap net 3 (TN3) - This site is on the western shore of the River adjacent to T3 at approximately RM 7.2.

Trap net 4 (TN4) - This site is adjacent to T4 near the mouth of Mill Creek at approximately Rm 9.2.

Trap net 5 (TN5) - This site is on the Western bank of the River, near the mouth of Losen Slote at approximately Rm 10.9.

Trap net 6 (TN6) - This site is on the western bank of the River, immediately north of the New Jersey Route 46 Bridge at approximately RM 12.5.

Gill net 1 (GN1) - This site is along the ConRail bridge crossing the River at approximately RM 3.

Gill net 2 (GN2) - This site is along the ConRail River Crossing just north of the mouth of Berrys Creek at Rm 6.9.

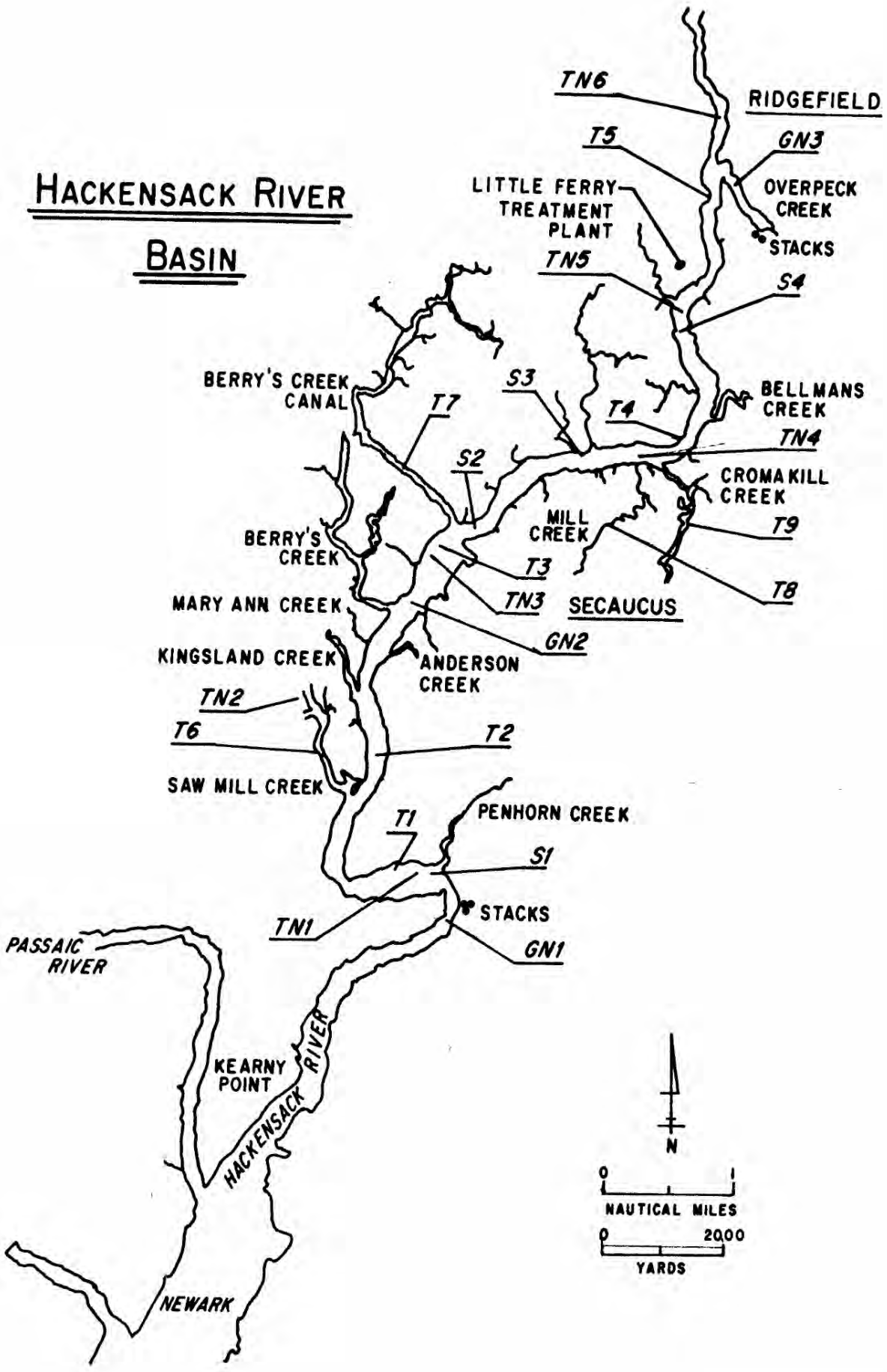
Gill net 3 (GN3) - This site is on Overpeck Creek, approximately 0.3 nautical miles from the mouth of the Creek.

Seine 1 (S1) - This site is on the eastern bank of the River adjacent to the Public Service Electric and Gas generator at approximately RM 3.5.

Seine 2 (S2) - This site is on the western bank of the River, just south of the mouth of Berrys Creek Canal at approximately Rm 7.4.

Seine 3 (S3) - This site was located on the western bank of the River between Bashes and Moonachie Creeks at approximately RM 8.7. This site was abandoned because of difficulty in sampling with the seine.

Seine 4 (S4) - This site is on the western bank of the River just below the New Jersey Turnpike Western Spur Bridge. It is at approximately RM 10.5.


HACKENSACK RIVER
BASIN
TN6
RIDGEFIELD
T5
GN3
LITTLE FERRY
TREATMENT
PLANT
OVERPECK
CREEK
STACKS
TN5
S4
BERRY'S CREEK
CANAL
S3
T7
T4
BELLMANS
CREEK
TN4
S2
CROMA KILL
CREEK
MILL
CREEK
T9
BERRY'S
CREEK
T3
T8
MARY ANN CREEK
TN3
SECAUCUS
GN2
KINGSLAND CREEK
ANDERSON
CREEK
TN2
T6
T2
SAW MILL CREEK
T1
PENHORN CREEK
S1
STACKS
TN1
GN1
PASSAIC
RIVER
KEARNY
POINT
HACKENSACK RIVER
NEWARK
N
0
1
NAUTICAL MILES
0
2000
YARDS

RESULTS AND DISCUSSION

Data from the first year of the study period, from February 1987 through January 1988 (when each site was sampled monthly), showed that the surface water temperature ranged from 2.9-37.0 °C. The dissolved oxygen levels ranged from 1.0-15.5 mg/l, and salinity ranged from 0-16 parts per thousand (ppt).

During this period a total of 339 collections were made, consisting of 211 trawl hauls, 61 trap net collections, 36 seine hauls and 31 gill net sets. Thirty one species of fish were taken. The 10 most abundant and commonly occurring fish were the mummichog (Fundulus heteroclitus), Atlantic silverside (Menidia menidia), inland silverside (Menidia beryllina), white perch (Morone americana), blueback herring (Alosa aestivalis), Atlantic tomcod (Microgadus tomcod), brown bullhead (Ictalurus nebulosus), pumpkinseed (Lepomis gibbosus), American eel (Anguilla rostrata) and bay anchovy (Anchoa mitchilli). The mummichog comprised 91% of the total catch of 43,393 fish, followed by Atlantic silverside (2.5%), inland silverside (1.4%), and white perch (1.3%). The other 27 species combined constituted 3.8% of the total catch. Also collected were 23 species of invertebrates. From these incidental catches it is evident that there are large populations of prey species, such as white fingered mud crab (Rhithropanoepus harrisii), mysid shrimp (Neomysis americana), sand shrimp (Crangon septemspinosa), grass shrimp (Palaemonetes pugio) and several species of amphipods. Also taken were 103 blue crab (Callinectes sapidus), 49 northern diamondback terrapin (Malaclemys terrapin) and 4 common snapping turtle (Chelydra serpentina).

During the second year of the study, from February 1988 through August 1988 (when each site was sampled quarterly), 26 species of fish were taken. Three of these were not captured prior to January 1988; spotted hake (Urophycis regia), striped mullet (Mugil cephalus) and yellow bullhead (Ictaluris natalis). Sixty seven collections consisted of 26 trawl hauls, 28 trap net collections, 6 seine hauls, and 7 gill net sets. The most abundant fish during the second year were the mummichog, inland silverside, white perch, brown bullhead, striped killifish (Fundulus majalis), blueback herring, Atlantic silverside, striped bass (Morone saxatilis) and pumpkinseed. The mummichog comprised 85% of the total catch of 11,562 fish, followed by inland silverside (9.2%), white perch (2%), and brown bullhead (1.4%). The remaining 22 species combined comprised 2.4% of the total catch for this period. Also collected were 191 blue crab, 18 northern diamondback terrapin, and 2 eastern painted turtle (Chrysemys picta), along with 11 species of invertebrates as part of our incidental catches. A total of 34 species of fish were taken from February 1987 to August 1988.

A total of fifty-three (53) different invertebrate species were collected in ponar grabs during the course of this study. Approximately thirty-six (36%) percent of these were polychaetes, fifteen percent (15%) were molluscs, and eleven percent (11%) were amphipods. The remaining thirty-eight percent (38%) was comprised of individuals from thirteen (13) other classes of organism.

The water quality of the Hackensack River fluctuates during the course of the year. During the spring the salinity is generally low, water temperatures begin increasing toward their summer peak and the dissolved oxygen levels are relatively high. As summer approaches the water quality declines. This is due to low freshwater input, increased water temperatures and extremely low dissolved oxygen levels, conditions which are probably stressful to the biota of the river. Beginning in autumn and continuing into winter, water temperatures decline and dissolved oxygen levels rebound to levels more hospitable to aquatic life.

Based on our first year of data the fish community seemed to vary on a seasonal basis, almost regardless of water quality. This is evident when the total number of all fish taken (mummichog excluded) are plotted by month. Two catch peaks are noted, one in May (when water quality is declining), and another larger peak in October (when water quality is starting to improve). These peaks also correspond to periods of seasonal use, such as spring and fall migrations. Fish using the estuary as a refuge from preadators, and/or as a nursery area due to the abundant supply of food also contributed to these peaks.

Fish found in the spring included migrants such as the alewife (Alosa pseudoharengus), Atlantic tomcod, blueback herring, and striped bass, and those seeking food and shelter, the Atlantic menhaden (Brevoortia tyrannus) and bluefish (Pomatomus saltatrix). Some of these fish occurred most of the year, the alewife was caught during 10 months of the year and the tomcod was caught during 11 months.

Some species (Atlantic tomcod, blueback herring, and bluefish) were not collected during July and/or August, because they either moved out of our sampling area or left the estuary altogether, perhaps due to poor water quality (possibly low dissolved oxygen). These fish returned in the fall, as most of the spring migratory species were leaving the river. This, along with other species that were just beginning to enter the estuary, such as the weakfish (Cynoscion regalis) and winter flounder (Pseudopleuronectes americana), yielded a larger fall peak. It should be noted that resident species such as the white perch, inland silverside, brown bullhead, pumpkinseed, carp (Cyprinus carpio) and American eel also contributed to the seasonal peaks.

After the first year of study it seemed apparent, on the basis of salinity and types of fish taken that there were "sections" in the portion of the river studied. Therefore the river was divided into upper, middle and lower zones, based on our sampling locations. Each zone contained one trawl, seine, gill net, and trap net station. An average annual surface salinity was calculated by averaging all of the observed surface salinities from the four stations within each zone. In addition a species list was generated for each zone. In the "lower" river the average annual salinity was 9.4 ppt. Twenty-two species of fish were taken; seven were marine, six diadromous (either migrating from the ocean to freshwater, or from freshwater to the ocean), five estuarine and four freshwater. Blue crab and diamondback terrapin were also taken in this area. In the "middle" river the average annual salinity was 5.6 ppt. Twenty-one species of fish were taken; six marine, seven diadromous, four estuarine and four freshwater.

Blue crab and diamondback terrapin were also present. At our upper sampling limit, the average annual salinity was 3.4 ppt. Fourteen species of fish were taken here; none were marine, but three were diadromous, four estuarine and seven were freshwater. No blue crab were taken, and the snapping turtle replaced the diamondback terrapin here.

The "lower" and "middle" zones of the river proved similiar in terms of the number of species and fish groups found. The salinities here are in the mesohaline range (18.0 to 5.0).ppt. The "upper" zone differs from the others in terms of number and groups of fish species, as well as salinity. Salinity here is oligohaline (5.0 to 0.5 ppt.). In general the mesohaline zone exists from River Mile (RM) 0-10 (the mouth of the river to Cromakill Creek), the oligohaline zone from RM 10-16 (Cromakill Creek to just upriver of Hackensack) and the tidal freshwater zone from RM 16 to Oradell Dam. The freshwater segment is the longest generally during winter and spring, due to rain, snow and ice melt, and it shrinks in summer and autumn, during periods of low freshwater input and increased evaporation. As the freshwater segment shrinks, the meso- and oligohaline segments expand upstream, at times upriver to the Oradell dam. Further upstream, outside of the Hackensack Meadowlands District, we would have encountered an increasingly freshwater system and fish community.

CATCH AND WATER QUALITY COLLECTED AT STATION T1

T1		FEBRUARY 1987 (NOT SAMPLED)	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	JULY 1987
WATER QUALITY							
Collection #		—	0036-0037	0083-0084	0143-0144	0171-0172	0241-0242
Date		—	3/16/87	4/10/87	5/13/87	6/1/87	7/1/87
Time		—	1058	1111	1050	1130	1052
Tidal Stage (hr.)		—	High +2	High +3	High +1	Low +4	Low +4
Average Depth (ft.)		—	15	20	20	20	20
Salinity (o/oo)	surface	—	10.0	2.0	13.0	15.0	16.0
	bottom	—	10.0	2.0	14.0	15.0	16.0
Temperature(°C)	surface	—	5.5	12.0	16.0	29.0	29.0
	bottom	—	5.0	12.5	15.0	24.5	27.5
	air	—	7.0	16.0	16.5	32.0	26.0
D.O.	surface	—	11.8	7.0	6.3	6.1	3.2
	bottom	—	11.4	7.6	6.3	7.7	3.1
pH	surface	—	8.1	7.5	7.9	7.7	7.5
	bottom	—	8.0	7.5	7.9	7.6	7.6
Secchi (cm)		—	120	90	70	60	80
Length of Trawl (#/min)		—	2/3	2/3	2/3	2/3	2/3

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Finfish												
Alewife	—	—	2	91-111	29	80-175	—	—	—	—	—	—
American eel	—	—	—	—	—	—	—	—	1	580	1	430
Atlantic tomcod	—	—	—	—	—	—	24	32-52	1	73	—	—
Black crappie	—	—	—	—	1	125	—	—	—	—	—	—
Blueback herring	—	—	4	75-90	70	155-172	1	231	—	—	—	—
Mummichog	—	—	—	—	—	—	—	—	—	—	3	75-105
Northern pipefish	—	—	—	—	—	—	—	—	1	132	—	—
Rainbow smelt	—	—	—	—	1	80	—	—	—	—	—	—
Striped bass	—	—	—	—	—	—	—	—	—	—	1	160
Invertebrates												
Aegathoa oculata	—	—	—	—	—	—	1	—	—	—	—	—
Balanus improvisus	—	—	6	—	—	—	56	—	15	—	9	—
Congeria leucophaeta	—	—	—	—	4	—	—	—	—	—	—	—
Crangon septemspinosa	—	—	3	—	26	—	227	—	32	—	200	—
Ctenophora	—	—	—	—	—	—	—	—	—	—	—	—
Macoma balthica	—	—	1	—	—	—	—	—	—	—	—	—
Neomysis americana	—	—	—	—	—	—	74	—	—	—	—	—
Nereis sp	—	—	1	—	—	—	—	—	—	—	—	—
Palaemonetes pugio	—	—	—	—	—	—	7	—	64	—	91	—
Rithropanopeus harrisi	—	—	—	—	1	—	1	—	1	—	1	—

CATCH AND WATER QUALITY COLLECTED AT STATION T1

T1		AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987	JANUARY 1988
WATER QUALITY							
Collection #		0276-0277	0345-0346	0433-0434	0460-0461	0528-0529	0609-0610
Date		8/7/87	9/9/87	10/6/87	11/5/87	12/1/87	1/4/88
Time		1118	1142	1045	1029	1035	1122
Tidal Stage (hr.)		High +3	High +1	High +2	High +2.5	High +5	High +2
Average Depth (ft.)		15	20	15	18	15	16
Salinity (o/oo)	surface	15.0	14.5	13.0	10.0	6.0	9.0
	bottom	15.0	16.5	14.0	10.0	7.0	10.0
Temperature(°C)	surface	28.0	24.0	17.5	14.0	9.6	4.1
	bottom	28.0	23.0	17.0	14.0	9.9	3.9
	air	29.0	28.0	18.0	16.5	8.0	4.0
D.O.	surface	1.9	3.4	6.1	7.4	7.0	10.5
	bottom	3.2	3.8	6.0	7.1	7.0	10.2
pH	surface	7.4	7.3	7.8	8.0	7.6	7.8
	bottom	7.4	7.4	7.7	7.9	7.6	7.8
Secchi (cm)		80	70	90	75	70	80
Length of Trawl (#/min)		2/3	2/3	2/3	2/3	2/3	2/3
CATCH		# size range	# size range	# size range	# size range	# size range	# size range
Finfish							
Alewife		— —	— —	2 144-237	— —	— —	1 96
American eel		— —	— —	1 450	— —	— —	— —
Atlantic menhaden		— —	1 246	— —	— —	— —	— —
Atlantic tomcod		— —	— —	2 126-130	16 130-193	2 186-187	— —
Bay anchovy		1 30	5 33-77	13 33-79	— —	2 33-36	— —
Blueback herring		— —	2 112-206	— —	— —	— —	— —
Bluefish		— —	2 106-109	1 113	— —	— —	— —
Mummichog		31 40-98	— —	— —	— —	— —	— —
Striped bass		— —	— —	1 176	— —	— —	— —
Weakfish		— —	— —	6 51-124	— —	— —	— —
Winter flounder		— —	— —	5 80-145	— —	— —	— —

T1	AUGUST 1987		SEPTEMBER 1987		OCTOBER 1987		NOVEMBER 1987		DECEMBER 1987		JANUARY 1988	
CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Invertebrates												
Balanus improvisus	160	—	20	—	10	—	50	—	73	—	45	—
Callinectes sapidus	—	—	—	—	4	41-123	5	17-70	2	36-66	—	—
Congeria leucopheata	—	—	—	—	—	—	—	—	10	—	—	—
Corambella sp.	—	—	—	—	—	—	—	—	1	—	—	—
Crangon septemäpinosa	—	—	17	—	57	—	172	—	10	—	5	—
Ctenophora	—	—	300	—	100	—	3	—	—	—	—	—
Palaemonetes pugio	800	—	3	—	11	—	7	—	—	—	—	—
Rhithropanopeus harrisii	6	—	8	—	1	—	—	—	—	—	—	—

CATCH AND WATER QUALITY COLLECTED AT T1

T1		WINTER 1988 (NOT SAMPLED)	SPRING 1988	SUMMER 1988	FALL 1988
WATER QUALITY					
Collection No.		—	0731-0732	0864-0865	0965-0966
Date		—	4/21/88	8/3/88	11/9/88
Time		—	1131	1057	—
Tidal Stage (hr.)		—	Low +4.0	Low +3	High +2.0
Average Depth (ft.)		—	20	15	20
Salinity (o/oo)	surface	—	10.0	8.0	14.0
	bottom	—	10.0	10.0	14.0
Temperature(°C)	surface	—	10.6	33.0	11.8
	bottom	—	10.6	30.8	11.6
	air	—	12.0	27.0	10.0
D.O.	surface	—	9.4	3.3	6.8
	bottom	—	9.6	2.9	6.8
pH	surface	—	8.2	7.4	8.2
	bottom	—	8.0	7.3	8.1
Secchi (cm)		—	80	50	60
Length of Set (hr.)		—	2/3	2/3	2/3

	#	size range	#	size range	#	size range	#	size range
Finfish								
American shad	—	—	1	—	—	—	1	228
Atlantic tomcod	—	—	1	185	—	—	44	117-212
Blueback herring	—	—	53	78-102	—	—	—	—
Striped bass	—	—	2	244-287	—	—	—	—
Spot	—	—	—	—	—	—	1	123
Spotted hake	—	—	3	103-131	—	—	—	—
Invertebrates								
P. improvisus	—	—	—	—	2000	—	44	—
Callinectes sapidus	—	—	—	—	1	155	49	24-156
Congeria leucopheata	—	—	—	—	2	—	—	—
Crangon septemspinosa	—	—	27	—	—	—	53	—
Palaemonetes pugio	—	—	—	—	27	—	9	—
Rhithropanopeus harrisii	—	—	2	—	50	—	—	—

Station T1 Shallow

		SPRING 1987		SUMMER 1987		FALL 1987		WINTER 1988		
WATER QUALITY										
Collection No.		0103-0105		0301-0303		571-573		0707-0709		
Date		4/22/87		8/13/87		12/8/87		3/24/88		
Time		1155		1155		1143		1158		
Tidal stage (hr.)		Low + 1		Low + 5		High + 2		Low + 3.5		
Average Depth (ft.)		—		15		15		15		
Salinity(o/oo)	surface	4.0		17.0		8.0		10.0		
	bottom	5.0		17.0		8.0		11.0		
Temperature (°C)	surface	19.5		27.0		9.9		7.6		
	bottom	17.0		25.5		7.1		6.8		
	air	18.5		24.0		7.0		20.0		
D.O. (ppm)	surface	7.9		3.1		9.0		12.0		
	bottom	8.1		3.7		9.6		11.6		
pH	surface	7.7		7.7		7.5		8.1		
	bottom	7.7		7.3		7.5		8.1		
Secchi (cm)		70.0		70.0		70.0		70.0		
CATCH		#	m^2	#	m^2	#	m^2	#	m^2	
Nemertea		4	27	4	27	10	67	2	13	
Anthzoa Actinaria sp.		—	—	1	7	—	—	—	—	
Bivalvia Macoma balthica		11	73	38	253	1	7	4	27	
Mya arenaria		1	7	83	553	2	13	3	20	
Oligochaeta		41	273	—	—	79	527	17	113	
Polychaeta Eteone hetorpoda		—	—	2	13	—	—	—	—	
Glycera dibranchiata		—	—	1	7	—	—	—	—	
Heteromastus		—	—	—	7	47	—	—	—	
filliformis		—	—	—	—	—	—	—	—	
Hypaniola florida		—	—	186	1240	1	7	1	7	
Laeoneries culveri		—	—	22	147	12	80	—	—	
Leitoscoloplos		—	—	—	1	7	—	—	—	
fragilis										
Marenzellaria viridis			—	—	4	27	3	20	3	20
Pectinaria gouldii		—	—	2	13	1	7	—	—	
Polydora ligni		—	—	—	—	1	7	—	—	
Streblospio benedicti			8	53	21	140	89	593	—	—
Isopoda Cyathura polita		4	27	31	207	25	167	5	33	
Edotea triloloba		—	—	2	13	—	—	1	7	

T1

CATCH		SPRING 1987 #	SPRING 1987 m^2	SUMMER 1987 #	SUMMER 1987 m^2	FALL 1987 #	FALL 1987 m^2	WINTER 1988 #	WINTER 1988 m^2
Amphipoda		--	--	--	--	--	--	2	13
Decapoda	Crangon septemspinosa	1	7	--	--	--	--	--	--
	Palaemonetes pugio	--	--	1	7	--	--	--	--
	Rithropanopeus harrisii	--	--	9	60	--	--	--	--
					--	--	--	--	--
Coleoptera		--	--	--	--	--	--	2	13
Chironomidae		1	7	--	--	--	--	--	--

Station T1 Deep

		SPRING 1987	SUMMER 1987	FALL 1987	WINTER 1988
WATER QUALITY					
Collection No.		0106-0108	0304-0306	0574-0576	0710-0712
Date		4/22/87	8/13/87	12/8/87	3/24/88
Time		1215	1234	1153	1209
Tidal stage (hr.)		Low + 1	Low + 5	High + 2	Low + 3.5
Average Depth (ft.)		—	25	25	20
Salinity (o/oo)	surface	4.0	17.0	8.0	10.0
	bottom	5.0	17.0	8.0	11.0
Temperature (°C)	surface	19.5	27.0	9.9	7.6
	bottom	17.0	25.5	7.1	6.8
	air	18.5	24.0	7.0	20.0
D.O. (ppm)	surface	7.9	3.1	9.0	12.0
	bottom	8.1	3.7	9.6	11.6
pH	surface	7.7	7.3	7.5	8.1
	bottom	7.7	7.3	7.5	8.1
Secchi (cm)		70	70	70	70

CATCH	#	m^2	#	m^2	#	m^2	#	m^2
Congeria leucophaeta	—	—	1	7	8	53	—	—
Nemertea	1	7	1	7	1	7	5	33
Bivalvia Congeria Macoma	4	27	1	7	—	—	2	13
balthica	—	—	—	—	—	—	—	—
Mya Arenaria	—	—	—	—	1	7	1	7
Polychaeta Eteone longa	—	—	1	7	3	20	—	—
Leitoscoloplos fragilis	—	—	—	—	1	7	—	—
Laeoneries culveri	—	—	1	7	1	7	—	—
Marenzellaria Viridis	2	13	8	53	6	40	8	53
Haploscoloplos sp.	—	—	—	—	—	—	2	13
Streblospio benedicti	—	—	6	40	192	1280	7	47
Oligochaeta	7	47	11	73	37	247	1	7
Isopoda								
Cyathura polita	1	7	2	13	4	27	4	27
Decapoda Crangon septemspinosa	1	7	—	—	—	—	—	—
Crustacea Zoea	—	—	1	7	—	—	—	—
Rhithropanopeus harisi	—	4	27	6	40	—	—	—
Chironomidae	1	7	—	—	—	—	—	—
Monoculodes edwards	—	—	—	—	—	—	3	20
Balanus improvisus	1	7	—	—	51	340	2	13

