ECOLOGICAL STUDY OF THE AQUATIC ENVIRONS OF THE PROPOSED NUCLEAR POWER STATION OF THE LONG ISLAND LIGHTING COMPANY AT SHOREHAM: 1970-1971 AND SUMMARY, 1968-1971.

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ECOLOGICAL STUDY OF THE AQUATIC ENVIRONS OF THE PROPOSED NUCLEAR POWER STATION OF THE LONG ISLAND LIGHTING COMPANY AT SHOREHAM: 1970-1971 AND SUMMARY, 1968-1971

I. INTRODUCTION

A pre-operational ecological study of the aquatic environs of the proposed nuclear power station of the Long Island Lighting Company at Shoreham was made in the summer of 1968 and results presented in a report by Alfred Perlmutter, dated January 1969, titled, "Ecological Study, 1968, Shoreham Nuclear Power Station, Long Island Lighting Company." In 1969, the program was expanded to include year-round coverage. The results of this study were submitted in a report by Alfred Perlmutter, dated July 1970, titled, "Ecological Study, 1969, Shoreham Nuclear Power Station, Long Island Lighting Company". A year-round study was made in 1970 and continued through the spring of 1971. In this report, the 1970-1971 data are presented in tabular form, and all data collected in the period 1968-1971 are summarized and discussed.

II. DESIGN OF THE PROGRAM

A. Purpose

The studies carried on during the period 1968-1971 were designed to obtain information on the ecology