CATCH AND WATER QUALITY COLLECTED AT STATION T2

T2	FEBRUARY 1987	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	JULY 1987
WATER QUALITY						
Collection No.	0020-0021	0034-0035	0085-0086	0145-0146	0173-0174	0243-0244
Date	2/27/87	3/13/87	4/10/87	5/13/87	6/1/87	7/1/87
Time	1458	1408	1418	1140	1220	1131
Tidal stage	Low + 0	Low + 0	High +5	High +2	Low +5	Low +4
Average Depth (ft.)	25	30	25	20	20	20
Salinity (o/oo) surface	9.0	5.0	2.0	10.0	15.0	14.0
bottom	9.5	5.0	2.0	10.0	15.0	15.0
Temperature (°C) surface	5.0	6.0	16.0	17.5	27.0	28.0
bottom	4.0	5.0	14.5	17.0	25.5	28.0
air	8.0	3.5	18.0	16.0	27.0	26.0
D.O. (ppm) surface	10.0	12.4	8.4	6.4	7.4	3.1
bottom	10.2	13.7	8.4	5.8	6.2	4.2
pH surface	7.6	8.0	7.5	7.8	7.7	7.5
bottom	7.6	8.3	7.6	7.8	7.6	7.6
Secchi (cm)	60	50	100	80	60	70
# & Length of Trawl (#/min.)	2/3	2/3	2/3	2/3	2/3	2/3

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
American eel	1	560	1	65	1	510	4	270-470	--	--	--	--
Atlantic menhaden	--	--	--	--	--	--	--	--	1	203	--	--
Atlantic tomcod	--	--	--	--	--	--	1	38	--	--	--	--
Alewife	--	--	--	--	1	90	--	--	--	--	--	--
Mummichog	3	40-72	2	82-93	1	96	--	--	4	84-100	--	--
Striped killifish	--	--	2	88-101	--	--	--	--	--	--	--	--
White perch	10	108-267	--	--	4	120-210	--	--	--	--	--	--
INVERTEBRATES												
Balanus improvisus	600	--	200	--	50	--	75	--	--	--	--	--
Callinectes sapidus	--	--	--	--	--	--	--	--	1	144	--	--
Crangon septemspinosa	180	--	200	--	--	--	7	--	10	--	--	--
Corophium simile	2	--	--	--	--	--	----	--	--	--	--	--
Palaemonetes pugio	8500	--	70	--	300	--	49	--	6400	--	473	--
Rhithropanopeus harrisii	7	--	5	--	1	--	7	--	200	--	2	--
Melita sp.	2	--	--	--	--	--	--	--	--	--	--	--

CATCH AND WATER QUALITY COLLECTED AT STATION T2

T2 WATER QUALITY		AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987	JANUARY 1988
Collection No.		0278-0279	0347-0348	0435-0436	0462-0463	0530-0531	0611-0612
Date		8/7/87	9/9/87	10/6/87	11/5/87	12/1/87	1/4/88
Time		1159	1218	1145	1121	1117	1211
Tidal stage		High +4	High +1	High +3	High +3.5	High +5.5	High +2
Average Depth (ft.)		20	25	25	25	25	20
Salinity (o/oo)	surface	15.0	14.5	9.2	7.0	5.0	8.0
	bottom	14.0	15.0	11.0	8.0	6.0	7.0
Temperature (°C)	surface	28.0	23.0	18.0	14.9	9.4	3.6
	bottom	28.0	23.0	18.0	14.9	9.5	3.6
	air	31.0	28.0	18.0	14.0	9.0	4.0
D.O. (ppm)	surface	1.4	2.8	5.2	6.7	7.0	9.4
	bottom	3.1	3.7	5.3	7.3	7.0	9.8
pH	surface	7.4	7.4	7.6	7.8	7.5	7.3
	bottom	7.4	7.2	7.5	8.0	7.5	7.1
Secchi (cm)		80	70	60	50	80	90
# & Length of Trawl (#/min.)		2/3	2/3	2/3	2/3	2/3	2/3

CATCH FINFISH	AUGUST 1987 #	AUGUST 1987 size range	SEPTEMBER 1987 #	SEPTEMBER 1987 size range	OCTOBER 1987 #	OCTOBER 1987 size range	NOVEMBER 1987 #	NOVEMBER 1987 size range	DECEMBER 1987 #	DECEMBER 1987 size range	JANUARY 1988 #	JANUARY 1988 size range
American eel	—	—	2	210-470	1	385	—	—	2	450-510	—	—
Atlantic tomcod	—	—	—	—	22	112-141	13	148-195	18	117-207	Mummichog	
bay anchovy	—	—	21	35-72	1	40	—	—	—	—	—	—
Mummichog	4	61-77	7	44-104	1	105	—	—	1	101	1	86
Striped killifish	—	—	—	—	—	—	—	—	1	108	—	—
White perch	—	—	—	—	—	—	—	—	2	90-102	—	—
Winter flounder	—	—	—	—	7	77-120	—	—	—	—	—	1
Weakfish	—	—	6	35-52	10	51-120	—	—	—	—	—	105
INVERTEBRATES												
Balanus improvisus	3000	—	15	—	100	—	2515	—	100,000		—	40
Callinectes sapidus	—	—	6	24-190	3	38-120	1	65	1	50	—	—
Crangon septemspinosa	—	—	250	—	110	—	30	—	1	—	2	—
Palaemonetes pugio	57	—	260	—	220	—	—	—	—	—	24	—
Rhithropanopeus harrisii	10	—	45	—	5	—	51	—	18	—	8	—

CATCH AND WATER QUALITY COLLECTED AT T2

T2	WINTER 1988 (NOT SAMPLED)	SPRING 1988	SUMMER 1988	FALL 1988
WATER QUALITY				
Collection No.	—	0733-0734	0866-0867	0967-0968
Date	—	4/21/88	8/3/88	11/9/88
Time	—	1236	1141	1156
Tidal Stage	—	Low + 5	Low +3.5	High +3
Average Depth (ft.)	—	20	10	25
Salinity (o/oo) surface	—	10.0	9.0	10.0
bottom	—	10.9	10	10
Temperature (°C) surface	—	10.7	31.1	12.5
bottom	—	10.8	31.1	12.5
air	—	12.0	28.0	9.5
pH surface	—	8.0	7.2	7.9
bottom	—	8.0	7.2	7.9
Secchi (cm)	—	90	50	50
# & Length of tow (min)	—	2/3	2/3	2/3

CATCH	#	size range	#	size range	#	size range	#	size range
FINFISH								
American eel	—	—	—	—	—	—	4	200-560
Conger eel	—	—	—	—	—	—	1	—
Atlantic tomcod	—	—	—	—	—	—	79	174-230
blueback herring	—	—	1	160	—	—	—	—
spot	—	—	—	—	—	—	1	134
striped bass	—	—	1	235	—	—	—	—
weakfish	—	—	—	—	—	—	11	85-115
windowpane	—	—	—	—	—	—	1	85
winter flounder	—	—	—	—	—	—	4	63-130
	—	—	—	—	—	—	—	—
INVERTEBRATES								
Balanus improvisus	—	—	12	—	350	—	240	—
Callinectes sapidus	—	—	2	56-60	3	110-133	32	22-66

T2	#	size range	#	size range	#	size range	#	size range
Crangon septemspinosa	—	—	4	—	—	—	3	—
Nereis succinea	—	—	—	—	—	—	1	—
Palaemonetes pugio	—	—	2	—	125	—	55	—
Rhithropanopeus harrisii	—	—	7	—	55	—	22	—
congeria leucopheata	—	—	—	—	20	—	—	—

Station T2 Shallow

		SPRING 1987	SUMMER 1987	FALL 1987	WINTER 1988
WATER QUALITY					
Collection No.		0137-0139	0319-0321	0601-0603	0683-0685
Date		5/11/87	8/26/87	12/10/87	3/8/88
Time		1311	1059	1250	1045
Tidal stage (hr.)		High + 4	High + 0	High + 0	Low + 5
Average Depth (ft.)		10	10-20	10	10
Salinity(o/oo)	surface	6.0	15.5	8.0	6.0
	bottom	7.0	16.0	8.0	6.0
Temperature (°C)	surface	18.0	26.0	9.6	7.0
	bottom	18.5	25.5	8.9	7.1
	air	19.0	21.0	12.0	8.0
D.O. (ppm)	surface	5.4	3.8	7.2	10.2
	bottom	5.1	4.5	7.6	10.1
pH	surface	7.7	7.6	7.5	7.8
	bottom	7.7	7.6	7.4	7.8
Secchi (cm)		60.0	70.0	90.0	60.0

CATCH		#	m^2	#	m^2	#	m^2	#	m^2
Bivalvia	Geukensia demissus	1	7	—	—	—	—	—	—
	Leucon americanus	—	—	—	—	—	—	2	13
	Macoma balthica	6	40	—	—	—	—	—	—
Polychaeta		—	—	4	27	—	—	—	—
	Hypaniola florida	1	7	—	—	—	—	—	—
	Manayunkia aesturina	3	20	—	—	—	—	—	—
	Marenzellaria viridis	1	7	—	—	—	—	—	—
	Nereis succinea	3	20	—	—	—	—	—	—
	Polydora socialis	32	213	—	—	9	60	6	40
	Streblospio benedicti	6	40	—	—	16	107	1	7
Oligochaeta		117	780	—	—	1	7	5	33
Copepods,	Harpaticoid	2	13	—	—	—	—	—	—
Isopoda	Edotea triloba	2	13	—	—	1	7	1	7
Amphipoda	Corophium lacustre	29	193	—	—	3	20	2	13
	Melita nitida	4	27	—	—	—	—	—	—
Cirripedia	Balanus improvisus	1	7	—	—	—	—	—	—
Decapoda	Palaemonetes pugio	1	7	—	—	—	—	—	—
	Rithropanopeus harrisii	41	273	16	107	1	7	1	7
	Crangon septemspinosa	—	—	—	—	1	7	—	—
Chironomidae		14	93	—	—	—	—	—	—

Station T2 Deep

		SPRING 1987		SUMMER 1987		FALL 1987		WINTER 1988	
WATER QUALITY									
Collection No.		0140-0142		322-324		0598-0600		0680-0682	
Date		5/11/87		8/26/87		12/10/87		3/8/88	
Time		1319		1113		1230		1055	
Tidal stage (hr.)		High + 5		High + 0		High + 0		Low + 5	
Average Depth (ft.)		20		30		25		20	
Salinity (o/oo)	surface	6.0		15.5		8.0		6.0	
	bottom	7.0		16.0		8.0		6.0	
Temperature (°C)	surface	18.0		26.0		9.6		7.0	
	bottom	18.5		25.5		8.9		7.1	
	air	19.0		21.0		12.0		8.0	
D.O. (ppm)	surface	5.4		3.8		7.2		10.2	
	bottom	5.1		4.5		7.6		10.1	
pH	surface	7.7		7.6		7.5		7.8	
	bottom	7.7		7.6		7.4		7.8	
Secchi (cm)		60		70.0		90.0		60.0	
CATCH		#	m^2	#	m^2	#	m^2	#	m^2
	Nemertea	--	--	—	—	1	7	1	7
Bivalvia	Macoma balthica	19	127	2	13	2	13	1	7
	Congeria leucopheata	—	—	—	—	—	—	1	7
Gastropoda	Hydrobia totteni	1	7	—	—	6	40	1	7
	Eteone heteropoda	--	—	1	7	2	13	1	7
Polychaeta	Spionidae sp.	1	7	—	—	--	—	—	—
	Hypaniola florida	—	—	—	—	1	7	—	—
	Polydora socialis	2	13	1	7	--	—	—	—
	Marenzellaria viridis	—	—	4	27	12	80	4	27
	Nereis succinea	1	7	—	—	2	13	—	—
	Streblospio benedicti	—	—	54	360	304	2627	180	1200
Nematoda		1	7	—	—	—	—	—	—
Oligochaeta		56	373	15	100	128	853	128	853
	Edotea triloba	—	—	—	—	3	20	—	—
Isopoda	Cyathura polita	2	13	4	27	11	73	—	—
Amphidoda	Corophium lacuste	1	7	—	—	2	13	—	—
	Melita nitida	—	—	—	—	1	7	—	—
Decopoda	Neomysis americana	1	7	—	—	—	—	—	—
	Crangon septemspinosa	1	7	—	—	—	—	—	—
				—	—	—	—	—	—
	Rithropanopeus harrisii	10	67	22	147	5	33	—	—
	Balanus improvisus	--	—	2	13	37	247	7	47

CATCH AND WATER QUALITY COLLECTED AT STATION T3

T3		FEBRUARY 1987	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	JULY 1987
WATER QUALITY							
Collection #		0010-0011	0032-0033	0091-0092	0147-0148	0185-0186	0247-0248
Date		2/25/87	3/13/87	4/16/87	5/13/87	6/5/87	7/1/87
Time		1015	1320	1253	1430	1225	1254
Tidal Stage (hr.)		High +3	High +5	High +1	High +4	Low +2	High +0
Average Depth (ft.)		20	32	25	20	20	15
Salinity (o/oo)	surface	8.5	2.0	0.0	5.0	8.0	11.0
	bottom	9.0	3.0	0.0	5.0	8.0	13.0
Temperature(°C)	surface	3.0	8.0	12.0	19.5	26.0	27.0
	bottom	3.0	6.0	12.5	19.5	25.0	27.0
	air	5.0	3.0	9.0	20.0	21.5	26.0
D.O.	surface	9.8	12.4	7.0	4.4	2.5	5.9
	bottom	9.8	14.0	7.2	5.3	2.6	4.2
pH	surface	7.6	7.7	7.5	7.6	7.6	7.7
	bottom	7.5	7.8	7.6	7.6	7.5	7.6
Secchi (cm)		60	60	70	80	50	70
Length of Trawl (#/min)		2/3	2/3	2/3	2/3	2/3	2/3

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Finfish												
Alewife	2	123-137	—	—	—	—	1	250	—	—	1	130
American eel	1	60	—	—	1	440	3	320-490	—	—	7	225-460
Atlantic tomcod	—	—	—	—	—	—	1	43	—	—	—	—
Blueback herring	—	—	—	—	1	87	8	107-128	—	—	—	—
Mummichog	2	34-85	3	44-65	2	49-68	13	71-100	2	50-73	64	50-97
Striped bass	—	—	—	—	—	—	1	125	—	—	—	—
Invertebrates												
Balanus improvisus	10	—	—	—	—	—	15	—	—	—	—	—
Crangon Septemspinosa	8	—	105	—	—	—	6	—	—	—	—	—
Gammarus tigrinus	1	—	—	—	—	—	—	—	—	—	—	—
Neomysis americana	7	—	—	—	—	—	—	—	—	—	—	—
Palaemonetes pugio	16	—	1060		35	—	321	—	4	—	87	—
Rhithropanopeus harrisii	3	—	—	—	1	—	4	—	5	—	1	—

CATCH AND WATER QUALITY COLLECTED AT STATION T3

T3		AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987	JANUARY 1988
WATER QUALITY							
Collection #		0280-0281	0349-0350	0437-0438	0464-0465	0532-0533	0613-0614
Date		8/7/87	9/9/87	10/6/87	11/5/87	12/1/87	1/4/88
Time		1248	1311	1245	1214	1207	1248
Tidal Stage (hr.)		High +4	High +2	High +3	High +4	Low +0	High +3
Average Depth (ft.)		15	20	20	20	15	20
Salinity (o/oo)	surface	12.0	11.0	7.0	8.0	5.0	4.0
	bottom	15.0	12.5	7.5	6.0	5.0	4.0
Temperature(°C)	surface	29.0	24.0	17.5	15.3	9.7	3.1
	bottom	28.0	24.0	17.5	15.5	9.2	3.0
	air	31.0	28.0	18.0	16.0	8.0	4.0
D.O.	surface	1.9	3.0	4.3	6.8	5.6	8.8
	bottom	3.2	2.9	5.2	6.8	5.4	9.0
pH	surface	7.3	7.4	7.4	7.8	7.5	7.0
	bottom	7.2	7.3	7.5	7.8	7.5	7.1
Secchi (cm)		65	60	50	50	80	80
Length of Trawl (#/min)		2/3	2/3	2/3	2/3	2/3	2/3

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Finfish												
Alewife	—	—	—	—	—	—	—	—	1	175	—	—
American eel	1	232	3	310-410	2	445-460	3	135-245	1	520	—	—
Atlantic menhaden	—	—	—	—	3	214-287	—	—	—	—	—	—
Atlantic tomcod	—	—	—	—	2	110-114	49	122-189	—	—	1	210
Bay anchovy	—	—	27	23-60	3	55-75	2	20-42	—	—	—	—
Blueback herring	—	—	2	139-147	—	—	—	—	—	—	—	—
Mummichog	9	49-79	54	38-107	10	40-80	2	63-69	53	40-98	—	—
Pumpkinseed	—	—	—	—	—	—	1	39	—	—	—	—
Seaboard goby	—	—	—	—	—	—	1	18	—	—	—	—
Striped killifish	—	—	—	—	—	—	—	—	6	65-110	1	92
Weakfish	—	—	—	—	—	—	4	65-120	—	—	—	—
Winter flounder	—	—	—	—	1	75	1	112	1	108	—	—
Invertebrates												
Balanus improvisus	—	—	—	—	—	—	—	—	—	—	25	—
Callinectes sapidus	—	—	2	155-179	2	35-102	1	21	—	—	—	—
Crangon septemspinosa	—	—	—	—	45	—	33	—	45	—	—	—

CATCH AND WATER QUALITY COLLECTED AT T3

T3	WINTER 1988		SPRING 1988	SPRING 1988	SUMMER 1988 (for public program)	FALL 1988
WATER QUALITY						
Collection No.	—	—	0735-0736	No. Coll. #	0868-0869	0956-0957
Date	—	—	4/21/88	5/7/88	8/3/88	10/28/88
Time	—	—	1319	1145	1242	1308
Tidal Stage (hr.)	—	—	Low +5.5	Low	Low + 5	High + 0
Average Depth (ft.)	—	—	15	—	20	20
Salinity (o/oo) surface	—	—	12.5	16.0	30.9	12.9
bottom	—	—	8.0	--	8.0	14.0
Temperature (°C) surface	—	—	12.5	16.0	30.9	12.9
bottom	—	—	11.3	—	31.0	12.9
air	—	—	12.0	19.0	29.0	13.0
D.O. (ppm) surface	—	—	11.6	10.2	4.3	6.8
bottom	—	—	10.6	--	2.9	6.6
pH surface	—	—	8.2	8.0	7.3	7.8
bottom	—	—	8.2	—	7.2	7.8
secchi (cm)	—	—	70	60	50	60
# & Length of tow (min)	—	—	2/3	2/3	2/3	2/3

CATCH

FINFISH	#	size range	#	size range	#	size range	#	size range	#	size range
american shad	—	--	1	148	--	--	—	--	--	--
american eel	—	--	—	--	--	--	1	480-	--	--
blueback herring	—	--	—	--	1	155	--	--	--	--
pumpkinseed										
striped killifish	—	—	--	--	--	--	--	—	22	117-150
weakfish	--	--	--	--	--	--	--	—	7	72-157
spotted hake	—	—	--	--	4	117-127	---	—	--	--
INVERTEBRATES										
Balanus improvisus	--	—	--	--	--	--	6	—	--	--
Callinectes sapidus	—	—	1	45	2	36-70	--	--	--	--
Crangon septemspinosa	—	—	15	—	5	—	92	—	9--	—
Palaemonetes pugio	--	--	3	—	5	—	340	10	26-73	
Rhithropanopeus harrisii	—	—	1	—	10	—	3	—	—	—

T3	AUGUST 1987		SEPTEMBER 1987		OCTOBER 1987		NOVEMBER 1987		DECEMBER 1987		JANUARY 1988	
CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Neomysis americana	--	--	--	--	--	--	16	--	--	--	--	--
Palaemonetes pugio	200	--	6500	--	30	--	7	--	26	--	52	--
Rhithropanopeus harrisii	1	--	--	--	--	--	--	--	2	--	--	--

CATCH AND WATER QUALITY COLLECTED AT STATION T3

T3		AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987	JANUARY 1988
WATER QUALITY							
Collection #		0280-0281	0349-0350	0437-0438	0464-0465	0532-0533	0613-0614
Date		8/7/87	9/9/87	10/6/87	11/5/87	12/1/87	1/4/88
Time		1248	1311	1245	1214	1207	1248
Tidal Stage (hr.)		High +4	High +2	High +3	High +4	Low +0	High +3
Average Depth (ft.)		15	20	20	20	15	20
Salinity (o/oo)	surface	12.0	11.0	7.0	8.0	5.0	4.0
	bottom	15.0	12.5	7.5	6.0	5.0	4.0
Temperature(°C)	surface	29.0	24.0	17.5	15.3	9.7	3.1
	bottom	28.0	24.0	17.5	15.5	9.2	3.0
	air	31.0	28.0	18.0	16.0	8.0	4.0
D.O.	surface	1.9	3.0	4.3	6.8	5.6	8.8
	bottom	3.2	2.9	5.2	6.8	5.4	9.0
pH	surface	7.3	7.4	7.4	7.8	7.5	7.0
	bottom	7.2	7.3	7.5	7.8	7.5	7.1
Secchi (cm)		65	60	50	50	80	80
Length of Trawl (#/min)		2/3	2/3	2/3	2/3	2/3	2/3

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Finfish												
Alewife	—	—	—	—	—	—	—	—	1	175	—	—
American eel	1	232	3	310-410	2	445-460	3	135-245	1	520	—	—
Atlantic menhaden	—	—	—	—	3	214-287	—	—	—	—	—	—
Atlantic tomcod	—	—	—	—	2	110-114	49	122-189	—	—	1	210
Bay anchovy	—	—	27	23-60	3	55-75	2	20-42	—	—	—	—
Blueback herring	—	—	2	139-147	—	—	—	—	—	—	—	—
Mummichog	9	49-79	54	38-107	10	40-80	2	63-69	53	40-98	—	—
Pumpkinseed	—	—	—	—	—	—	1	39	—	—	—	—
Seaboard goby	—	—	—	—	—	—	1	18	—	—	—	—
Striped killifish	—	—	—	—	—	—	—	—	6	65-110	1	92
Weakfish	—	—	—	—	—	—	4	65-120	—	—	—	—
Winter flounder	—	—	—	—	1	75	1	112	1	108	—	—
Invertebrates												
Balanus improvisus	—	—	—	—	—	—	—	—	—	—	25	—
Callinectes sapidus	—	—	2	155-179	2	35-102	1	21	—	—	—	—
Crangon septemspinosa	—	—	—	—	45	—	33	—	45	—	—	—

Station T3 Deep

WATER QUALITY		SPRING 1987	SUMMER 1987	FALL 1987	WINTER 1988
Collection No.		0194-0196	0369-0371	0490-0492	0668-0670
Date		6/9/87	9/15/87	11/16/87	2/29/88
Time		1105	1116	1239	1215
Tidal stage (hr.)		--	Low + 1	Low + 0.5	High + 4.5
Average Depth (ft.)		25	20	25	20
Salinity (o/oo)	surface	8.0	6.0	5.0	2.0
	bottom	9.0	8.0	5.0	2.0
Temperature (°C)	surface	24.0	25.0	10.0	6.7
	bottom	24.0	25.0	10.0	6.1
	air	21.0	21.0	--	5.0
D.O. (ppm)	surface	3.2	2.5	4.2	8.2
	bottom	3.5	2.5	5.2	--
pH	surface	7.6	7.5	8.8	--
	bottom	7.6	7.4	9.0	--
Secchi (cm)		70.0	100.0	70.0	--

CATCH		#	m^2	#	m^2	#	m^2	#	m^2
Bivalvia	Congeria leucophaeta	--	--	20	133	3	20	--	--
	Macoma balthica	--	--	7	47	1	7	4	27
Gastropoda	Hydrobia totteni	2	13	--	--	136	907	486	3240
Polychaeta	Hypaniola florida	3	20	4	27	2	13	--	--
	Laeoneries culveri	--	--	2	13	--	--	--	--
	Marenzellaria viridis	--	--	--	1	7	--	--	--
	Streblospio benedicti	--	--	--	5	33	3	20	17
		--	--	5	33	3	20	1	7
Oligochaeta		175	1167	182	1213	226	1507	108	720
Isopoda	Cyathura polita	--	--	2	13	--	--	1	7
Copepoda	Harpactocoid	1	7	--	--	--	--	--	--
Decapoda	Crab zoea	8	53	--	--	--	--	--	--
	Palaemonetes pugio	--	--	2	13	--	--	--	--
	Rithropanopeus harrisii	--	--	29	193	5	33	--	--
		--	--	--	--	--	--	--	--
	Neomysis americana	--	--	--	--	2	13	--	--
Chironomidae		23	153	--	--	--	--	--	--
Amphipoda	Melita nitida	--	--	--	--	--	1	7	--
	Monoculodes edwardsi	--	--	--	--	--	1	7	--
	Edotea triloba	--	--	--	--	--	1	7	--
Cumacea	Leucon americanus	--	--	--	--	--	2	13	--

CATCH AND WATER QUALITY COLLECTED AT STATION T4

T4		FEBRUARY 1987	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	JULY 1987
WATER QUALITY							
Collection #		0014-0015	0030-0031	0074-0075	0155-0156	0187-0188	0254-0255
Date		2/25/87	3/13/87	4/3/87	5/14/87	6/5/87	7/6/87
Time		1421	1139	1322	1501	1308	1324
Tidal Stage (hr.)		Low +1	High +3	High + 0	High +5	Low +2	Low +2
Average Depth (ft.)		15	12	15	15	20	20
Salinity (o/oo)	surface	6.0	0.0	4.0	3.0	6.0	8.0
	bottom	6.0	2.0	4.0	4.0	8.0	10.0
Temperature(°C)	surface	8.0	8.0	16.0	24.0	27.0	28.5
	bottom	9.0	6.5	13.5	23.0	26.0	28.0
	air	7.0	2.0	16.0	21.0	24.0	24.0
D.O.	surface	5.0	12.0	7.8	3.2	2.8	4.5
	bottom	5.8	12.2	6.2	3.6	2.5	2.7
pH	surface	7.4	7.5	7.7	7.6	7.5	7.6
	bottom	7.4	7.7	7.6	7.6	7.5	7.5
Secchi (cm)		40	50	70	65	50	70
Length of Trawl (#/min)		2/3	2/3	2/3	2/3	2/3	2/3

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Finfish												
American eel	—	—	1	65	—	—	—	—	—	—	—	—
Brown bullhead	—	—	—	—	1	313	—	—	—	—	—	—
Mummichog	175	27-91	287	37-98	27	50-107	3	69-78	—	—	58	55-88
Striped killifish	1	85	—	—	—	—	—	—	—	—	—	—
White perch	1	100	1	105	—	—	—	—	—	—	—	—
Invertebrates												
Balanus improvisus	—	—	—	—	—	—	3	—	50	—	—	—
Congeria leucopheata	2	—	—	—	—	—	—	—	15	—	—	—
Crangon septemspinosa	1	—	20	—	—	—	—	—	—	—	—	—
Palaemonetes pugio	15	—	200	—	1100		—	100	—	1	—	167
Rhithropanopeus harrisii	3	—	6	—	4	—	7	—	2	—	—	—

CATCH AND WATER QUALITY COLLECTED AT STATION T4

T4		AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987	JANUARY 1988
WATER QUALITY							
Collection #		0282-0283	0351-0352	0439-0440	0466-0467	0543-0544	0615-0616
Date		8/7/87	9/9/87	10/6/87	11/5/87	12/1/87	1/4/88
Time		1328	1359	1332	1307	1300	1325
Tidal Stage (hr.)		High +5	High +3	High +4	High +4.5	Low +0.5	High +3.5
Average Depth (ft.)		20	20	15	22	20	20
Salinity (o/oo)	surface	8.0	7.0	3.5	5.0	3.0	0.0
	bottom	5.0	9.0	4.5	5.0	3.0	2.0
Temperature(°C)	surface	29.0	25.0	19.0	16.5	12.1	5.7
	bottom	28.0	23.0	18.0	15.3	11.0	3.1
	air	26.0	28.0	18.0	16.0	8.0	4.0
D.O.	surface	3.5	2.8	2.8	3.6	5.4	7.6
	bottom	3.0	2.0	2.2	4.4	5.4	8.2
pH	surface	7.4	7.2	7.3	7.6	7.0	7.0
	bottom	7.3	7.3	7.3	7.5	7.2	7.1
Secchi (cm)		45	60	60	60	70	70
Length of Trawl (#/min)		2/3	2/3	2/3	2/3	2/3	2/3

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Finfish												
Alewife	—	—	—	—	—	—	1	130	—	—	—	—
American eel	—	—	—	—	1	100	4	284-500	—	—	—	—
Atlantic tomcod	—	—	—	—	—	—	1	138	—	—	—	—
Bay anchovy	—	—	1	28	—	—	1	43	1	30	—	—
Mummichog	8	38-82	3	59-69	43	45-86	58	43-104	127	35-104	89	40-88
Invertebrates												
Balanus improvisus	—	—	—	—	—	—	—	—	—	—	50	—
Congeria leucopheata	30	—	—	—	—	—	10	—	—	—	250	—
Crangon septemspinosa	—	—	—	—	—	—	300	—	35	—	—	—
Palaemonetes pugio	10	—	35	—	3700		—	8000	—	140	—	45 —
Rhithropanopeus harrisii	—	—	3	—	—	—	—	—	—	—	1	—

CATCH AND WATER QUALITY COLLECTED AT T4

T4	WINTER 1988 (NOT SAMPLED)	SPRING 1988	SUMMER 1988	FALL 1988
WATER QUALITY				
Collection No.	-- --	0744-0745	0881-0882	0954-0955
Date	-- --	4/28/88	9/19/88	10/28/88
Time	-- --	1302	1145	1220
Tidal stage	-- --	High + 5	Low + 3.0	High + 0
Average Depth (ft.)	-- --	15	15	25
Salinity (o/oo) surface	-- --	4.0	6.0	11.0
bottom	-- --	4.0	9.0	11.0
Temperature (°C) surface	-- --	18.9	23.7	12.5
bottom	-- --	17.5	22.0	12.5
air	-- --	14.0	22.0	13.0
D.O. (ppm) surface	-- --	13.8	4.7	6.6
bottom	-- --	12.1	2.5	6.4
pH surface	-- --	8.3	7.2	7.6
bottom	-- --	8.2	7,1	7.7
Secchi (cm)	-- --	40	70	60
# & Length of tow (min)	-- --	2/3	2/3	2/3

CATCH FINFISH	#	size range	#	size range	#	size range	#	size range
alewife	--	--	--	--	5	111-190	--	--
am. eel	--	--	2	205-235	--	--	--	--
atlantic tomcod	--	--	--	--	--	--	23	143-202
mummichog	--	--	6	55-99	80	52-101	--	--
spot	--	--	--	--	--	--	54	115-152
striped bass	--	--	1	325	--	--	--	--
blueback herring	--	--	--	--	12	111-150	--	--
spot	--	--	--	--	113	114-152	--	--
weakfish	--	--	--	--	2	47-81	5	72-114
Inland silverside	--	--	--	--	1	79	--	--

T4	WINTER 1988 (NOT SAMPLED)		SPRING 1988		SUMMER 1988		FALL 1988	
	#	size range	#	size range	#	size range	#	size range
INVERTEBRATES								
Balanus improvisus	—	—	—	—	22	—	—	—
Congeria leucopheata	—	—	7	—	15	—	—	—
Crangon septemspinosa	—	—	—	10	—	—	—	132
Palaemonetes pugio	—	—	200	—	17,000		3	—
Rhithropanopeus harrisii	—	—	—	—	4	—	—	—
Callinectes sapidus	—	—	2	41-62	4	25-32	5	35-65

Station T4 Shallow

		SPRING 1987	SUMMER 1987	FALL 1987	WINTER 1988 (NOT SAMPLED)
WATER QUALITY					
Collection No.		0165-0167	0378-0380	0589-0591	--
Date		5/28/87	9/15/87	12/10/87	--
Time		1355	1157	1059	--
Tidal stage (hr.)		High + 3	Low + 2	Low + 5	--
Average Depth (ft.)		7	14	15	--
Salinity (o/oo)	surface	6.0	5.0	5.0	--
	bottom	6.0	7.0	5.0	--
Temperature (°C)	surface	21.5	26.0	9.0	--
	bottom	19.5	25.0	8.7	--
	air	29.0	21.0	12.0	--
D.O. (ppm)	surface	4.2	2.9	5.1	--
	bottom	4.2	2.4	5.4	--
pH	surface	7.5	7.4	7.4	--
	bottom	7.5	7.4	7.4	--
Secchi (cm)		80.0	80.0	70.0	--

CATCH		#	m^2	#	m^2	#	m^2	#	m^2
Bivalvia	Congeria leucophaeta	--	--	2	13	2	13	--	--
Gastropoda	Hydrobia totteni	--	--	1142	7613	868	5787	--	--
Polychaeta	Hypaniola florida	3	20	14	93	--	--	--	--
	Laeoneries culveri	1	7	6	40	1	7	--	--
	Neomysis americana	--	--	--	--	3	20	--	--
	Steblospio benedicts	--	--	6	40	1	7	--	--
Oligochaeta		653	4353	693	4620	172	1147	--	--
Copepoda		1	7	--	--	--	--	--	--
Chironomidae		31	207	--	--	--	--	--	--

Station T4 Deep

		SPRING 1987		SUMMER 1987		FALL 1987		WINTER 1988 (NOT SAMPLED)	
WATER QUALITY									
Collection No.		0168-0170		0381-0383		0586-0588		—	
Date		5/28/87		9/15/87		12/10/87		—	
Time		1407		1212		1042		—	
Tidal stage (hr.)		High + 3		Low + 2		Low + 4.5		—	
Average depth (ft.)		30.0		20.0		23.0		—	
Salinity (o/oo)	surface	6.0		5.0		5.0		—	
	bottom	6.0		7.0		5.0		—	
Temperature (°C)	surface	21.5		26.0		9.0		—	
	bottom	19.5		25.0		8.7		—	
	air	29.0		21.00		12.0		—	
D.O. (ppm)	surface	4.2		2.9		5.1		—	
	bottom	4.2		2.4		5.4		—	
pH	surface	7.5		7.4		7.4		—	
Secchi (cm)		80.0		80.0		70.0		—	
CATCH		#	m^2	#	m^2	#	m^2	#	m^2
Bivalvia	Congeria	—	—	—	1	7	—	—	—
	leucophaeta	—	—	—	—	—	—	—	—
Gastropoda	Hydrobia totteni	14	93	583	3887	535	3567	—	—
Polychaeta	Hypaniola florida	1	7	51	340	—	—	—	—
	Streblospio	—	—	—	—	—	—	—	—
	benedicti	—	—	8	53	—	—	—	—
Oligochaeta		203	1353	446	2973	167	1113	—	—
Copepoda	Harpactocoid	1	7	—	—	—	—	—	—
Chironomidae		17	113	—	—	—	—	—	—
Cumacea Leucon	americanus	—	—	—	—	1	7	—	—

CATCH AND WATER QUALITY COLLECTED AT STATION T5

T5		FEBRUARY 1987	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	JULY 1987
WATER QUALITY							
Collection #		0016-0017	0028-0029	0072-0073	0157-0158	0189-0190	0256-0257
Date		2/27/87	3/13/87	4/3/87	5/21/87	6/5/87	7/6/87
Time		1118	1043	1204	1045	1347	1414
Tidal Stage (hr.)		High +2	High +2	Low +5	High +4	Low +3	Low +2
Average Depth (ft.)		20	20	20	15	15	15
Salinity (o/oo)	surface	6.0	0.0	0.0	2.0	6.0	7.0
	bottom	6.0	1.0	1.0	2.0	6.0	8.0
Temperature(°C)	surface	12.0	11.0	16.0	22.5	28.0	29.5
	bottom	8.0	8.0	14.0	21.5	26.5	29.0
	air	6.0	3.0	15.0	19.0	24.0	24.0
D.O.	surface	5.6	11.4	8.4	1.7	3.5	4.1
	bottom	6.8	11.7	7.2	2.0	2.0	3.3
pH	surface	7.4	7.6	7.7	7.5	7.5	7.6
	bottom	7.5	7.6	7.6	7.5	7.5	7.5
Secchi (cm)		60	70	60	80	80	70
Length of Trawl (#/min)		2/3	2/3	2/3	2/3	2/3	2/3

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Finfish												
American eel	1	59	—	—	—	—	—	—	—	—	—	—
Brown bullhead	—	—	—	—	3	105-300	—	—	—	—	—	—
Mummichog	41	46-95	61	48-91	212	41-111	2	75-90	1	48	17	56-90
White perch	—	—	1	103	—	—	—	—	—	—	—	—
Invertebrates												
Balanus improvisus	206	—	200	—	—	—	—	—	—	—	—	—
Congeria leucopheata	305	—	—	—	—	—	—	—	—	—	—	—
Palaemonetes pugio	4	—	2	—	520	—	—	—	—	—	—	—
Rhithropanopeus harrisii	3	—	—	—	1	—	—	—	—	—	—	—

CATCH AND WATER QUALITY COLLECTED AT STATION T5

T5		AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987	JANUARY 1988
WATER QUALITY							
Collection #		0290-0291	0357-0358	0441-0442	0468-0469	0536-0537	0628-0629
Date		8/12/87	9/10/87	10/6/87	11/5/87	12/1/87	1/19/88
Time		1120	1210	1413	1406	1348	1429
Tidal Stage (hr.)		Low +4	High +0	High +4.5	High +5	Low +1	High +5
Average Depth (ft.)		20	15	15	18	20	16
Salinity (o/oo)	surface	5.0	5.5	3.0	3.0	2.0	2.0
	bottom	8.0	7.5	3.5	4.0	1.0	2.0
Temperature(°C)	surface	31.5	29.0	22.0	20.0	13.7	10.1
	bottom	27.5	25.0	19.3	17.5	14.0	11.0
	air	27.0	26.0	18.0	16.0	10.0	7.5
D.O.	surface	1.9	2.4	3.1	3.0	5.8	4.6
	bottom	2.4	1.7	3.5	3.2	6.0	5.2
pH	surface	7.3	7.4	7.5	7.7	7.4	7.2
	bottom	7.4	7.2	7.5	7.7	7.3	7.2
Secchi (cm)		70	70	60	50	60	40
Length of Set (hr.)		2/3	2/3	2/3	2/3	2/3	2/3

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Finfish												
Brown bullhead	—	—	—	—	—	—	—	—	1	300	—	—
Mummichog	—	—	2	60-65	127	36-86	17	39-88	4	53-90	9	33-89
Invertebrates												
Balanus improvisus	10	—	—	—	—	—	—	—	—	—	—	—
Congeria leucopheata	5	—	—	—	—	—	—	—	—	—	—	—
Palaemonetes pugio	—	—	10	—	110	—	335	—	20	—	24	—
Crangon septemspinosa	—	—	—	—	—	—	15	—	—	—	—	—

CATCH AND WATER QUALITY COLLECTED AT T5

T5	WINTER 1988 (NOT SAMPLED)		SPRING 1988		SUMMER 1988		FALL 1988	
WATER QUALITY								
Collection No.	—	—	0746-0747		0879-0880		0952-0953	
Date	—	—	4/28/88		9/19/88		10/28/88	
Time	—	—	1348		1100		1130	
Tidal stage	—	—	High + 5.5		Low + 2.0		Low + 5.0	
Average Depth (ft.)	—	—	12		17		20	
Salinity (o/oo) surface	—	—	4.0		6.0		7.0	
bottom	—	—	4.0		6.0		6.0	
Temperature (°C) surface	—	—	24.2		26.2		12.7	
bottom	—	—	18.9		22.7		12.5	
air	—	—	14.0		28.0		13.0	
D.O. (ppm) surface	—	—	13.2		2.5		5.6	
bottom	—	—	10.2		1.2		5.4	
pH surface	—	—	8.2		6.9		7.9	
bottom	—	—	7.9		6.9		7.7	
Secchi (cm)	—	—	40		50		50	
#/Length of Tow (min)	—	—	2/3		2/3		2/3	
	#	size range	#	size range	#	size range	#	size range
CATCH								
FINFISH								
american eel	—	—	2	300-325	—	—	—	—
mummichog	—	—	11	56-98	2	35-47	1	43
spot	—	—	—	—	—	—	9	120-135
blueback herring	—	—	2	175-196	—	—	—	—
INVERTEBRATES								
Palaemonetes pugio	—	—	5	—	—	—	220	—
Rhithropanopeus harrisii	—	—	—	—	—	—	—	—
Crangon septemspinosa	—	—	15	—	—	—	135	—
Callinectes sapidus	—	—	—	—	1	20	4	27-71

Station T5 Shallow

		SPRING 1987	SUMMER 1987	FALL 1987	WINTER 1988 (NOT SAMPLED)
WATER QUALITY					
Collection No.		0057-0059	0407-0409	0511-0513	
Date		4/1/87	9/21/87	11/23/87	
Time		1100	1452	1131	
Tidal stage (hr.)		High + 0	Low + 0	High + 1.0	
Average depth (ft.)		5	4	8	
Salinity (o/oo)	surface	0.0	4.0	0.0	
	bottom	0.0	—	1.0	
Temperature (°C)	surface	15.0	27.0	6.0	
	bottom	13.0	—	6.0	
	air	8.0	20.0	10.0	
D.O. (ppm)	surface	8.2	2.5	5.8	
	bottom	7.3	—	6.1	
pH	surface	7.6	7.4	7.5	No
	bottom	7.6	—	7.5	
Secchi (cm)		50.0	80.0	50.0	

CATCH		#	#/m²	#	#/m²	#	#/m²
Bivalvia	*Congeria leucophaeta*	—	—	1	7	—	—
Gastropoda	*Hydrobia totteni*	1	7	11	73	12	80
Oligochaeta		16	107	16	107	42	280
Chironomidae		—	—	1	7	11	73

Station T5 Deep

		SPRING 1987	SUMMER 1987	FALL 1987	WINTER 1988
WATER QUALITY					
Collection No.		0060-0061	0404-0406	0508-0510	0633-0635
Date		4/1/87	9/21/87	11/23/87	2/23/88
Time		1120	1445	1113	1135
Tidal stage (hr.)		High + 0	Low + 0	High + 0.5	Low + 3.5
Average Depth (ft.)		15	15	20	20
Salinity (o/oo)	surface	0.0	3.5	0.0	0.0
	bottom	0.0	3.5	1.0	0.0
Temperature (°C)	surface	15.0	22.0	6.0	12.7
	bottom	13.0	22.0	6.0	13.1
	air	8.5	20.0	10.0	11.0
D.O. (ppm)	surface	8.2	2.7	5.8	7.0
	bottom	7.3	3.8	6.1	7.0
pH	surface	7.6	7.4	7.5	7.6
	bottom	7.6	7.5	7.5	7.5
Secchi (cm)		50.0	80.0	50.0	40.0

CATCH		#	m^2	#	m^2	#	m^2	#	m^2
Bivalvia	Congeria leucophaeta	--	--	8	53	--	--	13	130
Gastropoda	Hydrobia totteni	--	--	461	3073	40	267	15	150
Oligochaeta		407	2713	772	5147	141	940	892	8920
Amphipoda	Monoculodes edwardsi	--	--	--	--	--	--	2	13
Chironomidae		--	--	1	7	--	--	4	40
	Balanus improvisus	--	--	--	--	--	--	3	20

CATCH AND WATER QUALITY COLLECTED AT STATION T6

T6		FEBRUARY 1987	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	JULY 1987
WATER QUALITY							
Collection #		0008-0009	0038-0039	0093-0094	0149-0150	0180-0181	0245-0246
Date		2/24/87	3/16/87	4/16/87	5/14/87	6/5/87	7/1/87
Time		1310	1226	1351	1054	1036	1213
Tidal Stage (hr.)		Low +1	High +2	High +2	High	Low	Low +5
Average Depth (ft.)		10	10	20	20	10	15
Salinity (o/oo)	surface	9.0	8.0	0.0	8.0	10.0	14.0
	bottom	9.0	8.0	0.0	10.0	10.0	15.0
Temperature(°C)	surface	5.0	8.0	12.0	18.5	22.5	28.0
	bottom	5.0	8.0	12.0	17.0	22.5	28.0
	air	9.0	13.0	8.5	17.0	24.0	26.0
D.O.	surface	11.2	16.4	8.2	5.4	2.7	2.6
	bottom	11.2	16.4	8.2	5.9	4.1	4.1
pH	surface	7.7	8.5	7.6	7.6	7.6	7.5
	bottom	7.7	8.5	7.6	7.6	7.5	7.5
Secchi (cm)		40	60	80	70	70	60
Length of Trawl (#/min)		2/3	2/3	2/3	2/3	2/3	2/3

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Finfish												
American eel	—	—	—	—	—	—	—	—	7	300-470	—	—
Atlantic tomcod	—	—	—	—	—	—	1	39	—	—	—	—
Mummichog	12	32-70	—	—	1	88	3	90-98	294	53-95	3	78-80
White perch	—	—	—	—	3	180-192	1	215	1	260	—	—
Invertebrates												
Balanus improvisus	112	—	—	—	250	—	10000	—	—	—	650	—
Callinectes sapidus	—	—	—	—	—	—	2	110-159	—	—	—	—
Chironomidae	2	—	—	—	—	—	—	—	—	—	—	—
Corophium sp.	46	—	—	—	—	—	—	—	—	—	—	—
Crangon septemspinosa	20	—	—	—	—	—	2	—	—	—	—	—
Melita nitida	6	—	—	—	—	—	—	—	—	—	—	—

T6

CATCH	FEBRUARY 1987		MARCH 1987		APRIL 1987		MAY 1987		JUNE 1987		JULY 1987	
	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Nereis sp.	—	—	—	—	—	—	—	—	1	—	—	—
Panopeus herbstii	1	—	—	—	—	—	—	—	—	—	—	—
Rhithropanopeus harrisii	18	—	4	—	7	—	7	—	35	—	18	—
Palaemonetes pugio	350	—	—	—	40	—	2	—	190	—	10	—
Uca pugnax	1	—	—	—	—	—	—	—	—	—	—	—
Congeria leucopheata	24	—	—	—	—	—	—	—	—	—	—	—

CATCH AND WATER QUALITY COLLECTED AT STATION T6

T6		AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987	JANUARY 1988
WATER QUALITY							
Collection #		0284-0285	0353-0354	0445-0446	0472-0473	0544-0545	0626-0627
Date		8/11/87	9/10/87	10/8/87	11/10/87	12/3/87	1/19/88
Time		1137	1040	1137	1019	1253	1325
Tidal Stage (hr.)		High +0	Low +5	High + 0	Low +5	High +5	High +4
Average Depth (ft.)		15	15	20	18	13	15
Salinity (o/oo)	surface	14.0	13.0	9.0	5.0	4.0	8.0
	bottom	15.0	13.0	11.0	5.0	4.0	8.0
Temperature(°C)	surface	27.0	25.0	17.0	12.0	7.2	3.8
	bottom	26.5	25.0	17.0	12.0	7.1	4.1
	air	26.0	26.0	17.5	8.0	4.0	7.0
D.O.	surface	2.4	2.4	4.5	6.9	8.8	4.1
	bottom	4.1	2.6	5.5	6.1	8.8	4.1
pH	surface	7.4	7.4	7.5	7.9	7.6	8.6
	bottom	7.3	7.3	7.6	7.8	7.6	9.2
Secchi (cm)		70	50	60	50	60	50
Length of Trawl (#/min)		2/3	2/3	2/3	2/3	2/3	2/3

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Finfish												
American eel	—	—	—	—	—	—	2	390-420	—	—	—	—
Atlantic tomcod	—	—	—	—	—	—	10	149-210	—	—	—	—
Bay anchovy	1	30	—	—	1	47	—	—	—	—	—	—
Blueback herring	—	—	1	132	—	—	—	—	—	—	—	—
Mummichog	20	63-108	8	69-90	16	51-92	—	—	13	35-105	2	43-86
Striped bass	—	—	—	—	1	370	—	—	—	—	—	—
Weakfish	—	—	—	—	1	80	—	—	—	—	—	—
White perch	—	—	1	173	—	—	1	199	—	—	—	—
Invertebrates												
Balanus improvisus	70	—	100	—	8	—	3650	—	50	—	30	—
Callinectes sapidus	3	140-170	—	—	—	—	2	40-49	—	—	—	—
Congeria leucopheata	130	—	40	—	—	—	1050	—	100	—	—	—
Crangon septemspinosa	—	—	—	—	—	—	2	—	—	—	—	—
Ctenophora	—	—	5	—	2	—	—	—	—	—	—	—

T6

CATCH	AUGUST 1987		SEPTEMBER 1987		OCTOBER 1987		NOVEMBER 1987		DECEMBER 1987		JANUARY 1988	
	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Rhithropanopeus harrisii	30	—	33	—	14	—	3	—	--	--	—	--
Palaemonetes pugio	70	—	28	—	4	—	--	—	20	--	75	—

CATCH AND WATER QUALITY COLLECTED AT T6

T6	WINTER 1988 (NOT SAMPLED)	SPRING 1988	SUMMER 1988	FALL 1988
WATER QUALITY				
Collection No.	-- --	0740-0741	0887-0888	0969-0970
Date	-- --	4/28/88	9/20/88	11/9/88
Time	-- --	1044	1056	1325
Tidal stage(hr.)	-- --	High + 3.0	Low + 1.0	High + 4.5
Average Depth (ft.)	-- --	14	14	12
Salinity (o/oo) surface	-- --	10.0	11.0	9.0
bottom	-- --	10.0	12.0	9.0
Temperature (°C)surface	-- --	13.2	22.3	12.0
bottom	-- --	13.6	22.4	12.0
air	-- --	14.0	24.0	10.0
D.O. (ppm) surface	-- --	11.2	5.0	8.4
bottom	-- --	11.4	4.6	8.4
pH surface	-- --	8.3	7.5	8.2
bottom	-- --	8.4	7.5	8.1
Secchi (cm)	-- --	60	50	40
# & Length of tow (min)	-- --	2/3	2/3	2/3

	#	size range	#	size range	#	size range	#	size range
CATCH								
FINFISH								
american eel	--	--	--	--	4	275-495	--	--
atlantic tomcod	--	--	--	--	--	--	15	172-266
mummichog	--	--	--	--	67	49-108	--	--
striped bass	--	--	3	113-135	--	--	6	176-207
weakfish	--	--	--	--	3	74-97	--	--
white perch	--	--	--	--	14	165-268	--	--
spot	--	--	--	--	12	120-157	--	--
Crevalle jack	--	--	--	--	1	79	--	--
INVERTEBRATES								
Balanus improvisus	--	--	--	--	3400	--	--	600
Callinectes sapidus	--	--	3	49-78	5	27-172	13	18-64
Congeria leucopheata	--	--	--	--	100	--	50	--
Ctenophora	--	--	--	--	--	--	2	--
Rhithropanopeus	--	--	2	--	100	--	50	--
harrisii	--	--	--	--	--	--	--	--
Palaemonetes pugio	--	--	7	--	50	--	15	--

Station T6

		SPRING 1987		SUMMER 1987		FALL 1987		WINTER 1988 (NOT SAMPLED)	
WATER QUALITY									
Collection No.		0109-0111		0325-0327		0577-0579		—	
Date		4/22/87		8/26/87		12/8/87		—	
Time		1250		1132		1215		—	
Tidal stage (hr.)		Low + 2		High + 0		High + 3.0		—	
Average Depth (ft.)		10		15		12		—	
Salinity (o/oo)	surface	3.0		15.0		5.0		—	
	bottom	3.0		16.0		7.0		—	
Temperature (°C)	surface	19.5		25.5		8.0		—	
	bottom	19.5		25.0		7.8		—	
	air	21.0		21.0		6.0		—	
D.O. (ppm)	surface	13.0		4.0		8.0		—	
	bottom	13.0		4.1		8.6		—	
pH	surface	8.5		7.5		7.3		—	
	bottom	8.5		7.5		7.3		—	
Secchi (cm)		40.0		75.0		90.0		—	
CATCH		#	m^2	#	m^2	#	m^2	#	m^2
Bivalvia	Congeria leucopheata	—	—	—	—	16	107	—	—
Polychaeta	Boccardia ligerica	—	—	—	—	15	100	—	—
	Polydora socialis	1	7	3	20	8	53	—	—
	Streblospio benedicti	—	—	—	5	33	—	—	—
Oligochaeta		1	7	—	—	34	227	—	—
Amphipoda	Corophium lacustre	35	233	—	—	117	780	—	—
	Edotea trilolba	—	—	—		3	20	—	—
	Melita nitida			1	7	20	133	—	—
Decapoda	Rithropanopeus harrisii	17	113	64	427	40	267	—	—
	Cyathura polita					3	20	—	—
	Balanus improvisus					311	2073	—	—
	Edotea triloloa					3	20	—	—

CATCH AND WATER QUALITY COLLECTED AT STATION Y7

Y7		FEBRUARY 1987	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	JULY 1987
WATER QUALITY							
Collection #		0012-0013	0040-0041	0089-0090	0151-0152	0183-0184	0252-0253
Date		2/25/87	3/16/87	4/16/87	5/14/87	6/5/87	7/6/87
Time		1130	1301	1202	1213	1130	1220
Tidal Stage (hr.)		High +4	High +3	High + 0	High +1	Low +1	Low +1
Average Depth (ft.)		10	12	14	12	12	10
Salinity (o/oo)	surface	5.5	6.0	0.0	5.0	6.0	8.0
	bottom	7.0	6.0	0.0	6.0	8.0	8.0
Temperature(°C)	surface	3.5	7.5	12.5	19.0	23.0	28.0
	bottom	3.0	7.5	12.5	18.0	23.5	27.0
	air	4.0	6.0	8.0	17.0	23.0	24.0
D.O.	surface	5.0	13.2	6.8	5.1	1.6	4.9
	bottom	7.0	13.2	6.8	4.3	1.9	3.9
pH	surface	7.4	8.1	7.5	7.6	7.5	7.8
	bottom	7.4	8.1	7.5	7.6	7.4	7.5
Secchi (cm)		50	60	60	100	50	60
Length of Trawl (#/min)		2/3	2/3	2/3	2/3	2/3	2/3

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Finfish												
Alewife	1	136	—	—	—	—	2	110-124	—	—	—	—
American eel	2	57-64	—	—	1	272	1	405	—	—	—	—
Blueback herring	—	—	—	—	—	—	1	130	—	—	—	—
Bluegill	—	—	—	—	1	135	—	—	—	—	—	—
Golden shiner	1	167	—	—	—	—	—	—	—	—	—	—
Mummichog	56	39-86	49	40-97	—	—	2	83-104	—	—	116	54-89
Invertebrates												
Balanus improvisus	75	—	—	—	—	—	—	—	5	—	—	—
Congeria leucopheata	1	—	—	—	—	—	—	—	—	—	—	—
Crangon septemspinosa	5	—	30	—	—	—	—	—	—	—	—	—
Hypaniola grayi	1	—	—	—	—	—	—	—	—	—	—	—
Macoma balthica	5	—	4	—	—	—	—	—	—	—	—	—
Rhithropanopeus harrisii	37	—	20	—	—	—	14	—	40	—	—	—
Palaemonetes pugio	14	—	190	—	100	—	250	—	10	—	20	—

CATCH AND WATER QUALITY COLLECTED AT STATION T7

T7	AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987	JANUARY 1988
WATER QUALITY						
Collection #	0286-0287	0355-0356	0447-0448	0474-0475	0542-0543	0624-0625
Date	8/11/87	9/10/87	10/8/87	11/10/87	12/3/87	1/19/88
Time	1229	1127	1236	1112	1208	1243
Tidal Stage (hr.)	High +1	Low +5	High +1	Low +5	High +4	High +4
Average Depth (ft.)	15	14	15	15	12	12
Salinity (o/oo) surface	12.0	11.0	8.0	2.0	1.0	4.0
bottom	14.0	11.0	8.0	2.0	1.0	4.5
Temperature(°C) surface	27.0	25.0	17.5	11.0	8.4	2.9
bottom	26.5	25.0	17.5	11.5	8.2	3.1
air	28.0	26.0	13.0	8.2	5.0	7.0
D.O. surface	2.3	2.0	5.7	6.2	3.8	7.1
bottom	3.0	2.0	5.6	6.3	3.8	7.2
pH surface	7.3	7.3	7.7	7.7	7.4	7.6
bottom	7.3	7.4	7.7	7.7	7.2	7.4
Secchi (cm)	90	60	60	60	50	40
Length of Trawl (#/min)	2/3	2/3	2/3	2/3	2/3	2/3

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Finfish												
Alewife	—	—	—	—	—	—	1	114	—	—	—	—
American eel	—	—	—	—	3	121-560	—	—	—	—	—	—
Atlantic tomcod	—	—	—	—	5	109-122	—	—	—	—	—	—
Bay anchovy	—	—	2	23-49	9	23-57	1	69	—	—	—	—
Mummichog	3	33-164	4	55-84	30	53-100	—	—	36	57-88	9	45-84
Weakfish	—	—	—	—	1	64	—	—	—	—	—	—
Invertebrates												
Balanus improvisus	20	—	—	—	—	—	9	—	50	—	—	—
Congeria leucopheata	—	—	—	—	—	—	—	—	70	—	—	—
Crangon septemspinosa	—	—	—	—	247	—	1	—	2	—	1	—
Neomysis americana	—	—	—	—	6	—	—	—	—	—	—	—
Orchestia uhleri	—	—	—	—	2	—	—	—	—	—	—	—
Rhithropanopeus harrisii	—	—	7	—	—	—	—	—	—	—	—	—
Palaemonetes pugio	830	—	2400	—	1217	—	3	—	28	—	2	—

CATCH AND WATER QUALITY COLLECTED AT T7

T7	WINTER 1988 (NOT SAMPLED)		SPRING 1988		SUMMER 1988		FALL 1988	
WATER QUALITY								
Collection No.	—	—	0742-0743		0889-0890		0958-0959	
Date	—	—	4/28/88		9/20/88		10/28/88	
Time	—	—	1201		1150		1351	
Tidal stage	—	—	High + 4		Low + 2.0		High + 1.0	
Average Depth (ft.)	—	—	12		10		16	
Salinity (o/oo) surface	—	—	4.0		8.0		12.0	
bottom	—	—	6.0		8.0		12.0	
Temperature(°C) surface	—	—	13.8		22.2		12.7	
bottom	—	—	13.7		22.3		12.8	
air	—	—	14.0		24.0		13.0	
D.O. (ppm) surface	—	—	14.4		7.6		6.6	
bottom	—	—	13.0		4.6		5.9	
pH surface	—	—	8.7		7.4		8.0	
bottom	—	—	8.5		7.4		7.9	
Secchi (cm)	—	—	40		80		60	
# Length of Tow (min)	—	—	2/3		2/3		2/3	
	#	size range	#	size range	#	size range	#	size range
CATCH								
FINFISH								
alewife	—	—	1	104	22	76-103	—	—
am. eel	—	—	—	—	—	—	—	—
atlantic tomcod	—	—	—	—	—	—	23	146-205
bay anchovy	—	—	—	—	1187	26-82	—	—
blueback herring	—	—	2	157-254	19	96-149	—	—
bluefish	—	—	—	—	1	78	—	—
atlantic silverside	—	—	—	—	25	67-81	—	—
mummichog	—	—	42	50-112	68	44-94	—	—
spot	—	—	—	—	34	116-162	11	121-150
striped bass	—	—	—	—	1	302	—	—
pumpkinseed	—	—	—	—	4	83-112	—	—
weakfish	—	—	—	—	16	50-103	5	71-114
INVERTEBRATES								
Balanus improvisus	—	—	—	—	12	—	—	—
Congeria leucopheata	—	—	—	—	2	—	—	—
Crangon septemspinosa	—	—	60	—	226	—	30	—

T7	WINTER 1988 (NOT SAMPLED)		SPRING 1988		SUMMER 1988		FALL 1988	
	#	size range	#	size range	#	size range	#	size range
Neomysis americana	—	—	—	—	2	—	—	—
Rhithropanopeus harrisii	—	—	4	—	217	—	4	—
Palaemonetes pugio	—	—	65	—	2443	—	—	30
Callinectes sapidus	—	—	3	65-72	15	10-174	11	41-57

Station T7

		SPRING 1987		SUMMER 1987		FALL 1987		WINTER 1988	
WATER QUALITY									
Collection No.		0191-0193		0375-0377		0595-0597		0662-0664	
Date		6/9/87		9/15/87		12/10/87		2/29/88	
Time		1043		1143		1203		1135	
Tidal stage (hr.)		High + 2.0		Low + 2.0		Low + 5.0		High + 4.0	
Average Depth (ft.)		10		10		15		15	
Salinity (o/oo)	surface	8.0		4.0		5.0		2.0	
	bottom	9.0		8.0		6.0		2.0	
Temperature (°C)	surface	24.0		24.0		8.5		5.6	
	bottom	24.0		24.0		8.1		5.4	
	air	21.0		21.0		11.0		5.0	
D.O. (ppm)	surface	2.8		2.2		6.4		9.2	
	bottom	3.8		2.4		6.8		9.0	
pH	surface	7.5		7.4		7.4		7.9	
	bottom	7.5		7.4		7.4		7.8	
Secchi (cm)		80.0		70.0		70.0		60.0	
CATCH			m^2	#	m^2	#	m^2	#	m^2
Bivalvia	Congeria leucophaeta	—	—	2	13	1	7	—	—
	Macoma balthica	1	7	—	—	—	—	—	—
Gastropoda	Hydrobia totteni	2	13	479	3193	1663	11087	473	3153
Polychaeta	Hypaniola florida	17	113	12	80	—	—	—	—
	Streblospio benedicti	—	—	11	73	—	—	—	—
Oligochaeta		—	—	—	—	—	—	—	—
		168	1120	52	347	135	900	187	1247
	Cyathura polita	—	—	—	—	—	—	—	—
Decapoda	Crab zoea	1	7	—	—	—	—	1	7
	Palaemonetes pugio	—	—	—	—	—	—	2	13
	Rithropanopeus harrisii	—	—	—	—	—	—	1	7
Chironomidae		65	433	4	27	—	—	—	—
	Melita nitida	—	—	—	—	—	—	1	7
	Monoculodes edwardsi	—	—	—	—	—	—	2	13

CATCH AND WATER QUALITY COLLECTED AT STATION T8

T8		FEBRUARY 1987 (NOT SAMPLED)	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	JULY 1987
WATER QUALITY							
Collection #		—	0042-0043	0087-0088	0160-0161	0203-0204	0261-0262
Date		—	3/18/87	4/16/87	5/28/87	6/10/87	7/10/87
Time		—	1048	1032	1220	1018	1030
Tidal Stage (hr.)		—	High +0	Low +4	High +1	High +1	High +0
Average Depth (ft.)		—	12	10	10	14	10
Salinity (o/oo)	surface	—	5.0	0.0	5.0	6.0	8.0
	bottom	—	5.0	0.0	6.0	6.0	8.0
Temperature(°C)	surface	—	10.0	13.0	21.0	24.0	29.0
	bottom	—	10.0	13.0	20.5	24.0	29.0
	air	—	14.0	8.5	27.0	18.0	27.5
D.O.	surface	—	12.4	4.6	2.5	3.1	1.4
	bottom	—	12.4	4.6	4.8	4.1	2.9
pH	surface	—	8.1	7.5	7.6	7.5	7.5
	bottom	—	8.1	7.5	7.5	7.5	7.5
Secchi (cm)		—	40	70	90	80	80
# & Length of trawl(#/min)			2/3	2/3	2/3	2/3	2/3

CATCH	MARCH 1987 #	MARCH 1987 size range	APRIL 1987 #	APRIL 1987 size range	MAY 1987 #	MAY 1987 size range	JUNE 1987 #	JUNE 1987 size range	JULY 1987 #	JULY 1987 size range
Finfish										
American eel	1	65		—	—	—	—	—	—	—
Mummichog	22	34-86	30	45-90	13	46-90	37	50-76	5	30-76
Invertebrates										
Balanus improvisus	1015	—	—	—	—	—	95	—	4200	—
Chironomidae	—	—	—	—	—	—	—	—	2	—
Congeria leucopheata	200	—	—	—	10	—	115	—	60	—
Palaemonetes pugio	21	—	—	—	—	—	—	—	—	—

CATCH AND WATER QUALITY COLLECTED AT STATION T8

T8		AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987	JANUARY 1988
WATER QUALITY							
Collection #		0316-0317	0359-0360	0443-0444	0476	0540-0541	0620-0621
Date		8/24/87	9/10/87	10/8/87	11/10/87	12/3/87	11/19/88
Time		1021	1252	1039	1157	1111	1049
Tidal Stage (hr.)		High + 0	High + 0	Low +5.5	Low + 5.5	High + 3	High + 2
Average Depth (ft.)		10	12	15	12	6	10
Salinity (o/oo)	surface	8.0	8.5	3.0	0.0	0.0	7.0
	bottom	8.0	9.0	3.0	0.0	0.0	6.0
Temperature(°C)	surface	25.0	9.0	3.0	0.0	0.0	6.0
	bottom	25.0	25.0	17.0	12.0	9.3	3.5
	air	22.0	27.0	N/A	8.5	3.5	9.0
D.O.	surface	1.7	3.1	5.5	4.4	4.5	6.6
	bottom	2.8	4.2	5.5	4.6	4.2	7.0
pH	surface	7.5	7.4	7.5	7.1	7.2	7.8
	bottom	7.5	7.5	7.6	7.1	7.1	7.3
Secchi (cm)		90	80	50	60	60	40
# & Length of trawl(#min)		2/3	2/3	2/3	1/3	2/3	2/3

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Finfish												
Gizzard shad	--	--	--	--	--	--	11	113-125	1	282	--	--
Mummichog	64	27-82	--	--	--	--	10	47-73	62	33-79	14	34-77
Invertebrates												
Balanus improvisus	1100	--	200	--	150	--	100	--	1150	--	40	--
Congeria leucopheata	600	--	80	--	400	--	300	--	6000	--	450	--
Palaemonetes pugio	--	--	--	--	20	--	--	--	--	--	--	--
Rhithropanopeus harrisii	1	--	--	--	--	--	--	--	--	--	--	--

CATCH AND WATER QUALITY COLLECTED AT T8

T8	WINTER 1988 (NOT SAMPLED)		SPRING 1988		SUMMER 1988		FALL 1988	
WATER QUALITY								
Collection No.	—	—	0748-0749		0885-0886		0977-0978	
Date	—	—	5/3/88		9/19/88		11/29/88	
Time	—	—	1247		1345		1430	
Tidal stage	—	—	High + 1.5		Low + 5.0		High + 0.5	
Average Depth (ft.)	—	—	10		8		10	
Salinity (o/oo) surface	—	—	6.0		8.0		0.0	
bottom	—	—	6.0		7.0		0.0	
Temperature(°C) surface	—	—	15.7		23.1		9.7	
bottom	—	—	15.7		23.2		9.7	
air	—	—	12.0		24.0		7.0	
D.O. (ppm) surface	—	—	11.4		2.2		5.4	
bottom	—	—	11.2		2.0		5.4	
pH surface	—	—	8.2		7.0		8.1	
bottom	—	—	8.2		7.2		8.0	
Secchi (cm)	—	—	50		50		40	
# & Length of Tow (min)	—	—	2/3		2/3		2//	
	#	size range	#	size range	#	size range	#	size range
CATCH								
FINFISH								
mummichog	—	—	13	49-100	11	43-81	661	38-88
spot	—	—	—	—	2	113-126	—	—
INVERTEBRATES								
Balanus improvisus	—	—	160	—	50	—	10,000	
Chironomidae								
Congeria leucopheata	—	—	50	—	20	—	10,000	
Palaemonetes pugio	—	—	1	—	1	—	—	—
Callinectes sapidus	—	—	1	55	—	—	—	—
Ctenophorans	—	—	—	—	1	—	—	—

Station T8

		SPRING 1987	SUMMER 1987	FALL 1987	WINTER 1988
WATER QUALITY					
Collection No.		0162-0164	0392-0394	0592-0594	0656-0658
Date		5/28/87	9/21/87	12/10/87	2/25/88
Time		1317	1335	1125	1228
Tidal stage (hr.)		High + 2.0	High + 4.0	Low + 3.0	Low + 2.0
Average Depth (ft.)		8	5	10	6
Salinity (o/oo)	surface	5.0	4.0	4.0	0.0
	bottom	6.0	4.0	4.0	0.0
Temperature (°C)	surface	21.0	20.0	10.4	8.8
	bottom	20.5	20.0	10.2	8.7
	air	27.0	22.0	12.0	-1.0
D.O. (ppm)	surface	2.5	2.2	4.2	4.2
	bottom	4.8	2.2	4.2	3.8
pH	surface	7.6	7.4	7.3	7.6
	bottom	7.5	7.4	7.3	7.5
Secch (cm)		90.0	90.0	60.0	50.0

CATCH		#	m^2	#	m^2	#	m^2	#	m^2
Bivalvia	Congeria leucophaeta	1	7	2432	16213	2151	14,340	—	—
Gastropoda	Hydrobia totteni	35	233	1090	7267	21803	145,353	—	—
Polychaeta	Hypaniola florida	—	—	16	107	7	47	—	—
	Laeoneries culveri	—	—	3	20	1	7	—	—
	Manayunkia aesturina	1	7	—	—	—	—	—	—
	Polydora socialis	—	—	1114	7427	603	4020	—	—
Oligochaeta		133	887	971	6473	2204	14693	613	4087
Cirripedia	Balanus improvisus	6	40	832	5547	526	3507	—	—
Decapoda	Palaemonetes pugio	—	—	1	7	—	—	—	—
Chironomidae		4	27	39	260	7	47	—	—

CATCH AND WATER QUALITY COLLECTED AT STATION T9

T9		FEBRUARY 1987	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	JULY 1987
WATER QUALITY							
Collection #		0018-0019	0044-0045	0076-0077	0153-0154	0205-0206	0269-0270
Date		2/27/87	3/18/87	4/3/87	5/14/87	6/10/87	7/27/87
Time		1228	1135	1412	1310	1110	1151
Tidal Stage (hr.)		High + 3	High + 1	High +1	High + 2	High + 2	High + 0
Average Depth (ft.)		10	10	10	10	10	10
Salinity (o/oo)	surface	3.5	4.0	0.0	2.0	5.0	7.0
	bottom	3.5	4.0	0.0	3.0	6.0	7.0
Temperature(°C)	surface	7.0	9.5	15.5	19.5	23.0	32.0
	bottom	7.0	9.5	15.5	20.0	23.0	32.0
	air	8.0	11.0	14.0	17.0	18.0	19.0
D.O.	surface	3.6	12.0	7.8	1.4	2.3	3.1
	bottom	3.6	12.0	7.8	2.5	2.8	3.8
pH	surface	7.4	8.2	7.7	7.6	7.5	7.9
	bottom	7.4	8.2	7.7	7.6	7.5	7.9
Secchi (cm)		20	60	70	45	60	80
# & Length of trawl(#/min)		2/3	2/3	2/3	2/3	2/3	2/3
CATCH		# / size range	# / size range	# / size range	# / size range	# / size range	# / size range
Pinfish		2 68-73	— —	— —	— —	— —	— —
American eel		47 35-78	4 39-70	84 39-89	1 55	— —	3 23-26
Mummichog		— —	— —	1 105	— —	— —	— —
Pumpkinseed							
Invertebrates							
Balanus improvisus		25 —	23 —	— —	— —	— —	25 —
Congeria leucophaeta		50 —	— —	— —	— —	— —	3 —

CATCH AND WATER QUALITY COLLECTED AT STATION T9

T9		AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987	JANUARY 1988
WATER QUALITY							
Collection No.		0288-0289	0387-0388	0449-0450	0470-0471	0538-0539	0622-0623
Date		8/11/87	9/21/87	10/8/87	11/9/87	12/3/87	1/19/88
Time		1350	1220	1347	1027	1032	1132
Tidal Stage		High +2	High +3	High +3	Low +5	High +2.5	High +2.5
Avg. Depth (ft.)		10	10	7	10	6	8
Salinity(°/oo)	surface	10.0	2.5	3.8	5.0	0.0	2.0
	bottom	10.0	3.0	3.5	4.0	0.0	2.0
Temp. (°c)	surface	28.0	20.0	17.0	14.0	8.7	4.1
	bottom	27.0	20.0	17.0	14.0	9.1	3.9
	air	28.0	20.0	13.0	16.0	4.0	6.0
D.O. (ppm)	surface	3.9	1.0	2.7	5.9	2.2	4.4
	bottom	2.7	2.2	3.3	3.6	3.6	5.4
pH	surface	7.3	7.4	7.7	7.6	7.3	7.2
	bottom	7.2	7.4	7.7	7.6	7.3	7.2
Secchi (cm)		70	70	50	50	50	50
length of trawl(#/min)		2/3	2/3	2/3	2/3	2/3	2/3

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Finfish												
Gizzard shad	—	—	—	—	—	—	—	—	1	160	—	—
Mummichog	41	30-97	23	30-69	48	35-80	94	38-87	126	30-90	9	24-75
Invertebrates												
Palaemonotes pugio	5	—	—	—	—	—	—	—	—	—	—	—

CATCH AND WATER QUALITY COLLECTED AT T9

T9		WINTER 1988 (NOT SAMPLED)		SPRING 1988		SUMMER 1988		FALL 1988	
WATER QUALITY									
Collection No.		—	—	0749A-0749B		0883-0884		0975-0976	
Date		—	—	5/3/88		9/19/88		11/29/88	
Time		—	—	1335		1257		1330	
Tidal stage		—	—	High + 2		Low + 4.0		Low + 5.0	
Average Depth (ft.)		—	—	6		6		6	
Salinity (o/oo)	surface	—	—	2.0		5.0		2.0	
	bottom	—	—	4.0		6.0		0.0	
Temperature(°C)	surface	—	—	15.0		22.9		9.2	
	bottom	—	—	15.0		21.6		9.0	
	air	—	—	12.0		23.5		7.0	
D.O. (ppm)	surface	—	—	5.6		3.3		4.7	
	bottom	—	—	8.0		1.4		4.8	
pH	surface	—	—	7.4		6.9		8.2	
	bottom	—	—	7.5		7.0		8.0	
Secchi (cm)		—	—	40		60		60	
Length of Tow (min)		—	—	2/3		2/3		2/3	
		#	size range	#	size range	#	size range	#	size range
CATCH									
FINFISH									
mummichog		—	—	23	42-87	11	33-80	703	40-92
INVERTEBRATES									
Palaemonetes pugio		—	—	—	—	1	—	—	—
Callinectes sapidus		—	—	2	42-49	—	—	—	—

Station T9

		SPRING 1987	SUMMER 1987	FALL 1987	WINTER 1988
WATER QUALITY					
Collection No.		0069-0071	0389-0341	0583-0585	0659-0661
Date		4/1/87	9/21/87	12/10/87	2/25/8
Time		1310	1307	1017	1257
Tidal stage (hr.)		High + 0	High + 3.5	Low + 4.0	Low + 2.5
Average depth (ft.)		8	5	10	7
Salinity (o/oo)	surface	0.0	2.5	4.0	0.0
	bottom	0.0	3.0	3.0	0.0
Temperature (°C)	surface	12.0	20.0	12.1	6.4
	bottom	12.0	20.0	12.1	6.5
	air	5.0	20.0	12.0	-1.0
D.O. (ppm)	surface	6.4	1.0	2.2	2.4
	bottom	6.4	2.2	2.8	1.7
pH	surface	7.7	7.4	6.8	7.6
	bottom	7.7	7.4	7.1	7.5
Secchi (cm)		60.0	70.0	60.0	50.0

CATCH		#	m^2	#	m^2	#	m^2	#	m^2
Gastropoda	Melampus bidentatus	1	7	--	--	--	--	--	--
	Hydrobia totteni	--	--	--	--	3	20	--	--
Oligochaeta		5	33	NO	--	1	7	22	4466
		--	--	CATCH		--	--	--	--
Tabanidae		--	--	--	--	--	--	1	7
Coleoptera		--	--	--	--	--	--	2	13

CATCH AND WATER QUALITY COLLECTED AT STATION TN1

TN1		MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	JULY 1987	JULY 1987
WATER QUALITY							
Collection #		0048	0078	0122	0215	0258	0268
Date		3/23/87	4/8/87	5/7/87	6/18/87	7/9/87	7/21/87
Time		1035	1118	1145	1106	1330	1234
Tidal Stage (hr.)		Low +0	Low +0	Low +0	Low +1	Low +0	High +5
Average Depth (ft.)		4	3	2	5	3	4
Salinity (o/oo)	surface	10.0	0.0	6.0	13.0	15.0	12.0
	bottom	10.0	0.0	--	--	--	--
Temperature(°C)	surface	10.0	11.5	15.0	31.5	31.0	37.0
	bottom	10.0	11.5	--	--	--	--
	air	15.5	12.0	--	25.5	28.0	29.0
D.O.	surface	14.8	7.2	8.0	4.1	2.5	2.0
	bottom	14.8	7.2	--	--	--	--
pH	surface	8.5	7.5	7.7	7.5	7.5	7.7
	bottom	8.5	7.5	--	--	--	--
Secchi (cm)		60	90	60	60	70	80
Length of Set (hr.)		24.0	24.0	24.5	25.0	22.0	23.0

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
FinFish												
American eel	--	--	4	390-560	--	--	--	--	--	--	--	--
Atlantic silverside	--	--	--	--	2	113-127	--	--	--	--	--	--
Black crappie	--	--	1	128	--	--	--	--	--	--	--	--
Blueback herring	--	--	--	--	1	242	--	--	--	--	--	--
Bluegill	--	--	1	125	--	--	--	--	--	--	--	--
Carp	--	--	2	402-434	2	460-565	--	--	--	--	--	--
Mummichog	1	110	2	100-108	1	84	58	69-100	13	88-162	1	77
Pumpkinseed	--	--	4	55-97	2	100-107	--	--	--	--	--	--
Striped killifish	--	--	--	--	--	--	--	--	--	--	--	--
White perch	3	215-320	5	147-270	--	--	--	--	--	--	--	--

CATCH AND WATER QUALITY COLLECTED AT STATION TN1

TN1	MARCH 1987		APRIL 1987		MAY 1987		JUNE 1987		JULY 1987		JULY 1987	
CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Invertebrates												
Bryozoa	--	--	--	--	--	--	--	--	1000	--	--	--
Callinectes sapidus	--	--	--	--	--	--	2	170	--	--	--	--
Crangon septemspinosa	--	--	--	--	--	--	--	--	--	--	--	--
Palaemonetes pugio	--	--	--	--	--	--	--	--	25	--	2	--
Rhithropanopeus harrisii	--	--	2	--	--	--	--	--	6	--	7	--
Reptile												
Diamond Back Terrapin	--	--	--	--	7	--	11	--	1	--	--	--

CATCH AND WATER QUALITY COLLECTED AT STATION TN1

TN1	AUGUST 1987		SEPTEMBER 1987		OCTOBER 1987		NOVEMBER 1987		DECEMBER 1987 (NOT SAMPLED)		JANUARY 1988 (NOT SAMPLED)	
Invertebrates												
Crangon septemspinosa	--	--	--	--	3	--	--	--	--	--	--	--
Palaemonetes pugio	--	--	--	--	--	--	10	--	--	--	--	--
Rhithropanopeus harrisii	--	--	--	--	2	--	--	--	--	--	--	--
Reptile												
Diamond Back Terrapin	--	--	4	--	--	--	--	--	--	--	--	--

TNI

		Winter 1988	Spring 1988	Summer 1988	Fall 1988
WATER QUALITY					
Collection No.		0699	0752	0870	0933
Date		3/15/88	5/10/88	8/8/88	10/20/88
Time		1350	1050	1255	1215
Tidal stage		Low + 0.5	Low + 0	Low + 0	Low + 1.5
Depth at low water (ft.)		4	4	3	5
Salinity (o/oo)	surface	6.0	9.0	15.0	13.0
	bottom	—	—	—	—
Temperature (°C)	surface	7.0	15.6	39.0	24.0
	bottom	—	—	—	—
	air	5.0	15.0	32.0	10.0
D.O. (ppm)	surface	10.8	10.4	4.0	8.8
	bottom	—	—	—	—
pH	surface	8.1	7.6	7.2	8.2
	bottom	—	—	—	—
Secchi (cm)		50	60	80	50
Length of set (hr.)		—	24	—	24

CATCH

FINFISH

	#	size range	#	size range	#	size range	#	size range
Alewife	—	—	7	—	—	—	4	99-135
American eel	—	—	3	495-560	—	—	—	—
American shad	—	—	1	133	—	—	—	—
Atlantic silverside	—	—	1	118	2	52-77	—	—
Blueback herring	—	—	7	200-256	—	—	—	—
Bluefish	—	—	—	—	—	—	5	102-144
Crevalle jack	—	—	—	—	—	—	69	—
mummichog	4	49-88	—	—	59	73-118	—	—
northern pipefish	—	—	1	185	—	—	—	—
pumpkinseed	—	—	1	83	1	65	—	—
striped bass	—	—	4	112-340	—	—	—	—
weakfish	—	—	—	—	—	—	7	100-182
white perch	—	—	8	149-305	—	—	1	304
winter flounder	—	—	1	166	—	—	—	—
spotted hake	—	—	8	115-150	—	—	—	—

TN1	Winter 1988		Spring 1988		Summer 1988		Fall 1988	
CATCH FINFISH	#	size range	#	size range	#	size range	#	size range
INVERTEBRATES								
Callinectes sapidus	—	—	6	59-110	38	83-185	9	30-85
REPTILE								
Diamond backed terrapin	--	—	1	—	3	—	--	—

Station TN 1

		SPRING 1987		SUMMER 1987		FALL 1987		WINTER 1988	
WATER QUALITY									
Collection No.		0134-0136		0298-0300		0568-0570		0692-0694	
Date		5/11/87		8/13/87		12/8/87		3/8/88	
Time		1231		1155		1129		1203	
Tidal stage (hr.)		High + 4		Low + 5		High + 1.0		High + 0	
Average Depth (ft.)		5		10		10		7	
Salinity (o/oo)	surface	8.0		17.0		8.0		10.0	
	bottom	—		—		8.0		10.0	
Temperature (°C)	surface	23.0		25.0		7.3		6.1	
	bottom	—		—		6.6		5.8	
	air	22.0		23.0		6.0		6.0	
D.O. (ppm)	surface	4.8		2.8		9.0		10.6	
	bottom	—		—		9.5		10.4	
pH	surface	7.6		7.3		7.4		7.7	
	bottom	—		—		7.5		7.7	
Secchi (cm)		70.0		70.0		80.0		90.0	
CATCH		#	m^2	#	m^2	#	m^2	#	m^2
Nemertea		—	—	2	13	3	20	—	—
Bivalvia	Congeria leucophaeta	—	—	2	13	—	—	—	—
	Mulinia lateralis	—	—	—	—	1	7	—	—
	Mya arenaria	—	—	—	—	3	20	—	—
	Macoma balthica	7	47	—	—	—	—	—	—
Nematoda		4	27	—	—	—	—	—	—
Polychaeta	Hypaniola florida	—	—	2	13	—	—	—	—
	Laeoneries culveri	—	—	49	327	1	7	—	—
	Nereis succinea	7	47	—	—	5	33	6	—
	Streblospio benedicti	4	27	13	87	63	420	193	1287
	Boccardia ligerica	—	—	—	—	27	180	—	—
	Eteone heteropoda	—	—	—	—	—	—	1	7
Oligochaeta		333	2220	14	93	28	187	59	393
Copepoda	Harpactocoid	1	7	—	—	—	—	—	—
Isopoda	Cyathura polita	2	13	15	100	11	73	2	13
	Edotea triloba	3	20	—	—	3	20	—	—
Decapoda	Rithropanopeus harrisii	6	40	1	7	5	33	—	—

TNI		SPRING 1987		SUMMER 1987		FALL 1987		WINTER 1988	
CATCH		#	m^2	#	m^2	#	m^2	#	m^2
Chironomidae		3	20	--	--	--	--	1	7
Mysidacea	Neomysis americana	--	--	--	--	3	20	--	--
	Polydora socialis	--	--	--	--	--	--	14	93
Cumacea	Leucon americanus	--	--	--	--	3	20	7	47
	Mulinia lateralis	--	--	--	--	1	7	--	--
	Mya arenaria	--	--	--	--	3	20	--	--

CATCH AND WATER QUALITY COLLECTED AT STATION TN2

TN2		MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	JULY 1987	AUGUST 1987
WATER QUALITY							
Collection #		0049	0079	0121	0214	0263	0308
Date		3/25/87	4/8/87	5/7/87	6/18/87	7/14/87	8/17/87
Time		1055	1205	1130	1048	0820	1100
Tidal Stage (hr.)		High + 5	Low + 1	Low + 0	Low + 0	Low + 2	Low + 0
Average Depth (ft.)		3	4	4	5	5	7
Salinity (o/oo)	surface	8.0	0.0	6.0	12.0	10.0	10.0
	bottom	8.0	0.0	--	--	--	--
Temperature(°C)	surface	11.5	12.0	17.0	25.5	23.0	30.0
	bottom	11.5	12.0	--	--	--	--
	air	17.0	11.0	--	27.0	21.0	28.5
D.O.	surface	13.4	9.1	8.8	5.1	3.2	8.6
	bottom	13.4	9.1	--	--	--	--
pH	surface	8.6	7.8	8.0	7.6	7.6	8.0
	bottom	8.6	7.8	--	--	--	--
Secchi (cm)		60	50	60	60	60	30
Length of Set (hr.)		24	24	24.5	24	25	24

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
FinFish												
American eel	1	560	20	320-530	2	470-540	10	485-620	1	570	--	--
black crappie	--	--	4	120-162	--	--	--	--	--	--	--	--
bluegill	--	--	1	117	--	--	--	--	--	--	--	--
carp	--	--	7	440-560	11	420-590	1	457	--	--	--	--
mummichog	48	70-109	350	52-110	37	71-105	69	67-135	60	86-95	11	72-96
pumpkinseed	--	--	5	57-85	1	81	1	80	--	--	--	--
striped killifish	1	101	--	--	--	--	--	--	--	--	--	--
white perch	6	103-247	18	106-270	23	100-280	42	107-300	3	212-250	26	112-290
Invertebrates												
Callinectes sapidus	--	--	--	--	--	--	1	152	--	--	10	146-187
Palaemonetes pugio	--	--	--	--	--	--	--	--	20	--	--	--
Rhithro pangreus harrisii	--	--	--	--	--	--	--	--	--	--	20	--
Reptile												
Diamond Back terrapin	--	--	--	--	--	--	--	--	2	--	3	--

TN2	SPRING 1987		SUMMER 1987		FALL 1987		WINTER 1988 (NOT SAMPLED)
CATCH	#	m^2	#	m^2	#	m^2	
Chironomidae	18	120	20	133	23	153	
Tabanidae	1	7	--	--	--	--	
Holothurian	--	--	--	--	241	1607	

CATCH AND WATER QUALITY COLLECTED AT STATION TN2

TN2		SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987 (Not Sampled)
WATER QUALITY					
Collection #		0344	0456	0502	
Date		9/3/87	10/19/87	11/19/87	
Time		1235	1420	1340	
Tidal Stage (hr.)		Low + 2	Low + 1	Low + 0	
Average Depth (ft.)		5	4	3	
Salinity (o/oo)	surface	10.5	10.0	7.0	
	bottom				
Temperature(°C)	surface	23.0	18.0	12.0	
	bottom				
	air		16.0	10.0	
D.O. (ppm)	surface	10.0	15.5	6.8	
	bottom				
pH	surface	8.1	8.7	7.5	
	bottom				
Secchi (cm)		30	40	60	
Length of Set (hr.)		24.5	23.5	23.5	

CATCH

FinFish	#	size range	#	size range	#	size range
Alewife	--	--	--	--	1	80
American eel	1	560	--	--	--	--
Gizzard shad	1	106	--	--	--	--
Mummichoga	10	70-96	57	40-104	6	32-93
Spot	--	--	1	139	--	--
Striped killifish	--	--	2	90-97	--	--
White perch	1	134	11	174-247	7	252
Invertebrates						
Callinectes sapidus	2	180-181	1	72	--	--

TN2	Winter 1988	Spring 1988	Summer 1988	Fall 1988
WATER QUALITY				
Collection No.	0698	0753	0863	0932
Date	3/15/88	5/10/88	7/19/88	10/20/88
Time	1335	1142	0945	1125
Tidal stage	Low + 0	Low + 0	Low + 2	Low + 1.5
Depth at low water (ft.)	3	4	3	5
Salinity (o/oo) surface	4.0	8.0	10.0	12.0
bottom	—	—	—	—
Temperature (°C) surface	6.5	16.1	26.7	12.9
bottom	—	—	—	—
air	4.0	15.0	25.0	10.0
D.O. (ppm) surface	13.2	11.2	1.8	13.0
bottom	—	—	—	—
pH surface	8.5	7.7	7.3	8.7
bottom	—	—	—	—
Secchi (cm)	50	30	60	—
Length of set (hr.)	24	23.5	24.5	23.5

CATCH
FINFISH

	#	size range	#	size range	#	size range	#	size range
Windowpane	—	—	—	—	—	—	1	120
Am. Eel	—	—	2	360-395	2	432-580	5	550-630
Striped bass	—	—	—	—	—	—	3	385-575
blueback herring	—	—	—	—	—	—	24	
carp	—	—	1	610	—	—	—	—
winter flounder	—	—	—	—	—	—	2	98-150
mummichog	290	39-113	1	90	47	72-108	39	57-92
pumpkinseed	—	—	—	—	6	69-87	—	—
spot	—	—	—	—	—	—	16	110-131
striped killifish	8	80-119	—	—	—	—	40	86-140
white perch	1	156	4	165-225	8	173-275	16	195-275

	Winter 1988		Spring 1988		Summer 1988		Fall 1988	
TN2	#	size range	#	size range	#	size range	#	size range
INVERTEBRATES								
Callinectes sapidus	--	--	3	33-60	30	95-146	3	50-190
Palaemonetes pugio	--	--	--	--	--	--	25	--
crangon septemspinosa	1	--	--	--	--	--	--	--
REPTILES								
Diamond backed terrapin	--	--	--	--	13	--	--	--

Station TN 2

		SPRING 1987	SUMMER 1987	FALL 1987	WINTER 1988 (NOT SAMPLED)
WATER QUALITY					
Collection No.		0112-0114	0328-0330	0580-0582	—
Date		4/22/87	8/26/87	12/8/87	—
Time		1305	1150	1240	—
Tidal stage (hr.)		Low + 2.0	High + 1.0	High + 3.0	—
Average Depth (ft.)		3	10	8	—
Salinity (o/oo)	surface	3.0	13.0	5.0	—
	bottom	3.0	13.5	5.0	—
Temperature (°C)	surface	19.5	25.5	7.9	—
	bottom	19.5	25.5	7.9	—
	air	21.0	21.0	7.0	—
D.O. (ppm)	surface	13.0	3.6	8.2	—
	bottom	13	4.3	8.4	—
pH	surface	8.5	7.5	7.5	—
	bottom	8.4	7.5	7.5	—
Secchi (cm)		40.0	60.0	80.0	—

CATCH		#	#/m²	#	#/m²	#	#/m²	#	#/m²
Anthozoa	Actinaria	—	—	48	320	—	—	—	—
Bivalvia	Macoma balthica	6	40	2	13	—	—	—	—
Gastropoda	Hydrobia totteni	55	367	—	—	1	7	—	—
Polychaeta	Hypaniola florida	10	70	105	700	55	367	—	—
	Laeoneries culveri	19	127	92	613	55	367	—	—
	Streblospio benedicti	—	—	5	33	91	607	—	—
Oligochaeta		463	3087	90	600	459	3060	—	—
Isopoda	Cyathura polita	—	—	10	67	2	13	—	—
	Edotea triloba	—	—	—	—	12	80	—	—
Amphipoda	Corophium lacustre	2	13	—	—	12	8	—	—
	Melita nitida	—	—	—	—	1	7	—	—
Decapoda	Palaemonetes pugio	—	—	1	7	—	—	—	—
	Rithropanopeus harrisii	—	—	9	60	—	—		

CATCH AND WATER QUALITY COLLECTED AT STATION TN3

TN3	MARCH 1987 (NOT SAMPLED)	APRIL 1987	MAY 1987	JUNE 1987	JULY 1987	AUGUST 1987
WATER QUALITY						
Collection #		0116	0120	0213	0251	0307
Date		4/29/87	5/7/87	6/18/87	7/6/87	8/17/87
Time		1530	1045	1023	1200	1040
Tidal Stage (hr.)		High +4	Low +0	Low +0	Low +0	Low+0
Average Depth (ft.)		2	3	4	4	3
Salinity (o/oo) surface		1.0	4.0	10.0	8.0	7.5
bottom		1.0	--	--	--	--
Temperature(°C) surface		14.0	17.0	27.0	27.0	30.0
bottom		14.0	--	--	--	--
air		14.0	--	27.0	20.0	28.5
D.O. surface		9.6	9.0	5.3	2.7	4.2
bottom		9.6	--	--	--	--
pH surface		7.8	7.7	7.6	7.5	7.5
bottom		7.8	--	--	--	--
Secchi (cm)		60	50	60	70	60
Length of Set (hr.)		23.5	24.5	24.0	23.5	24.0

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
FinFish												
Alewife	--	--	--	--	1	249	2	100-120	--	--	--	--
American eel	--	--	--	--	1	450	6	280-540	--	--	--	--
Atlantic menhaden	--	--	--	--	--	--	2	220-230	--	--	--	--
Blueback herring	--	--	--	--	161	90-117	--	--	--	--	3	121-137
Brown bullhead	--	--	2	320-335	--	--	4	260-305	--	--	--	--
Carp	--	--	--	--	2	505-530	3	485-560	--	--	--	--
Crevalle jack	--	--	--	--	--	--	--	--	--	--	2	46
Mummichog	--	--	70	61-105	37	76-126	98	78-115	121	72-101	6	44-83
Pumpkinseed	--	--	1	90	1	90	4	77-102	15	77-96	7	64-87
Striped bass	--	--	--	--	--	--	3	111-157	--	--	--	--
Green sunfish	--	--	--	--	--	--	1	81	3	79-80	--	--
White perch	--	--	2	216-255	34	133-308	49	110-297	5	121-200	26	115-200
Invertebrates												
Callinectes sapidus	--	--	--	--	--	--	5	130-205	--	--	7	140-181
Rhithropanopeus harrisii	--	--	--	--	--	--	--	--	--	--	--	--
Reptile												
Diamond Back Terrapin	--	--	--	--	13	--	3	--	--	--	--	--

CATCH AND WATER QUALITY COLLECTED AT STATION TN3

TN3		SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987 (Not Sampled)
WATER QUALITY					
Collection #		0340	0451	0483	
Date		9//2/87	10/14/87	11/16/87	
Time		1200	0952	1135	
Tidal Stage (hr.)		Low +1	Low +0.5	Low +0	
Average Depth (ft.)		5	3	4	
Salinity (o/oo)	surface	7.0	4.0	4.0	
	bottom	--	--	--	
Temperature(°C)	surface	23.5	17.0	14.0	
	bottom	--	--	--	
	air	17.0	17.0	14.0	
D.O. (ppm)	surface	3.2	5.8	3.6	
	bottom	--	--	--	
pH	surface	7.5	7.8	8.7	
	bottom	--	--	--	
Secchi (cm)		65	70	80	
Length of Set (hr.)		23	24	24.5	

CATCH	#	size range	#	size range	#	size range
FinFish						
Alewife	--	--	3	97-116	--	--
American shad	--	--	--	--	2	121-225
Blueback herring	15	127-145	1	130	--	--
Carp	--	--	1	505	1	512
Crevalle jack	1	50	--	--	--	--
Mummichog	107	67-105	20	53-102	249	46-105
Pumpkinseed	24	81-109	7	80-115	7	89-122
Striped bass	--	--	--	--	1	312
Green sunfish	2	90-98	--	--	1	89
White perch	2	135-140	11	136-250	5	108-290
Invertebrates						
Callinectes sapidus	4	151-172	--	--	2	36-40
Rhithropanopeus harrisii	--	--	--	--	6	--
Reptile						
Diamond Back Terrapin	2	--	2	--	--	--

TN3		Winter 1988	Spring 1988	Spring 1988	Spring 1988	Summer 1988	Fall 1988
WATER QUALITY							
Collection No.		0697	0755	0758	0797	0871	0931
Date		3/15/88	5/11/88	5/24/88	6/13/88	8/8/88	10/20/88
Time		1305	1225	1020	1540	1415	1030
Tidal stage (hr.)		Low + 0	Low + 0	Low + 0	Low + 0	Low + 1	Low + 0.5
Average Depth (ft.)		4	5	4	5	2	3
Salinity (o/oo)	surface	2.0	6.0	2.0	5.0	8.0	9.0
	bottom	—	—	—	—	—	—
Temperature (°C)	surface	9.1	19.1	20.9	25.1	31.9	16.0
	bottom	—	—	—	—	—	—
	air	6.5	18.0	13.0	—	32.0	10.0
D.O. (ppm)	surface	7.4	10.4	2.4	9.4	7.1	9.0
	bottom	—	—	—	—	—	—
pH	surface	7.8	7.9	7.3	8.1	7.5	7.9
	bottom	—	—	—	—	—	—
Secchi (cm)		60	60	80	50	80	50
Length of set (hr.)		24	24	24	23.5	24	23

CATCH
FINFISH

	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Alewife	—	—	1	110	—	—	—	—	—	—	7	112-134
American eel	—	—	—	—	2	360-490	1	370	—	—	—	—
American shad	—	—	—	—	—	—	—	—	—	—	42	—
Atlantic tomcod	—	—	—	—	—	—	—	—	—	—	7	162-207
blueback herring	—	—	1	112	—	—	—	—	—	—	1	272
brown bullhead	—	—	1	35	5	245-300	—	—	—	—	—	—
carp	—	—	—	—	2	570-750	—	—	1	555	—	—
crevalle jack	—	—	—	—	—	—	—	—	1	52	—	—
green sunfish	—	—	—	—	1	112	—	—	—	—	1	98
mummichog	7	76-100	1	97	5	80-105	—	—	40	75-93	59	72-111
pumpkinseed	—	—	—	—	—	—	—	—	1	78	8	73-130
striped bass	—	—	1	490	1	100	4	115-132	—	—	2	200-297
striped killifish	—	—	3	—	—	—	—	—	—	—	1	98
spot	—	—	—	—	—	—	—	—	1	131	5	110-140
white perch	1	109	2	111-245	14	130-280	—	—	1	153	6	163-267
winter flounder	—	—	—	—	—	—	—	—	—	—	1	147
yellow bullhead	—	—	—	—	1	—	—	—	—	—	—	—

	Winter 1988		Spring 1988		Spring 1988		Spring 1988		Summer 1988		Fall 1988	
TN3	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
INVERTEBRATES												
Callinectes sapidus	--	--	4	62-76	--	--	1	112	2	108-151	--	--
Rhitropanopeus harrisii	35	--	4	--	--	--	--	--	--	--	--	--
Palaemonetes pugio	10	--	6	--	--	--	--	--	--	--	--	--
REPTILES												
Diamondback terrapin	--	--	--	--	--	--	--	--	1	--	1	190

Station TN 3

		SPRING 1987		SUMMER 1987		FALL 1987		WINTER 1988	
WATER QUALITY									
Collection No.		0207-0209		0298-0300		0493-0495		0674-0676	
Date		6/15/87		8/13/87		11/16/87		2/29/88	
Time		1146		1155		1254		1251	
Tidal stage (hr.)		Low + 5		Low + 5		Low + 1		High + 5.5	
Average Depth (ft.)		7		10		5		3	
Salinity (o/oo)	surface	11.0		17.0		5.0		2.0	
	bottom	—		—		5.0		2.0	
Temperature (°C)	surface	26.5		25.0		10.0		6.7	
	bottom	—		—		10.0		6.1	
	air	33.0		23.0		—		5.0	
D.O. (ppm)	surface	3.7		2.8		4.2		8.2	
	bottom	--		—		5.2		9.6	
pH	surface	7.6		7.3		8.8		7.7	
	bottom	—		—		9.0		7.6	
Secchi (cm)		60.0		70.0		70.0		70.0	
CATCH		#	m^2	#	m^2	#	m^2	#	m^2
Bivalvia	Macoma balthica	1	7	--	--	--	--	--	--
Gastropoda	Hydrobia totteni	8	53	113	753	8	53	12	80
Polychaete	Hypaniola florida	7	47	--	--	--	--	--	--
	Laeonerius culveri	—	—	41	273	1	7	--	--
	Streblospio benedicti	--	--	—	--	1	7	--	--
Oligochaeta		39	260	56	373	166	1107	251	1673
Amphipoda	Gammarus mucronatus	1	7	--	--	—	—	--	--
	Rithropanopeus harrisii	—	—	—	—	1	7	--	--
	Palaemonetes pugio	—	--	—	--	3	20	—	—
Chironomidae		43	287	—	--	1	7	--	--
Echinodermata	Holothurian	—	—	—	—	7	47	--	--

CATCH AND WATER QUALITY COLLECTED AT STATION TN4

TN4		MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	JUNE 1987	JULY 1987
WATER QUALITY							
Collection #		0047	0082	0119	0202	0232	0250
Date		3/18/87	4/9/87	5/5/87	6/9/87	6/23/87	7/6/87
Time		1337	1445	1140	1320	1515	1130
Tidal Stage (hr.)		High +2	Low +2	Low +1	High +5	Low +1	Low +0
Average Depth (ft.)		3	2	3	5	3	3
Salinity (o/oo)	surface	5.0	0.0	0.0	6.0	7.0	6.0
	bottom	5.0	0.0	0.0	--	--	--
Temperature(°C)	surface	13.0	13.5	16.0	25.5	30.0	28.5
	bottom	13.0	13.5	16.0	--	--	--
	air	14.0	21.0	14.0	18.0	--	20.0
D.O.	surface	12.0	5.8	8.2	5.4	3.9	1.9
	bottom	12.0	5.8	8.2	--	--	--
pH	surface	7.9	7.5	7.7	7.5	7.5	7.5
	bottom	7.9	7.5	7.7	--	--	--
Secchi (cm)		50	60	50	45	90	70
Length of Set (hr.)		24.5	24.0	24.0	24.0	24.0	23.5

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
FinFish												
American eel	--	--	4	410-500	4	330-540	--	--	--	--	1	540
Black crappie	--	--	--	--	1	190	--	---	--	--	--	--
Blueback herring	1	166	--	--	1	105	--	--	--	--	--	--
Brown bullhead	2	308-335	6	265-340	15	230-355	1	338	1	330	5	272-330
Carp	--	--	1	590	8	300-560	--	--	--	--	--	--
Mummichog	106	38-102	910	68-105	160	70-94	25	46-76	4165	111-130	680	75-105
Pumpkinseed	--	--	5	80-120	3	78-125	--	--	--	--	3	76-93
White perch	--	--	11	132-230	34	130-285	1	112	1	110	5	120-186
Invertebrates												
Laeoneries sp.	1	--	--	--	--	--	--	--	--	--	--	--
Rhithropanopeus harrisii	--	--	--	--	--	--	--	--	--	--	1	--

CATCH AND WATER QUALITY COLLECTED AT STATION TN4

TN4		AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987 (NOT SAMPLED)	JANUARY 1988 (NOT SAMPLED)
WATER QUALITY							
Collection #		0274	0337	0452	0482	--	--
Date		8/14/87	9/1/87	10/14/87	11/16/87	--	--
Time		1107	1100	1006	1120	--	--
Tidal Stage (hr.)		Low +0	Low +2	Low +0.5	Low +0	--	--
Average Depth (ft.)		4	4	2	4	--	--
Salinity (o/oo)	surface	10.0	5.5	2.0	3.0	--	--
	bottom	--	--	--	--	--	--
Temperature(°C)	surface	31.0	23.5	17.0	12.3	--	--
	bottom	--	--	--	--	--	--
	air	27.5	18.0	17.0	14.3	--	--
D.O. (ppm)	surface	2.6	2.3	3.8	2.8	--	--
	bottom	--	--	--	--	--	--
pH	surface	7.3	7.5	7.6	8.6	--	--
	bottom	--	--	--	--	--	--
Secchi (cm)		70	70	70	50	--	--
Length of Set (hr.)		27.0	24.5	24.5	24.0	--	--

CATCH	#	size range	#	size range	#	size range	#	size range
FinFish								
Alewife	--	--	5	120-145	--	--	--	--
American eel	--	--	1	530	1	535	--	--
Blueback herring	--	--	--	--	1	124	--	--
Brown bullhead	2	235-280	--	--	--	--	2	328-350
Mummichog	221	66-111	1250	55-105	96	69-109	178	73-103
Pumpkinseed	6	87-92	2	95-105	1	101	--	--
Striped killifish	--	--	2	99-104	--	--	--	--
White perch	--	--	2	150-190	--	--	--	--
Invertebrates								
(None)	--	--	--	--	--	--	--	--
Reptile								
Diamond Back Terrapin	--	--	1	--	--	--	--	--

TN4		Winter 1988	Spring 1988	Summer 1988	Fall 1988
WATER QUALITY TN 4					
Collection No.		0700	0754	0872	0928
Date		3/15/88	5/10/88	8/9/88	10/19/88
Time		1415	1215	1355	945
Tidal stage		Low + 1.0	Low + 0	Low + 0	Low + 2.0
Depth at low water (ft.)		3	6	6	4
Salinity (o/oo)	surface	0.0	4.0	5.0	7.0
	bottom	—	—	—	—
Temperature (°C)	surface	11.5	20.7	34.6	17.5
	bottom	—	—	—	—
	air	5.0	16.0	30.0	13.0
D.O. (ppm)	surface	4.8	8.4	4.0	5.9
	bottom	—	—	—	—
pH	surface	7.6	7.5	7.3	7.5
	bottom	—	—	—	—
Secchi (cm)		60	50	75	60
Length of set (hr.)		24	24	23.5	23

CATCH

FINFISH

	#	size range	#	size range	#	size range	#	size range
Atlantic tomcod	—	—	—	—	—	—	1	163
blueback herring	1	—	—	—	—	—	30	—
brown bullhead	1	325	—	—	—	—	1	362
mummichog	18	76-90	22	47-88	12	78-114	18	71-90
spot	—	—	—	—	—	—	2	120-131
weakfish	—	—	—	—	—	—	2	84-85
white catfish	—	—	—	—	—	—	1	360
white perch	—	—	8	165-240	—	—	1	225
INVERTEBRATES								
palaemonetes pugio	—	—	1	—	—	—	—	—
hydrobia totteni	—	—	—	—	10,000	—	—	—
callinectes sapidus	—	—	1	42	8	119-159	7	36-50
REPTILES								
(NONE)								

Station TN 4

		SPRING 1987	SUMMER 1987	FALL 1987	WINTER 1988 (NOT SAMPLED)
WATER QUALITY					
Collection No.		0066-0067	0384-0386	0520-0522	
Date		4/1/87	9/15/87	11/23/88	
Time		1220	1223	1237	
Tidal stage (hr.)		High + 0	Low + 2	High +2.0	
Average Depth (ft.)		5	5	6	
Salinity (o/oo)	surface	0.0	5.0	4.0	
	bottom	0.0	7.0	4.0	
Temperature (°C)	surface	14.0	26.0	7.0	
	bottom	14.0	25.0	7.0	
	air	5.0	21.0	9.0	
D.O. (ppm)	surface	6.8	2.4	7.0	
	bottom	6.8	2.4	7.2	
pH	surface	7.7	7.4	7.4	
	bottom	7.7	7.4	7.6	
Secchi (cm)		—	100.00	40.0	

CATCH		#	m^2	#	m^2	#	m^2
Bivalvia	Congeria leucophaeta	1	7	--	--	--	—
Gastropoda	Hydrobia totteni	11	73	528	3520	36	240
Polychaeta	Hypaniola florida	--	—	3	20	--	--
	Steblospio benedicti	—	—	6	40	—	—
Oligochaeta		3	20	153	1020	256	1707
Decapoda							
	Neomysis americana	—	—	—	—	1	7
	Palaemonetes pugio	—	—	--	—	1	7
Chironomidae		1	7	10	67	8	53

CATCH AND WATER QUALITY COLLECTED AT STATION TN5

TN5		MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	JULY 1987	AUGUST 1987
WATER QUALITY							
Collection #		0046	0080	0118	0201	0264	0273
Date		3/18/87	4/8/87	5/5/87	6/9/87	7/14/87	8/4/87
Time		1315	1302	1128	1300	0845	1055
Tidal Stage (hr.)		High +2	Low +1	Low +1	High +5	Low +2	Low +0
Average Depth (ft.)		3	2	3	4	4	5
Salinity (o/oo)	surface	6.0	0.0	0.0	4.0	8.0	7.0
	bottom	6.0	0.0	0.0	--	--	--
Temperature(°C)	surface	14.0	13.0	18.0	27.0	29.5	33.0
	bottom	14.0	13.0	18.0	--	--	--
	air	16.0	11.0	16.0	18.0	24.0	27.5
D.O.	surface	10.6	7.6	6.8	4.0	1.5	2.9
	bottom	10.6	7.6	6.8	--	--	--
pH	surface	7.7	7.5	7.8	7.5	7.5	7.2
	bottom	7.7	7.5	7.8	--	--	--
Secchi (cm)		50	70	50	60	70	70
Length of Set (hr.)		24	24	24	24	28.5	24

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
FinFish												
Alewife	--	--	1	127	--	--	--	--	--	--	--	--
American eel	--	--	2	450-520	--	--	--	--	--	--	--	--
Black crappie	--	--	--	--	--	--	3	128-187	--	--	--	--
Blueback herring	--	--	--	--	--	--	3	245-270	--	--	--	--
Brown bullhead	24	220-345	--	--	14	280-350	9	196-330	1	325	2	289-300
Carp	3	483-590	--	--	9	360-800	3	335-580	2	385-575	2	368-570
Golden shiner	--	--	--	--	1	--	--	--	--	--	--	--
Mummichog	14	69-87	80	68-96	6	49-92	312	61-101	5	71-84	60	43-88
Pumpkinseed	--	--	7	55-102	--	--	6	68-75	--	--	1	87
Green sunfish	--	--	--	--	--	--	--	--	--	--	1	110
White perch	--	--	5	125-226	1	180	3	151-237	--	--	--	--
Invertebrates												
Palaemonetes pugio	--	--	--	--	10	--	--	--	--	--	--	--
Reptile												
Snapping turtle	--	--	--	--	--	--	2	--	2	--	--	--

CATCH AND WATER QUALITY COLLECTED AT STATION TN5

TN5		SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987 (NOT SAMPLED)	JANUARY 1988 (NOT SAMPLED)
WATER QUALITY						
Collection #		0338	0453	0481	--	--
Date		9/1/87	10/14/87	11/16/87	--	--
Time		1115	1012	1110	--	--
Tidal Stage (hr.)		Low +2	Low +0.5	High +5	--	--
Average Depth (ft.)		4	3	5	--	--
Salinity (o/oo)	surface	5.0	2.0	2.0	--	--
	bottom	--	--	--	--	--
Temperature(°C)	surface	24.5	20.0	11.9	--	--
	bottom	--	--	--	--	--
	air	18.0	18.0	17.0	--	--
D.O. (ppm)	surface	3.5	4.2	3.8	--	--
	bottom	--	--	--	--	--
pH	surface	7.4	7.6	--	--	--
	bottom	--	--	--	--	--
Secchi (cm)		70	80	70	--	--
Length of Set (hr.)			24	24	--	--

CATCH	#	size range	#	size range	#	size range
FinFish						
Alewife	--	--	4	101-209	--	--
Blueback herring	--	--	11	100-125	--	--
Brown bullhead	5	99-389	6	295-343	11	285-335
Carp	3	410-510	--	--	--	--
Gizzard shad	3	90-170	--	--	--	--
Mummichog	17	70-105	85	67-87	36	63-86
Pumpkinseed	--	--	9	61-91	--	--
White perch	3	136-164	--	--	--	--
Invertebrates						
(None)						

TMS		Winter 1988	Spring 1988	Summer 1988	Fall 1988
WATER QUALITY					
Collection No.		0649	0738	0862	0929
Date		2/25/88	4/26/88	7/19/88	10/9/88
Time		1120	1315	0900	1023
Tidal stage		Low + 1	Low + 0	Low + 1	Low + 2
Depth at low water (ft.)		6	3	1	3
Salinity (o/oo)	surface	0.0	4.0	9.0	6.0
	bottom	—	—	—	—
Temperature (°C)	surface	12.5	21.1	31.9	19.8
	bottom	—	—	—	—
	air	-1.0	18.0	25.0	6.0
D.O. (ppm)	surface	6.8	14.0	2.0	6.0
	bottom	—	—	—	—
pH	surface	7.8	8.3	7.0	7.8
	bottom	—	—	—	—
Secchi (cm)		50	40	75	60
Length of set (hr.)		23.5	23.5	29.5	23.5

CATCH
FINFISH

	#	size range	#	size range	#	size range	#	size range
blueback herring	—	—	6	92-180	—	—	2	110-141
brown bullhead	3	265-311	40	179-365	—	—	3	305-356
carp	—	—	3	435-490	—	—	—	—
gizzard shad	—	—	—	—	1	84	—	—
mummichog	18	66-90	12	83-94	37	74-96	3	70-84
pumpkinseed	4	71-135	—	—	—	—	—	—
spot	—	—	—	—	—	—	2	114-134
white perch	—	—	24	121-260	—	—	—	—
weakfish	—	—	—	—	—	—	1	90

TN5	Winter 1988		Spring 1988		Summer 1988		Fall 1988	
CATCH FINFISH								
	#	size range	#	size range	#	size range	#	size range
INVERTEBRATES								
calinestes sapidus	—	—	6	40-99	3	99-147	1	50
rhithropanopeus harrisii	1	—	--	--	--	--	--	--
REPTILES								
E. painted turtle	—	—	--	—	2	—	—	--

Station TN 5

		SPRING 1987	SUMMER 1987	FALL 1987	WINTER 1988
WATER QUALITY					
Collection No.		0054-0056	0401-0403	0514-0516	0669-0671
Date		3/30/87	9/21/87	11/23/87	2/23/88
Time		1305	1431	1147	1205
Tidal stage (hr.)		High + 3	High + 5	High +1.0	Low + 4.0
Average Depth (ft.)		—	3	5	6
Salinity (o/oo)	surface	3.0	2.0	0.0	0.0
	bottom	3.0	—	1.0	0.0
Temperature (°C)	surface	16.5	21.0	6.0	9.2
	bottom	16.5	—	6.0	8.9
	air	15.0	20.0	10.0	11.0
D.O. (ppm)	surface	9.0	3.0	5.8	7.2
	bottom	9.0	—	6.1	6.9
pH	surface	7.6	7.5	7.5	7.5
	bottom	7.6	—	7.5	7.5
Secchi (cm)		60.0	70.0	50.0	50.0

CATCH	#	m^2	#	m^2	#	m^2	#	m^2
Gastropoda Hydrobia totteni	—	—	35	233	2	13	1	7
Oligochaeta	4	27	33	220	35	233	85	567
Chironomidae	—	—	11	73	4	27	—	—
Culicidae Chaoborus sp.	—	—	—	—	1	7	—	—

CATCH AND WATER QUALITY COLLECTED AT STATION TN6

TN6		MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	JULY 1987	AUGUST 1987
WATER QUALITY							
Collection #		0050	0081	0117	0200	0249	0272
Date		3/25/87	4/8/87	5/5/87	6/9/87	7/6/87	8/4/87
Time		1150	1321	1114	1245	1100	1030
Tidal Stage (hr.)		Low +0	Low +1	Low +1	High +5	High +5	Low +0
Average Depth (ft.)		4	3	3	5	4	5
Salinity (o/oo)	surface	4.0	0.0	0.0	5.0	5.0	7.0
	bottom	--	0.0	0.0	--	--	--
Temperature(°C)	surface	15.5	13.0	14.0	25.0	29.0	31.0
	bottom	--	13.0	14.0	--	--	--
	air	15.5	19.0	15.0	24.0	20.5	27.5
D.O.	surface	6.4	9.8	7.8	4.1	1.8	1.3
	bottom	--	9.8	7.8	--	--	--
pH	surface	7.6	7.7	7.8	7.5	7.5	7.2
	bottom	--	7.7	7.8	--	--	--
Secchi (cm)		40	60	50	60	50	70
Length of Set (hr.)		24	24	24	24	23.5	24

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
FinFish												
American eel	--	--	--	--	1	380	--	--	--	--	--	--
Blueback herring	--	--	--	--	--	--	1	135	--	--	--	--
Brown bullhead	31	235-350	3	210-337	15	195-345	--	--	16	156-340	2	68-84
Carp	--	--	--	--	1	525	--	--	--	--	--	--
Golden shiner	--	--	1	216	4	109-187	--	--	--	--	--	--
Mummichog	178	56-115	90	70-102	6	80-100	175	62-105	47	75-95	424	70-93
Pumpkinseed	1	96	1	92	--	--	1	109	--	--	1	115
Striped bass	--	--	--	--	--	--	--	--	2	125-136	--	--
White perch	1	205	1	117	8	85-235	10	122-235	13	125-188	--	--
Yellow perch	--	--	--	--	2	180-205	--	--	--	--	--	--
Invertebrates												
Rhithropanopeus harrisi	1	--	--	--	--	--	--	--	--	--	--	--

CATCH AND WATER QUALITY COLLECTED AT STATION TN6

TN6		SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987 (NOT SAMPLED)	DECEMBER 1987 (NOT SAMPLED)	JANUARY 1988 (NOT SAMPLED)
WATER QUALITY						
Collection #		0339	0454	0480	--	--
Date		9/1/87	10/14/87	11/16/87	--	--
Time		1137	1023	1050	--	--
Tidal Stage (hr.)		Low +2	Low +1	High +5	--	--
Average Depth (ft.)		4	3	4	--	--
Salinity (o/oo)	surface	4.0	2.0	2.0	--	--
	bottom	--	--	--	--	--
Temperature(°C)	surface	22.0	16.0	10.0	--	--
	bottom	--	--	--	--	--
	air	18.0	19.5	17.0	--	--
D.O. (ppm)	surface	5.2	4.5	4.4	--	--
	bottom	--	--	--	--	--
pH	surface	7.5	7.7	9.0	--	--
	bottom	--	--	--	--	--
Secchi (cm)		50	60	50	--	--
Length of Set (hr.)		23.0	25	24	--	--

CATCH	#	size range	#	size range	#	size range
FinFish						
Brown bullhead	4	107-310	16	215-335	2	145-320
Carp	1	375	1	465	--	--
Gizzard shad	14	83-150	--	--	--	--
Mummichog	53	47-96	17	73-90	46	70-85
Pumpkinseed	2	114-130	2	94-101	--	--
White perch	47	95-233	14	113-200	22	67-205
Invertebrates						
(None)						

TN6		Winter 1988	Spring 1988	Summer 1988	Fall 1988
WATER QUALITY TN 6					
Collection No.		0648	0738	0873	0930
Date		2/25/88	4/26/88	8/9/88	10/19/88
Time		1100	1330	1415	1047
Tidal stage		Low + 0.5	Low + 0.5	Low + 0	Low + 2.5
Depth at low water (ft.)		5	5	3	4
Salinity (o/oo)	surface	0	4	4	5
	bottom	—	--	—	--
Temperature (°C)	surface	6.6	17.6	32.8	17.1
	bottom	—	--	--	--
	air	-1.0	18.0	30.0	9.0
D.O. (ppm)	surface	9.2	14.4	5.7	7.8
	bottom	--	--	--	—
pH	surface	7.7	8.4	7.2	7.9
	bottom	--	--	--	--
Secchi (cm)		90	40	55	60
Length of set (hr.)		23.5	24.0	24	--

CATCH

FINFISH

	#	size range	#	size range	#	size range	#	size range
american eel	--	--	2	510--520	--	—	--	—
blueback herring	—	—	1	137	--	--	2	162-264
brown bullhead	19	107-358	74	105-364	—	--	56	200-370
carp	--	--	2	495-600	--	—	2	167-550
alewife	—	—	--	—	--	--	4	110-186
mummichog	321	47-95	6	76-84	245	75-100	63	79-99
pumpkinseed	1	76	—	--	--	--	--	--
spot	--	--	--	--	--	--	19	120-150
white perch	3	151-260	58	115-340	--	--	26	86-309
green sunfish	1	97	--	—	--	—	2	72-110
INVERTEBRATES								
callinectes sapidus	--	—	—	—	2	155-156	—	—
cambarus diogenes	--	--	—	--	--	--	1	120

Station TN 6

		SPRING 1987	SUMMER 1987	FALL 1987	WINTER 1988 (NOT SAMPLED)
WATER QUALITY					
Collection No.		0051-0053	0401-0403	0505-0507	
Date		3/30/87	9/21/87	11/23/87	
Time		1215	1431	1045	
Tidal stage (hr.)		High + 2	High + 5	High + 0	
Average Depth (ft.)		6	3	5	
Salinity (o/oo)	surface	4.0	2.0	0.0	
	bottom	4.0	—	1.0	
Temperature (°C)	surface	16.5	21.0	7.0	
	bottom	16.5	—	6.0	
	air	17.0	20.0	10.0	
D.O. (ppm)	surface	7.2	3.0	5.0	
	bottom	7.2	—	6.4	
pH	surface	7.5	7.5	8.2	
	bottom	7.5	—	7.6	
Secchi (cm)		40.0	70.0	40.0	

CATCH	#	m^2	#	m^2	#	m^2
Bivalvia Congeria leucophaeta	—	—	—	—	1	7
Gastropoda Hydrobia totteni	—	—	66	440	28	187
Oligochaeta	49	327	199	1,327	197	1313
Chironomidae	—	—	3	20	3	20

CATCH AND WATER QUALITY COLLECTED AT STATION TN7

TN7		AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987 (NOT SAMPLED)	NOVEMBER 1987
WATER QUALITY					
Collection #		0275	0341	--	0500
Date		8/4/87	9/2/87	--	11/17/87
Time		1155	1215	--	1300
Tidal Stage (hr.)		Low + 1	Low + 1	--	Low + 0
Depth at low water (FT)		6	6	--	--
Salinity (o/oo)	surface	9.0	5.0	--	4.0
	bottom	--	--	--	--
Temperature(°C)	surface	28.0	21.5	--	14.0
	bottom	--	--	--	--
	air	27.5	17.0	--	16.0
D.O.	surface	2.2	3.8	--	0.8
	bottom	--	--	--	--
pH	surface	7.3	7.6	--	--
	bottom	--	--	--	--
Secchi (cm)		50	40	--	40
Length of Set (hr.)		24	23	--	24.5

CATCH	#	size range	#	size range	#	size range	#	size range
FinFish								
American eel	1	430	--	--	--	--	--	--
goldfish	--	--	1	70	--	--	--	--
mummichog	82	70-97	15	39-85	--	--	300	65-98
pumpkinseed	4	74-91	1	76	--	--	1	117
Green sunfish	--	--	1	84	--	--	3	82-92
white perch	1	112	--	--	--	--	--	--
Invertebrates								
Rhithropanopeus harrisi	1	--	--	--	--	--	--	--

TN7		Winter 1988 (NOT SAMPLED)	Spring 1988	Spring 1988	Spring 1988	Spring 1988
WATER QUALITY						
Collection No.		—	0729	0756	0759	0796
Date		—	3/29/88	5/11/88	5/24/88	6/13/88
Time		--	1300	1300	1050	1520
Tidal stage (hr.)		--	Low + 0	Low + 0.5	Low + 0	Low + 0
Depth at low water (ft.)		—	3.5	4	4	4
Salinity (o/oo)	surface	—	2.0	4.0	0.0	5.0
	bottom	—	—	—	--	4.5
Temperature (°C)	surface	--	12.4	17.7	20.5	25.6
	bottom	—	--	--	--	25.1
	air	--	--	18.0	13.0	--
D.O. (ppm)	surface	—	13.0	14.4	2.6	10.8
	bottom	--	--	--	--	9.8
pH	surface	—	8.4	8.2	7.1	8.4
	bottom	—	--	--	--	8.1
Secchi (cm)		—	60	50	80	40
Length of set (hr.)		----	24	23.5	24	24

CATCH

FINFISH

	#	size range	#	size range	#	size range	#	size range	#	size range
american eel	—	--	—	—	1	520	--	--	--	--
mummichog	--	--	9	—	5	83-107	15	56-105	1	95
pumpkinseed	—	—	2	58-65	2	59-130	—	--	--	--
Green sunfish	--	--	2	63-80	--	--	--	--	--	--
white perch	—	—	2	150-235	13	142-259	—	—	3	155-257
brown bullhead	—	—	1	265	1	290	3	260-287	--	--
striped killifish	—	—	1	95	--	—	—	—	--	--
carp	--	--	--	--	--	--	—	--	1	325
striped bass	--	--	—	—	--	—	—	--	1	123
blueback herring	—	--	1	250	--	--	--	--	--	--
INVERTEBRATES										
Callinectes sapidus	--	--	--	—	1	72	2	65-112	3	82-103
Palaemonetes pugio	—	--	--	—	20	--	--	--	--	--
Uca minax	—	--	--	--	--	—	1	--	--	--
Rhithropanopeu harrisi	—	—	--	--	3	—	--	--	--	—

CATCH AND WATER QUALITY COLLECTED AT STATION TN8

TN8		AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987 (NOT SAMPLED)	NOVEMBER 1987
WATER QUALITY					
Collection #		0313	0342	--	0499
Date		8/18/87	9/3/87	--	11/17/87
Time		1215	1155	--	1240
Tidal Stage (hr.)		Low + 0	Low + 1	--	Low + 0
Depth at low water (FT)		5	4	--	3
Salinity (o/oo)	surface	5.0	3.0	--	2.0
	bottom	--	--	--	--
Temperature(°C)	surface	27.5	21.5	--	14.0
	bottom	--	--	--	--
	air	26.0	--	--	16.0
D.O.	surface	11.2	7.9	--	2.2
	bottom	--	--	--	--
pH	surface	7.8	7.5	--	8.9
	bottom				
Secchi (cm)		40	40		50
Length of Set (hr.)		24	24		24.5

CATCH	#	size range	#	size range	#	size range	#	size range
FinFish								
brown bullhead	1	270	--	--	--	--	--	--
goldfish	1	79	2	85-95	--	--	--	--
mummichog	101	69-84	43	33-100	--	--	3	--
pumpkinseed	4	80-93	6	77-92	--	--	--	--
Green sunfish	1	90	5	90-102	--	--	--	--
white perch	5	139-222						
Invertebrates								
(None)								

TN8		Winter 1988 (NOT SAMPLED)	Spring 1988	Spring 1988	Spring 1988	Spring 1988
WATER QUALITY						
Collection No.		—	0730	0757	0760	0795
Date		—	3/29/88	5/11/88	5/24/88	6/13/88
Time		—	1320	1315	1110	1500
Tidal stage		—	Low + 0	Low + 0.5	Low + 0	Low
Depth at low water (ft.)		—	5	4	5	5
Salinity (o/oo)	surface	—	0.0	2.0	0.0	4.0
	bottom	—	—	—	—	—
Temperature (°C)	surface	—	12.9	18.0	19.5	26.8
	bottom	—	—	—	—	—
	air	—	—	25.0	13.0	—
D.O. (ppm)	surface	—	11.2	11.0	2.9	10.4
	bottom	—	—	—	—	—
pH	surface	—	8.2	7.7	7.0	8.2
	bottom	—	—	—	—	—
Secchi (cm)		——	60	50	40	50
Length of set (hr.)		——	——	24	24.5	24

CATCH

FINFISH

	#	size range	#	size range	#	size range	#	size range	#	size range
brown bullhead	—	—	—	—	8	158-320	7	270-310	—	—
mummichog	—	—	3	—	1	83	2	82-84	2	95-96
pumpkinseed	—	—	—	—	1	65	1	90	—	—
green sunfish	—	—	—	—	4	91-106	—	—	—	—
white perch	—	—	—	—	31	146-275	6	151-253	39	164-268
blueback herring	—	—	—	—	3	177-255	—	—	1	—
carp	—	—	—	—	1	400	1	440	1	400
american eel	—	—	—	—	—	—	2	59-460	—	—
striped bass	—	—	—	—	—	—	—	—	1	104
INVERTEBRATES										
Callinectes sapidus	—	—	—	—	1	96	1	82	—	—

CATCH AND WATER QUALITY COLLECTED AT STATION CM1

CM1		FEBRUARY 1987	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	JULY 1987
WATER QUALITY							
Collection No.		0002	0023	0098	0130	0176	0267
Date		2/5/87	3/5/87	4/21/87	5/11/87	6/3/87	7/20/87
Time		1000	1108	1104	1158	1310	1230
Tidal Stage (hr.)		Low +1	Low +4	Low +1	High +3	Low +4	Low +1
Average Depth (ft.)		—	40	40	40	40	30
Salinity (o/oo)	surface	—	7.0	4.0	10.0	15.0	12.0
	bottom	—	7.6	4.0	18.0	23.0	14.0
Temperature(°C)	surface	4.0	7.0	17.0	18.0	23.0	31.0
	bottom	4.0	6.0	16.5	18.0	22.0	30.0
	air	4.5	5.0	21.0	26.0	18.0	29.0
D.O.	surface	9.4	10.8	7.3	5.0	6.6	2.3
	bottom	9.3	9.8	7.7	5.6	6.1	3.4
pH	surface	7.5	7.7	7.7	7.5	7.6	—
	bottom	7.5	8.0	7.7	7.6	7.6	—
Secchi (cm)		115	70	80	70	50	95
Length of Set (hr.)		23.5	24	24	24	25	24

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
FinFish												
Atlantic menhaden	—	—	—	—	—	—	2	272	16	220-294	3	145-275
Atlantic tomcod	2	171-195	—	—	1	194	1	168	—	—	—	—
Blueback herring	—	—	—	—	—	—	2	191-200	—	—	—	—
White perch	—	—	—	—	—	—	—	—	—	—	1	245
Invertebrates												
Amphipoda	—	—	15	—	—	—	—	—	—	—	—	—
Balanus improvisus	—	—	200	—	—	—	—	—	—	—	—	—
Bryozoa	—	—	—	—	—	—	—	—	—	—	100,000	
Callinectes sapidus	—	—	—	—	—	—	—	—	1	150	1	175
Congeria leucphaeta	—	—	1	—	—	—	—	—	—	—	—	—
Molgula sp.	—	—	—	—	—	—	—	—	—	—	2	—
Nereis succinea	—	—	2	—	—	—	—	—	—	—	—	—
Rhithropanopeus harrisii	—	—	17	—	—	—	—	—	—	—	200	—

CATCH AND WATER QUALITY COLLECTED AT STATION GN1

GN1	AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987	JANUARY 1987 (NOT SAMPLED)
WATER QUALITY						
Collection No.	0315	0363	0457	0479	0605	—
Date	8/19/87	9/14/87	10/19/87	11/12/87	12/16/87	—
Time	1130	1100	1515	1100	1115	—
Tidal Stage (hr.)	High + 5	Low + 2	Low + 1.5	Low + 4	Low + 0	—
Average Depth (ft.)	40	30	30	40	40	—
Salinity (o/oo) surface	14.0	10.0	10.0	8.0	4.0	—
bottom	14.5	12.0	10.0	8.0	4.0	—
Temperature(°C) surface	30.0	25.0	18.0	11.5	7.6	—
bottom	20.9	25.0	18.0	11.2	7.6	—
air	28.0	21.0	16.0	10.0	4.0	—
D.O. (ppm) surface	3.6	3.0	8.8	8.4	8.8	—
bottom	3.9	3.3	8.6	8.1	9.2	—
pH surface	7.5	7.5	7.9	—	7.7	—
bottom	7.5	7.5	7.9	—	7.7	—
Secchi (cm)	70	110	45	80	50	—
Length of Set (hr.)	24	23.5	24	24.5	24	—

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
FinFish												
Alewife	—	—	—	—	—	—	1	285	—	—	—	—
Atlantic menhaden	11	248-280	—	—	—	—	—	—	—	—	—	—
Atlantic tomcod	—	—	—	—	7	150-170	33	144-185	8	172-183	—	—
Bluefish	—	—	—	—	1	183	—	—	—	—	—	—
White perch	1	210	—	—	—	—	—	—	—	—	—	—
Invertebrates												
Balanus improvisus	—	—	—	—	—	—	—	—	50	—	—	—
Bryozoa	100,000	—	150,000		100,000		—	—	—	—	—	—
Callinectes sapidus	11	107-195	4	175-194	1	70	—	—	—	—	—	—
Rhithropanopeus harrisii	200	—	150	—	—	—	—	—	12	—	—	—

CATCH AND WATER QUALITY COLLECTED AT GN1

GN1		Winter 1988	Spring 1988	Summer 1988	Fall 1988
WATER QUALITY					
Collection No.		0696	0751	0875	0961
Date		3/9/88	5/9/88	8/22/88	11/4/88
Time		1025	1130	1100	1045
Tidal stage (hr.)		Low + 4.5	Low + 1	Low + 0.5	Low + 0
Average Depth (ft.)		30	32	30	40
Salinity (o/oo)	surface	5.5	8.0	15.0	12.0
	bottom	6.0	8.0	16.0	12.0
Temperature (°C)	surface	6.8	15.6	26.2	11.4
	bottom	6.5	15.6	26.3	11.5
	air	5.0	15.0	21.0	12.0
D.O. (ppm)	surface	11.0	11.0	3.1	7.0
	bottom	10.9	10.6	2.7	7.0
pH	surface	7.8	8.2	6.9	8.0
	bottom	7.8	8.2	6.8	8.1
Secchi (cm)		80	70	90	80
Length of set (hr.)		24	23.5	24	24

CATCH

FINFISH

	#	size range	#	size range	#	size range	#	size range
Atlantic menhaden	--	—	1	368	2	230-277	--	—
Atlantic tomcod	1	197	1	215	—	—	10	160-190
blueback herring	—	—	1	177	—	—	—	—
striped bass	—	—	—	—	1	—	1	450
spot	—	—	—	—	3	120-130	10	121-132
INVERTEBRATES								
Amphipoda	—	—	—	—	—	—	5	—
Bryozoa	--	—	--	—	500,000		—	--
Callinectes sapidus	--	—	—	—	21	112-178	1	95
Rhithropanopeus harrissii	--	—	—	—	800	—	5	--
Palaemonetes pugio	—	—	--	—	—	—	20	--

Station GN 1

		SPRING 1987	SUMMER 1987	FALL 1987	WINTER 1988
WATER QUALITY					
Collection No.		0100-0102	0292-0294	0562-0564	0707-0703
Date		4/22/87	8/13/87	12/8/87	3/24/88
Time		1130	1110	1051	1121
Tidal stage (hr.)		Low + 0	Low + 4	High + 0	Low + 3
Average Depth (ft.)		—	20	20	20
Salinity (o/oo)	surface	4.0	15.0	7.0	10.0
	bottom	4.0	16.0	9.0	12.0
Temperature (°C)	surface	17.0	25.5	6.5	7.1
	bottom	16.5	25.5	6.7	6.9
	air	21.0	28.0	5.0	—
D.O. (ppm)	surface	7.3	3.1	9.8	11.4
	bottom	7.7	3.5	9.8	11.2
pH	surface	7.7	7.4	7.7	8.3
	bottom	7.7	7.4	7.7	8.2
Secchi (cm)		80.0	60.0	80.0	70.0

CATCH		#	#/m²	#	#/m²	#	#/m²	#	#/m²
Bivalvia	Macoma Balthica	3	20	36	240	3	20	—	—
	Mulinia lateralis	—	—	—	—	—	—	—	—
	Mya Arenaria	1	7	—	—	3	20	—	—
Polychaeta	Eteone heteropoda	—	—	1	7	1	7	—	—
	Marenzellaria viridis	4	27	—	—	—	—	—	—
	Nereis succinea	1	7	—	—	—	—	3	20
	Streblospio benedicti	28	187	39	260	292	1947	2	13
	Polydora sp.	—	—	—	—	1	7	—	—
Oligochaeta		4	27	4	27	255	1700	7	47
Gastropoda	Eupleura caudata	—	—	—	—	—	—	1	7
Cirripedia	Balanus improvisus	6	40	—	—	—	—	3	20
Isopoda	Cyathura polita	—	—	2	13	4	27	2	13
Amphipoda	Melita dentata	1	7	—	—	—	—	—	—
	Monoculoides edwardsia	1	7	—	—	—	—	—	—
	Edotea triloba	—	—	—	—	—	—	2	13

GN1

CATCH		SPRING 1987		SUMMER 1987		FALL 1987		WINTER 1988	
		#	m^2	#	m^2	#	m^2	#	m^2
Decapoda	Palaemonetes pugio	--	--	1	7	--	--	2	13
	Rithropanopeus harrisii	3	20	9	60	3	20	6	40
	Crangon septemspinosa	--	--	--	--	1	7	--	--
	Callinectes sapidus	--	--	--	--	--	--	1	7
Cumaea	Leucon americana	--	--	--	--	2	13	2	13
	Glycera dibranchiata	--	--	--	--	1	7	--	--
Nemertea		--	--	--	--	1	7	--	--
	Mulinia lateralis	--	--	--	--	1	7	--	--

CATCH AND WATER QUALITY COLLECTED AT STATION GM2

GM2		AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987	JANUARY 1988 (Not Sampled)
WATER QUALITY							
Collection #		0314	0362	0455	0478	0604	—
Date		8/19/87	9/14/87	10/15/87	11/12/87	12/16/87	—
Time		1050	1045	1020	1045	1045	—
Tidal Stage (hr.)		High + 4	Low + 2	High + 5	Low +3.5	High + 5.5	—
Average Depth (ft.)		20	15	20	25	15	—
Salinity (o/oo)	surface	9.5	6.0	6.0	4.0	2.0	—
	bottom	10.5	8.0	6.0	4.0	2.0	—
Temperature (C)	surface	29.0	25.0	16.0	8.5	7.3	—
	bottom	29.0	24.0	16.0	8.2	7.4	—
	air	28.0	21.0	14.0	10.0	4.0	—
D.O. (ppm)	surface	3.5	2.0	5.3	6.8	6.9	—
	bottom	3.4	3.7	5.2	7.1	7.4	—
p.H	surface	7.5	7.4	7.7	—	7.7	—
	bottom	7.5	7.5	7.7	—	7.7	—
secchi (cm)		80	90	70	60	60	—
Length of set (hr)		24	23.5	24	24	24	—

CATCH	AUGUST 1987 #	AUGUST 1987 size range	SEPTEMBER 1987 #	SEPTEMBER 1987 size range	OCTOBER 1987 #	OCTOBER 1987 size range	NOVEMBER 1987 #	NOVEMBER 1987 size range	DECEMBER 1987 #	DECEMBER 1987 size range	JANUARY 1988 #	JANUARY 1988 size range
FinFish												
Atlantic menhaden	13	215-300	6	209-273	—	—	—	—	—	—	—	—
Atlantic tomcod	—	—	—	—	—	—	12	145-185	1	176	—	—
Blueback herring	—	—	—	—	1	166	—	—	—	—	—	—
Stripped bass	1	155	—	—	1	465	—	—	—	—	—	—
Stripped killifish	—	—	—	—	—	—	—	—	1	135	—	—
White perch	7	130-230	—	—	2	208-244	—	—	—	—	—	—
Invertebrates												
Callinectes sapidus	7	116-210	—	—	—	—	—	—	—	—	—	—
Rhithropanopeus harrisii	10	—	30	—	—	—	—	—	—	—	—	—

CATCH AND WATER QUALITY COLLECTED AT STATION CN2

CN2		FEBRUARY 1987	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	JULY 1987
WATER QUALITY							
Collection #		0003	0022	0097	0129	0175	0266
Date		2/5/87	3/5/87	4/20/87	5/11/87	6/3/87	7/20/87
Time		1040	1045	1300	1140	1253	1150
Tidal Stage (hr.)		Low + 1	Low + 4	Low + 4	High + 3	Low + 4	Low + 0
Average Depth (ft.)		20	20	20	20	20	20
Salinity (o/oo)	surface	—	2.0	5.0	7.0	8.0	10.0
	bottom	—	2.0	5.0	7.0	8.0	12.0
Temperature(°C)	surface	4.0	7.0	17.0	19.0	24.5	29.0
	bottom	3.5	7.0	16.5	18.55	24.5	29.5
	air	3.0	8.0	19.0	26.0	18.0	33.0
D.O.	surface	7.8	9.0	7.0	3.1	2.8	2.6
	bottom	8.2	9.0	6.8	5.0	3.6	3.6
pH	surface	7.4	7.6	7.6	7.6	7.4	7.8
	bottom	7.4	7.5	7.6	7.6	7.5	8.1
Secchi (cm)		80	80	80	80	60	80
Length of Set (hr.)		24	24	24	24.5	24	24

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
FinFish												
Alewife	—	—	NO CATCH		—	—	—	—	5	149-269		NO CATCH
Atlantic menhaden	—	—	—	—	—	—	1	263	33	140-275		—
Striped bass	—	—	—	—	—	—	—	—	22	149-330		—
White perch	1	254	—	—	1	124	1	135	38	119-305		—
Invertebrates	—	—	—	—	—	—	—	—	—	—	—	—
(NONE)												

CATCH AND WATER QUALITY COLLECTED AT GN2

GN2		Winter 1988	Spring 1988	Summer 1988	Fall 1988
WATER QUALITY					
Collection No.		0695	0750	0874	0960
Date		3/9/88	5/9/88	8/22/88	11/4/88
Time		1010	1050	1040	1030
Tidal stage (hr.)		Low + 4	Low + 0	Low + 0	Low + 0
Average Depth (ft.)		15	15	15	20
Salinity (o/oo)	surface	2.0	6.0	10.0	8.0
	bottom	4.0	6.0	12.0	9.0
Temperature (°C)	surface	8.4	16.7	26.3	11.2
	bottom	8.0	16.4	25.8	10.6
	air	5.0	15.0	22.0	13.0
D.O. (ppm)	surface	10.2	11.4	2.5	6.2
	bottom	10.1	11.3	2.7	6.5
pH	surface	7.5	8.1	6.9	7.7
	bottom	7.5	8.1	6.8	7.7
Secchi (cm)		60	70	90	80
Length of set (hr.) (water quality taken at end of set)		24.0	23.5	24.0	24.0

CATCH

FINFISH

	#	size range	#	size range	#	size range	#	size range
Atlantic menhaden	--	—	8	270-325	1	290	--	--
Atlantic tomcod	--	--	--	—	—	—	24	154-182
Gizzard shad	—	—	—	—	1	162	--	—
Winter flounder	--	--	—	—	—	—	1	124
White perch	—	—	—	--	—	—	2	130-215
INVERTEBRATES								
Callinectes sapidus	—	—	1	50	12	96-152	--	—
Rhithropanopeus harrissii	30	--	70	--	--	--	50	--

Station GN 2

		SPRING 1987	SUMMER 1987	FALL 1987	WINTER 1988
WATER QUALITY					
Collection No.		0126-0128	0331-0333	0484-0486	0677-0679
Date		5/11/87	8/26/87	11/16/87	2/29/88
Time		1127	1215	1206	1317
Tidal stage (hr.)		High + 3	High + 1	Low + 0	Low + 0
Average Depth (ft.)		15	18	20	20
Salinity (o/oo)	surface	5.0	11.0	5.0	2.0
	bottom	6.0	12.5	5.0	2.0
Temperature (°C)	surface	18.0	25.0	10.0	6.6
	bottom	17.5	25.0	10.0	6.0
	air	22.0	22.0	—	5.0
D.O. (ppm)	surface	4.8	4.5	4.2	8.6
	bottom	5.0	3.6	5.2	9.2
pH	surface	7.8	7.5	8.8	7.8
	bottom	7.7	7.5	9.0	7.4
Secchi (cm)		70.0	70.0	70.0	70.0

CATCH		#	#/m²	#	#/m²	#	#/m²	#	#/m²
Bivalvia	Macoma balthica	—	—	4	27	—	—	2	13
Gastropoda	Hydrobia totteni	—	—	—	—	4	27	1	7
Polychaeta	Marenzellaria viridis	—	—	3	20	1	7	—	—
	Polydora sp.	—	—	2	13	—	—	—	—
	Streblospio benedicti	—	—	—	—	21	140	2	13
Oligochaeta		220	1467	45	300	628	4187	189	1260
Cirripedia	Balanus improvisus	1	7	—	—	—	—	—	—
Amphipoda	Monoculodes edwardsi	—	—	—	—	—	—	1	7
Isopoda	Cyathura polita	—	—	1	7	—	—	—	—
	Gammarus tigrinus	1	7	—	—	—	—	—	—
	Melita nitida	3	20	—	—	1	7	—	—
Decapoda	Crab zoea	—	—	4	27	—	—	—	—
	Megalops	—	—	1	7	—	—	—	—
(larvae)	Palaemonetes pugio	—	—	7	47	—	—	—	—
	Rithropanopeus harrisii	12	80	2	13	15	100	4	27

GN2

CATCH		SPRING 1987		SUMMER 1987		FALL 1987		WINTER 1988	
		#	m^2	#	m^2	#	m^2	#	m^2
	Neomysis americana	--	--	--	--	2	13	--	--
	Nereies succinea	--	--	--	--	1	7	--	--
	Laeonereis culveri	--	--	--	--	1	7	--	--
Copepoda	Harpata coid	--	--	--	--	1	7	--	--
Cumacea	Leucon americanus	--	--	--	--	5	33	--	--
Holothuridea		--	--	--	--	1	7	--	--

CATCH AND WATER QUALITY COLLECTED AT STATION GN3

GN3		FEBRUARY 1987	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	JULY 1987
WATER QUALITY							
Collection #		007	0024	0115	0159	0228	0271
Date		2/19/87	3/9/87	4/29/87	5/21/87	6/23/87	7/27/87
Time		1130	1050	1430	1145	1400	1450
Tidal Stage (hr.)		Low +4	Low +0	High +3	Low +0	Low +0	High+3
Average Depth (ft.)		5	5	10	10	10	12
Salinity (o/oo)	surface	4.5	0.0	0.0	2.0	7.0	7.0
	bottom	4.5	0.0	0.0	2.0	8.0	7.0
Temperature(°C)	surface	9.0	8.0	19.0	21.0	28.0	32.0
	bottom	9.0	8.0	18.0	21.0	28.0	32.0
	air	6.0	1.0	15.0	22.0	28.0	29.0
D.O.	surface	7.8	10.8	7.1	1.8	2.9	3.2
	bottom	7.8	10.8	6.2	3.3	2.7	2.1
pH	surface	7.1	7.6	7.6	7.6	7.5	7.8
	bottom	7.1	7.6	7.6	7.5.	7.5	7.8
Secchi (cm)		50	70	50	70	90	60
Length of Set (hr.)		24	49	44	24	24	24

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
FinFish												
Brown Bullhead	NO CATCH		NO CATCH		1	320	NO CATCH		NO CATCH		NO CATCH	
Carp	—	—	—	—	2	420-560	—	—	—	—	—	
Golden Shiner	—	—	—	—	1	175	—	—				
Invertebrates												
Rhithropanopeus harrissii	—	—			1	—	—	—				

CATCH AND WATER QUALITY COLLECTED AT STATION GN3

GN3		AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987 (Not Sampled)	JANUARY 1988 (Not Sampled)
WATER QUALITY							
Collection #		0318	0410	0459	0526	—	—
Date		8/24/87	9/28/87	10/27/87	11/24/87	—	—
Time		1330	1100	1058	1115	—	—
Tidal Stage (hr.)		High +3	Low +4	Low + 0	High +0	—	—
Average Depth (ft.)		15	10	10	15	—	—
Salinity (o/oo)	surface	7.0	3.5	4.0	2.0	—	—
	bottom	7.0	3.5	2.0	2.0	—	—
Temperature (C)	surface	25.5	28.0	18.0	8.0	—	—
	bottom	25.5	27.5	17.8	8.2	—	—
	air	22.0	26.0	15.0	8.8	—	—
D.O. (ppm)	surface	2.2	1.9	5.0	5.6	—	—
	bottom	1.0	1.7	4.8	5.8	—	—
p.H	surface	7.5	7.5	7.9	7.7	—	—
	bottom	7.5	7.5	7.8	7.5	—	—
secchi (cm)		70	70	50	50	—	—
Length of set (hr)		24	—	24	24	—	—

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
FinFish												
Brown Bullhead	—	—	NO CATCH		1	290	—	—	—	—	—	—
Gizzard shad	31	139-162	—	—	—	—	—	—	—	—	—	—
Invertebratea												
Balanus improvisus	—	—	—	—	—	—	15	—	—	—	—	—
Congeria Leucophaeta	—	—	—	—	—	—	80	—	—	—	—	—
Rhithropanopeus harrissii	—	—	—	—	—	—	1	—	—	—	—	—

CATCH AND WATER QUALITY COLLECTED AT GN3

GN3		Winter 1988 (NOT SAMPLED)	Spring 1988	Summer 1988	Fall 1988
WATER QUALITY					
Collection No.		—	0861	0891	0974
Date		—	6/23/88	9/22/88	11/15/88
Time		—	1130	1200	1030
Tidal stage (hr.)		—	Low + 0	High + 4.5	Low + 5.0
Average Depth (ft.)		—	10	10	11
Salinity (o/oo)	surface	—	4.0	6.0	4.0
	bottom	—	4.0	8.0	3.0
Temperature (°C)	surface	—	29.2	26.0	15.7
	bottom	—	29.1	25.0	15.6
	air	—	—	25.0	12.0
D.O. (ppm)	surface	—	1.2	2.0	4.0
	bottom	—	1.9	2.3	4.2
pH	surface	—	5.6	—	7.6
	bottom	—	5.4	—	7.5
Secchi (cm)		—	40	80	50
Length of set (hr.) (water quality taken at end of set)		—	24	24	23.5

CATCH
FINFISH

	#	size range	#	size range	#	size range	#	size range
Gizzard shad	—	—	NO CATCH		NO CATCH		1	131
	—	—	—	—	Net Fouled		—	—
	—	—	—	—	w/debris		—	—

Station GN 3

		SPRING 1987	SUMMER 1987	FALL 1987	WINTER 1988 (NOT SAMPLED)
WATER QUALITY					
Collection No.		0229-0231	0411-0413	0523-0525	—
Date		6/23/87	9/28/87	11/24/87	—
Time		1400	1115	1046	—
Tidal stage (hr.)		Low + 0	Low + 4	High + 0	—
Average Depth (ft.)		10	10	15	—
Salinity (o/oo)	surface	7.0	4.0	2.0	—
	bottom	8.0	4.0	2.0	—
Temperature (°C)	surface	28.5	27.0	7.5	—
	bottom	28.0	27.0	7.3	—
	air	28.0	22.0	8.5	—
D.O. (ppm)	surface	1.9	1.8	6.8	—
	bottom	2.9	1.9	7.3	—
pH	surface	7.6	7.4	7.6	—
	bottom	7.5	7.5	7.6	—
Secchi (cm)		60.0	65.0	50.0	—

CATCH		#	m^2	#	m^2	#	m^2	#	m^2
Bivalvia	Congeria leucophaeta	—	—	1	7	22	147	—	—
Gastropoda	Hydrobia totteni	13	87	131	873	1444	9627	—	—
Oligochaeta		646	4307	48	320	77	513	—	—
Cirripedia	Balanus improvisus	—	—	3	20	—	—	—	—
Chironomidae		50	333	—	—	2	13	—	—

CATCH AND WATER QUALITY COLLECTED AT SEINE STATION S1

S1		FEBRUARY 1987	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	JULY 1987
WATER QUALITY							
Collection #		0001	0027	0095	0123	0177	0259
Date		2/5/87	3/11/87	4/20/87	5/7/87	6/4/87	7/9/87
Time		0950	1320	1035	1213	1028	1345
Tidal Stage (hr.)		Low +1	Low +0	Low +1	Low +0	Low +0.5	Low +0
Average Depth (ft.)		3-4	4-5	4-5	3-4.5	5	4-5
Salinity (o/oo)	surface	8.0	4.0	2.0	5.0	10.0	14.0
	bottom	8.0	4.0	2.0	5.0	--	--
Temperature(°C)	surface	3.0	6.0	15.0	18.0	24.0	30.5
	bottom	3.0	6.0	15.0	18.0	--	--
	air	-3.0	2.0	17.5	22.0	18.0	33.0
D.O.	surface	10.0	15.0	7.0	8.7	4.1	2.1
	bottom	10.0	15.0	7.0	8.7	--	--
pH	surface	7.5	8.0	7.8	7.9	7.7	7.5
	bottom	7.5	8.0	7.8	7.9	--	--
Secchi (cm)		60	70	70	75	60	90
Length of Set (hr.)							

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Finfish												
Atlantic silverside	--	--	--	--	--	--	2	63-83	4	64-114	34	30-68
Bay anchovy	--	--	--	--	--	--	--	--	1	92	--	--
Blueback herring	--	--	--	--	1	120	--	--	--	--	--	--
Bluefish	--	--	--	--	--	--	1	455	1	50	--	--
Inland silverside	--	--	7	37-53	--	--	--	--	--	--	1	68
Mummichog	1	36	1	37	9	35-115	4	39-46	77	45-117	3685	25-119
Northern pipefish	--	--	--	--	--	--	--	--	2	147-169	--	--
Striped bass	--	--	--	--	--	--	1	375	--	--	--	--
Striped killifish	--	--	--	--	--	--	--	--	3	74-100	2	40-99
White perch	--	--	--	--	--	--	--	--	--	--	1	155
Invertebrates												
Balanus improvisus	--	--	--	--	--	--	--	--	--	--	20	--
Callinectes sapidus	--	--	--	--	--	--	--	--	2	39-72	1	180
Crangon septemspinosa	--	--	1	--	--	--	--	--	--	--	--	--
Palaemonetes pugio	--	--	1	--	1800	--	155	--	6	--	--	--
Rhithropanopeus harrisi	--	--	--	--	2	--	--	--	--	--	--	--

CATCH AND WATER QUALITY COLLECTED AT STATION S1

S1		AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987	JANUARY 1988
WATER QUALITY							
Collection #		0310	0364	0430	0504	0606	0618
Date		8/17/87	9/14/87	10/2/87	11/19/87	12/17/87	1/12/88
Time		1145	1110	1049	1410	1155	1120
Tidal Stage (hr.)		Low +1	Low +2	High +5	Low +0	High +5.5	Low +2.5
Average Depth (ft.)		4	4	4-5	3-4	4	4-5
Salinity (o/oo)	surface	13.0	6.0	9.0	7.0	5.0	8.0
	bottom	--	--	--	--	--	--
Temperature(°C)	surface	29.5	25.0	21.0	13.0	7.5	3.6
	bottom	--	--	--	--	--	--
	air	31.0	24.0	17.0	12.0	5.0	-1.0
D.O.	surface	3.4	2.5	4.6	5.6	8.6	10.0
	bottom	--	--	--	--	--	--
pH	surface	7.6	7.3	7.6	--	7.7	7.6
	bottom	--	--	--	--	--	--
Secchi (cm)		60	100	70	70	60	110
Length of Set (hr.)							

CATCH	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Finfish												
Atlantic Silverside	11	46-80	63	67-99	952	66-110	4	72-97	4	65-93	--	--
Bluefish	--	--	--	--	--	--	1	124	--	--	--	--
Inland silverside	12	38-71	3	42-75	--	--	19	36-63	7	49-61	--	--
Mummichog	49	27-107	34	23-112	16	39-98	61	27-100	4	38-64	1	31
Striped killifish	--	--	--	--	2	58-69	2	77-92	--	--	--	--
Invertebrates												
Balanus improvisus	--	--	--	--	--	--	100	--	--	--	--	--
Callinectes sapidus	--	--	--	--	--	--	--	--	--	--	--	--
Crangon septemspinosa	--	--	--	--	--	--	--	--	--	--	--	--
Palaemonetes pugio	200	--	300	--	600	--	1300	--	20	--	--	--
Rhithropanopeus harrisi	--	--	--	--	1	--	--	--	--	--	--	--

CATCH AND WATER QUALITY COLLECTED AT STATION S1

S1		WINTER 1988 (NOT SAMPLED)	SPRING 1988	SUMMER 1988	FALL 1988
WATER QUALITY					
Collection #		--	0761	0876	0962
Date		--	6/7/88	8/22/88	11/3/88
Time		--	1045	1115	1054
Tidal Stage (hr.)		--	Low + 0	Low +1	Low +0
Average Depth (ft.)		--	4	4	3
Salinity (o/oo)	surface	--	6.0	12.0	10.0
	bottom	--	--	--	--
Temperature(°C)	surface	--	21.3	26.3	9.0
	bottom	--	--	--	--
	air	--	20.0	24.0	9.0
D.O.	surface	--	5.6	3.8	7.5
	bottom	--	--	--	--
pH	surface	--	7.4	7.0	8.0
	bottom	--	--	--	--
Secchi (cm)		--	70	95	80
Length of Set (hr.)		--	--	--	--

CATCH	#	size range	#	size range	#	size range	#	size range
FinFish								
Atlantic Silverside	--	--	4	80-113	18	64-94	45	
Bay anchovy	--	--	14	54-67	--	--	1	
Goldfish	--	--	--	--	1	53	--	--
Mummichog	--	--	4	59-91	771	19-129	50	35-89
Crevalle jack	--	--	--	--	2	63-77	--	--
Invertebrates								
Baianus improvisus	--	--	--	--	100	--	--	--
Palaemonetes pugio	--	--	78	--	500	--	60	--

Station S1

WATER QUALITY		SPRING 1987	SUMMER 1987	FALL 1987	WINTER 1988
Collection No.		0131-0133	0295-0297	0565-0567	0704-0706
Date		5/11/87	8/13/87	12/8/87	3/24/88
Time		1209	1140	1115	1140
Tidal stage (hr.)		High + 3	Low + 4	High + 1	Low + 3
Average Depth (ft.)		5	5	10	5
Salinity (o/oo)	surface	8.0	17.0	8.0	12.0
	bottom	—	—	8.0	—
Temperature (°C)	surface	17.0	25.0	7.3	6.7
	bottom	—	—	6.6	—
	air	22.0	23.0	6.0	16.0
D.O. (ppm)	surface	5.6	2.8	9.0	11.0
	bottom	—	—	9.5	—
pH	surface	7.6	7.3	7.4	8.0
	bottom	—	—	7.5	—
Secchi (cm)		70.0	70.0	80.0	70.0

CATCH		#	#/m²	#	#/m²	#	#/m²	#	#/m²
Neomysis americana		—	—	—	—	—	—	1	7
Nemertea		1	7	—	—	—	—	1	7
Nematoda		1	7	—	—	—	—	—	—
Bivalvia	Macoma balthica	3	20	10	67	1	7	1	7
	Mya arenaria	—	—	—	—	5	33	—	—
	Congeria leucophaeta	—	—	144	960	8	53	—	—
Polychaeta	Laeonerias culveri	2	13	29	193	—	—	7	47
	spionidae sp.	26	173	—	—	—	—	—	—
	streblospio benedicti	19	127	58	387	227	1513	—	—
	polydora socialis	—	—	1	7	—	—	—	—
	polydora ligni	—	—	15	100	1	7	—	—
Oligochaeta		66	440	173	1153	58	387	16	107
Cirripedia	Balanus improvisus	6	40	805	5367	28	187	2	13
	Nereis diversicolor	—	—	—	—	1	7	—	—
Isopoda	Cyathura polita	24	160	22	147	25	167	10	67
	Edotea triloba	—	—	1	7	—	—	—	—
Amphipoda	Corophium lacustre	1	71	—	—	—	—	—	—
	Melita nitida	4	27	4	27	4	27	—	—
	Marenzellaria viridis	—	—	—	—	2	13	—	—

Station S1

CATCH		SPRING 1987		SUMMER 1987		FALL 1987		WINTER 1988	
		#	m^2	#	m^2	#	m^2	#	m^2
Decapoda	Rithropanopeus harrisii	9	60	40	267	7	47	--	--
	Leitoscoloplos robustus	--	--	--	--	1	7	--	--
Holothurian		--	--	1	7	--	--	--	--
Neries succinea		--	--	13	87	18	120	--	--
Hypaniola florida		--	--	57	380	--	--	--	--
Eteone heteropoda		--	--	1	7	6	40	--	--
Leucon americanus		--	--	--	--	--	--	4	27

CATCH AND WATER QUALITY COLLECTED AT SKINK STATION S2

S2		FEBRUARY 1987	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	JULY 1987
WATER QUALITY							
Collection No.		0004	0026	0096	0124	0178	0260
Date		2/5/87	3/9/87	4/20/87	5/7/87	6/4/87	7/9/87
Time		1030	1230	1150	1306	1115	1427
Tidal stage (hr.)		Low + 2	Low + 1	Low + 2	Low + 1	Low + 1	Low + 0
Depth (FT)		5	4.5	4	5	5	5
Salinity (o/oo)	surface	7.0	2.0	1.0	2.0	6.0	8.0
	bottom	7.0	2.0	1.0	2.0		
Temperature (°c)	surface	3.0	11.0	17.0	18.0	24.5	29.0
	bottom	3.0	11.0	17.0	18.0		
	air	- 1.0	12.5	20.5	26.5	18.5	28.0
D.O. (ppm)	surface	7.8	8.8	7.4	10.2	2.2	4.6
	bottom	7.8	8.8	7.4	10.2		
pH	surface	7.4	7.5	7.5	8.1	7.6	7.5
	bottom	7.4	7.5	7.5	8.1		
secchi (cm)		--	70	70	75	80	70

Catch Finfish	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Blueback herring	--	--	--	--	--	--	4	95-99	--	--	--	--
Carp	--	--	--	--	--	--	2	506-550	--	--	--	--
Inland silverside	1	54	3	46-50	8	56-67	13	49-102	7	57-72	11	23-72
Mummichog	69	27-63	248	30-94	1140	35-115	30	41-77	2683	43-97	1500	22-80
Striped bass	--	--	--	--	--	--	1	125	--	--	--	--
Striped killifish	--	--	--	--	--	--	--	--	1	92	--	--
White perch	--	--	--	--	1	116	2	219-227	--	--	--	--
Invertebrates												
Balanus improvisus	2	--	--	--	--	--	--	--	--	--	--	--
Callinectes sapidus	--	--	--	--	--	--	--	--	--	--	1	87
Congeria leucophaeta	1	--	--	--	--	--	--	--	--	--	--	--
Palaeomonetes pugio	2	--	33	--	--	--	3	--	--	--	142	--
Rhithropanopeus harrisii	--	--	--	--	--	--	--	--	--	--	2	--

CATCH AND WATER QUALITY COLLECTED AT SEINE STATION S2

S2		AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987	JANUARY 1988
WATER QUALITY							
Collection No.		0311	0361	0431	0501	0607	0617
Date		8/17/87	9/14/87	10/2/87	11/19/87	12/17/87	1/12/88
Time		1215	1010	1145	1250	1235	1045
Tidal stage (hr.)		Low + 2	Low + 1	Low + 0	High + 5.5	Low + 0	Low + 2
Depth (FT)		5	4	4	4	4	4
Salinity (o/oo)	surface	--	6.0	5.5	5.0	0.0	2.0
	bottom	--	--	--	--	--	--
Temperature (°c)	surface	31.0	25.0	21.5	11.0	7.5	2.9
	bottom	--	--	--	--	--	--
	air	--	24.0	17.0	12.0	4.0	-1.0
D.O. (ppm)	surface	7.6?	2.2	2.3	2.8	5.2	8.2
	bottom	--	--	--	--	--	--
pH	surface	7.7	7.2	7.6	--	7.5	7.5
	bottom	--	--	--	--	--	--
secchi (cm)		60	100	80	60	60	80

Catch	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Finfish												
Atlantic silverside	10	47-70	--	--	9	76-95	1	75	--	--	1	81
Bay anchovy	--	--	--	--	1	58	--	--	--	--	--	--
Inland silverside	52	37-63	182	45-62	140	45-68	70	39-61	11	45-57	7	45-58
Mummichog	655	23-108	2890	30-115	467	29-87	734	26-97	1400	26-84	7	28-58
Pumpkinseed	1	84	2	42-94	--	--	--	--	--	--	--	--
Striped killifish	--	--	8	59-123	16	41-121	6	60-130	6	65-100	--	--
White perch	1	105	--	--	--	--	--	--	--	--	--	--
Invertebratee												
Balanus improvisus	--	--	--	--	--	--	130	--	30	--	25	--
Crangon septemspinosa	--	--	--	--	--	--	6	--	3	--	--	--
Macoma balthica	--	--	--	--	--	--	--	--	1	--	--	--
Palaeomonetes pugio	--	--	--	--	1700	--	15	--	10	--	1	--

CATCH AND WATER QUALITY COLLECTED AT STATION S2

S2		WINTER 1988 (NOT SAMPLED)	SPRING 1988	SUMMER 1988	FALL 1988
WATER QUALITY					
Collection #		—	0762	0877	0963
Date		—	6/7/88	8/22/88	11/3/88
Time		—	1130	1215	1135
Tidal Stage (hr.)		—	Low +1	Low +2	Low +0.5
Average Depth (ft.)		—	4	4	3
Salinity (o/oo)	surface	—	5.0	10.0	5.0
	bottom	—	—	—	—
Temperature(°C)	surface	—	21.5	27.3	11.2
	bottom	—	—	—	—
	air	—	21.0	24.0	9.0
D.O.	surface	—	5.4	3.5	6.0
	bottom	—	—	—	—
pH	surface	—	7.5	6.8	7.9
	bottom	—	—	—	—
Secchi (cm)		—	60	100	60
Length of Set (hr.)		—	—	—	—

CATCH	#	size range	#	size range	#	size range	#	size range
FinFish								
Atlantic Silverside	—	—	—	—	686	52-140	—	—
Inland silverside	—	—	—	—	230	36-66	—	—
Mummichog	—	—	600	49-90	3638	27-95	2206	31-89
Pumpkinseed	—	—	1	57	2	85-88	—	—
Striped bass	—	—	4	90-110	—	—	—	—
Striped killifish	—	—	12	82-132	50	34-125	125	43-140
Striped mullet	—	—	1	—	—	—	—	—
Window pane	—	—	—	—	—	—	1	88
Weakfish	—	—	—	—	—	—	1	80
Winter flounder	—	—	—	—	—	—	1	101
Invertebrates								
Balanus improvisus	—	—	—	—	—	—	35	—
Callinectes sapidus	—	—	6	39-92	5	131-165	3	40-47
Crangon septemspinosa	—	—	—	—	—	—	36	—
Palaemonetes pugio	—	—	40	—	200	—	1764	—

Station S2

WATER QUALITY		SPRING 1987	SUMMER 1987	FALL 1987	WINTER 1988
Collection No.		0210-0212	0334-0336	0496-0498	0665-0667
Date		6/15/87	8/26/87	11/16/87	2/29/88
Time		1201	1240	1303	1155
Tidal stage (hr.)		Low + 5.0	High + 1.0	Low + 1.0	High + 4.5
Average Depth (ft.)		3	8	3	4
Salinity (o/oo)	surface	12.0	11.0	5.0	3.0
	bottom	—	11.0	5.0	—
Temperature (°C)	surface	25.5	25.0	10.0	6.7
	bottom	—	25.0	10.0	—
	air	33.0	23.0	—	5.0
D.O. (ppm)	surface	3.7	3.2	4.2	8.0
	bottom	—	3.9	5.2	—
pH	surface	7.6	7.5	8.8	7.6
	bottom	—	7.5	9.0	—
Secchi (cm)		60.0	70.0	70.0	70.0

CATCH		#	#/m²	#	#/m²	#	#/m²	#	#/m²
Bivalvia	Macoma balthica	1	7	—	—	2	13	2	13
Gastropoda	Hydrobia totteni	—	—	162	1080	157	1047	101	673
Polychaeta	Hypaniola florida	15	100	196	1307	—	—	—	—
	Laeonereios culveri	—	—	105	—	14	93	5	33
	Polydora socialis	—	—	2	13	—	—	—	—
	Streblospio benedicti	—	23	153	1	7	—	—	—
Oligochaeta		159	1060	146	973	165	1100	32	213
Isopoda	Cyathura polita	—	—	2	13	2	13	7	47
	Edotea triloba	—	—	—	—	1	7	—	—
Copapoda	Harpactocoida	—	—	—	—	1	7	—	—
Decapoda	Rithropanopeus harrissii	—	—	2	13	—	—	—	—
Chironomidae		82	547	2	13	—	—	—	—
Coleoptera		1	7	—	—	—	—	—	—

CATCH AND WATER QUALITY COLLECTED AT SEINE STATION S4

S4		FEBRUARY 1987	MARCH 1987	APRIL 1987	MAY 1987	JUNE 1987	JULY 1987
WATER QUALITY							
Collection No.		0006	0025	0099	0125	0179	0265
Date		2/5/87	3/9/87	4/21/87	5/7/87	6/4/87	7/14/87
Time		1215	1102	1215	1340	1205	0900
Tidal stage (hr.)		Low + 3	Low + 0	Low + 1	Low + 2	Low + 4	Low + 2
Depth (FT)		4	4	4	4	5	4
Salinity (o/oo)	surface	3.5	2.0	0.0	5.5	4.0	6.0
	bottom	3.5	2.0	0.0	5.5	--	--
Temperature (°c)	surface	4.0	13.0	19.5	21.0	25.5	32.0
	bottom	4.0	13.0	19.5	21.0	--	--
	air	0.0	15.0	23.0	31.0	18.0	26.5
D.O. (ppm)	surface	8.0	8.3	5.3	9.0	1.6	1.5
	bottom	8.8	8.3	5.3	9.0	--	--
pH	surface	7.4	7.5	7.5	7.8	7.6	7.4
	bottom	7.4	7.5	7.5	7.8		
secchi (cm)		20	60	80	75	50	60

Catch Finfish	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Inland silverside	--	--	--	--	--	--	6	52-72	--	--	--	--
Mummichog	127	30-90	245	31-87	810	33-97	217	41-72	925	44-96	450	24-97
Pumpkinseed	--	--	--	--	--	--	--	--	5	53-94	5	52-96
White perch	--	--	--	--	--	--	1	184	--	--	--	--

Invertebrates	#	size range	#	size range	#	size range	#	size range	#	size range	#	size range
Congeria leucophaeta	1	--	--	--	--	--	--	--	--	--	--	--
Palaeomonetes pugio	--	--	--	--	30	--	1	--	2	--	--	--
Rhithropanopeus harrisii	--	--	--	--	--	--	1	--	--	--	--	--

CATCH AND WATER QUALITY COLLECTED AT SEINE STATION S4

S4		AUGUST 1987	SEPTEMBER 1987	OCTOBER 1987	NOVEMBER 1987	DECEMBER 1987	JANUARY 1988
WATER QUALITY							
Collection No.		0312	0365	0432	0527	0608	0619
Date		8/17/87	9/14/87	10/2/87	11/30/87	12/28/87	1/12/88
Time		1255	1150	1230	1045	1115	1205
Tidal stage(hr.)		Low + 2	Low + 3	Low + 0	High + 5	Low + 1	Low + 3
Depth (FT)		5	4	4	3	4	5
Salinity (o/oo)	surface	6.0	5.0	4.0	3.0	0.0	0.0
	bottom	--	--	--	--	--	--
Temperature (°c)	surface	34.0	27.0	24.0	12.0	7.0	7.5
	bottom	--	--	--	--	--	--
	air	31.0	24.0	17.0	13.0	-1.0	0.0
D.O. (ppm)	surface	9.2	4.0	1.9	5.5	4.4	7.5
	bottom	--	--	--	--	--	--
pH	surface	7.7	7.4	7.6	7.6	7.8	7.4
	bottom	--	--	--	--	--	--
secchi (cm)		60	100	80	70	80	60

Catch	AUGUST 1987 #	AUGUST 1987 size range	SEPTEMBER 1987 #	SEPTEMBER 1987 size range	OCTOBER 1987 #	OCTOBER 1987 size range	NOVEMBER 1987 #	NOVEMBER 1987 size range	DECEMBER 1987 #	DECEMBER 1987 size range	JANUARY 1988 #	JANUARY 1988 size range
Finfish												
Gizzard shad	6	118-145	--	--	--	--	--	--	--	--	--	--
Inland silverside	24	39-49	20	42-55	13	42-60	2	46-47	--	--	1	82
Mummichog	558	24-90	1050	33-172	1170	27-80	3360	28-97	*	25-104	81	33-63
Striped killifish	--	--	4	49-124	--	--	--	--	--	--	--	--
Invertebratee												
Palaeomonetes pugio	--	--	5	--	--	--	--	--	--	--	--	--

* On this date an unconfirmed estimate of 29,212 mummichogs was logged, but the data was omitted due to thier anomalous nature.

CATCH AND WATER QUALITY COLLECTED AT STATION S4

S4		WINTER 1988 (NOT SAMPLED)	SPRING 1988	SUMMER 1988	FALL 1988
WATER QUALITY					
Collection #		—	0763	0878	0964
Date		—	6/7/88	8/22/88	11/3/88
Time		—	1215	1320	1300
Tidal Stage (hr.)		—	Low +2	Low +3	Low +2
Average Depth (ft.)		—	3	4	4
Salinity (o/oo)	surface	—	—	8.0	4.0
	bottom	—	—	—	—
Temperature(°C)	surface	—	—	30.10	15.0
	bottom	—	—	—	—
	air	—	—	21.0	11.0
D.O.	surface	—	—	6.2	5.8
	bottom	—	—	—	—
pH	surface	—	—	7.1	7.9
	bottom	—	—	—	—
Secchi (cm)		—	—	80	60
Length of Set (hr.)		—	—	—	—

CATCH	#	size range	#	size range	#	size range	#	size range
FinFish								
Inland silverside	—	—	—	—	151	38-78	—	—
Mummichog	—	—	404	50-95	3071	25-104	624	29-88
Pumpkinseed	—	—	—	—	1	86	—	—
Striped killifish	—	—	—	—	6	37-91	1	91
White perch	—	—	—	—	1	83	—	—
Invertebrates								
Palaemonetes pugio	—	—	—	—	—	—	30	—

Station S4

WATER QUALITY		SPRING 1987	SUMMER 1987	FALL 1987	WINTER 1988
Collection No		0063-0065	0395-0397	0517-0519	(NOT SAMPLED)
Date		4/1/87	9/21/87	11/23/87	—
Time		1150	1403	1205	—
Tidal stage (hr.)		High + 0	High + 4.5	High + 1.5	—
Average Depth (ft.)		5	3	5	—
Salinity (o/oo)	surface	0.0	4.5	0.0	—
	bottom	0.0	—	1.0	—
Temperature (°C)	surface	13.0	24.0	6.0	—
	bottom	13.0	—	6.0	—
	air	8.5	22.0	10.0	—
D.O. (ppm)	surface	7.3	3.2	5.8	—
	bottom	7.3	—	6.1	—
pH	surface	7.7	7.5	7.5	—
	bottom	7.7	—	7.5	—
Secchi (cm)		50.0	90.0	50.0	—

CATCH		#	m^2	#	m^2	#	m^2	#	m^2
Bivalvia	Congeria leucophaeta	—	—	2	13	1	7	—	
Gastropoda	Hydrobia totteni	3	20	24	160	46	307	—	
Oligochaeta		19	127	23	153	46	307	—	
Chironomidae		—	—	5	33	15	100	—	
Culicidae	Chaoborus sp.	—	—	1	7	—	—	—	
Hydracarina		1	7	—	—	—	—	—	

Particle size distribution of sediments at each sampling site.

Wentworth Size Class

Site	Pebble	Granule	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt and Clay
T1(shallow)	0.32	0.5	0.4	1.3	3.8	20.9	16.4	56.4
T1(deep)	3.6	3.7	1.7	2.0	5.9	16.2	11.8	55.1
T2(shallow)	54.1	6.5	2.9	3.5	8.2	10.1	3.6	11.0
T2(deep)	0.1	1.9	2.0	10.1	27.8	30.8	9.8	17.6
T3(shallow)	0.0	0.7	0.1	0.0	0.4	2.1	5.8	91.0
T3(deep)	0.0	0.0	0.8	0.0	0.1	1.6	4.7	92.8
T4(shallow)	0.0	0.7	0.3	0.0	0.1	1.7	3.3	93.9
T4(deep)	0.0	0.0	0.4	0.0	0.2	2.1	8.3	88.9
T5(shallow)	0.0	0.1	0.0	0.0	0.1	0.3	2.8	96.7
T5(deep)	0.0	0.3	3.5	7.9	29.8	38.3	5.4	14.8
T6	0.0	0.0	0.6	0.0	0.5	2.1	2.1	94.8
T7	0.0	0.2	0.8	0.2	0.3	1.7	2.3	94.6
T8	0.0	0.1	0.3	0.0	0.4	5.8	2.0	91.4
T9	0.0	0.1	0.8	0.1	1.0	2.9	2.6	92.5
GN1	0.0	0.3	0.3	0.7	22.2	58.5	6.5	11.5
GN2	0.0	0.7	0.0	0.8	10.0	8.6	6.7	73.0
GN3	0.0	0.0	0.0	0.0	0.2	0.1	1.5	98.2

Wentworth Size Class

Site	Pebble	Granule	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt and Clay
TN1	0.0	0.2	1.6	2.8	6.1	7.7	5.3	76.3
TN2	0.0	0.3	0.8	0.0	0.4	2.2	1.5	94.8
TN3	0.0	0.2	0.7	1.3	0.2	0.9	0.7	96.0
TN4	0.0	0.7	0.3	0.0	0.0	1.5	2.8	89.4
TN5	0.0	0.0	0.7	0.0	1.0	14.8	5.8	77.6
TN6	0.0	0.3	0.5	1.6	1.0	7.5	4.3	84.8
S1	8.0	6.4	6.2	10.4	12.8	12.2	4.6	39.4
S2	0.7	1.0	2.2	4.4	8.8	24.4	18.0	40.3
S4	0.0	0.1	0.5	0.0	0.2	1.3	0.5	97.3

0730s

Amount of Ni, Cu, Pb, Zn, and Cr found in the sediments at each of the sampling sites. Data are reported as mg/kg (dry wt). Mean and standard deviation are given when appropriate. a- N=2, b- N=1, C- N=5

Sample	N	Ni	Cu	Pb	Cd	Zn	Cr
T1 (shallow)	4	37.3 ± 4.3	176 ± 10.8	151.3 ± 39.8	2.8 ± 0.5	140.5[a]	256.5 ± 26.1
T1 (deep)	2	49.5	371	28.5	1.7	114[b]	35
T2 (shallow)	2	86.5	1128.5	101	2.9	367[b]	71
T2 (deep)	2	127.5	836.5	196	3.7	402[b]	251
T3 (shallow)	2	22.5	121.5	116.5	2.9	96[b]	115
T3 (deep)	2	38	163.5	119.5	3.8	112[b]	145.5
T4 (shallow)	3	61.7 ± 2.4	303 ± 11.5	235.3 ± 46.5	8.9 ± 0.7	225[b]	430.3 ± 95.1
T4 (deep)	3	60.3 ± 6.3	271 ± 9.9	219.7 ± 25.2	8.0 ± 1.1	180[a]	302.7 ± 104.9
T5 (shallow)	2	92.5	235.5	212.5	13.0	307	313.5
T5 (deep)	3	306.3 ± 27.6	1063 ± 216.0	328.3 ± 88.3	8.7 ± 2.1	481.3 ± 59.7	821.3 ± 80.0
T6	3	71.0 ± 6.5	175.7 ± 9.0	23.7 ± 3.7	1.7 ± 0.3	109.7 ± 71.7	39.7 ± 27.1
T7	1	49	172	125	8.5	118	195
T8	1	52	110	25	2.8	75	25
T9	2	91.5	491	324	13.5	563.5	1196
GN1	3	502.3 ± 327.7	1917 ± 378.2	215.3 ± 40.4	4.2 ± 0.4	569.3 ± 78.2	920.3 ± 424.8
GN2	2	84	259.5	190.5	6.2	187	284.5
GN3	2	133	586.5	258	13.9	497.5	415.5

Sample	N	Ni	Cu	Pb	Cd	Zn	Cr
TN1	3	128.3 ± 61.5	166 ± 7.1	115.7 ± 15.8	3.9 ± 1.0	100.7 ± 4.1	309.7 ± 136.7
TN2	2	63.5	156.5	100.5	4.7	134	189
TN3	1	61	156	106	4.9	129	198
TN4	1	52	151	97	4.7	123	151
TN5	5	124.2 ± 40.3	229.4 ± 16.8	174.6 ± 24.5	5.5 ± 1.1	171.4 ± 53.5	459 ± 175.9
TN6	2	133	350	233.5	9.2	276.5	366
S1	3	218 ± 16.5	529 ± 28.5	164.3 ± 21.3	5.9 ± 0.7	332.7 ± 102.8	917.3 ± 175.1
S2	2	124	424.5	154	8	271.5	285
S4	1	87	602	249	120	241	334
NBS 1645							
recovered	6	53 ± 12.6	100.7 ± 9.2	767.7 ± 155.7	12.2 ± 1.5	1202.6 ± 637[c]	31019.2 ± 4359.4[c]
Certified		46	109	714	10.2	1720	29,600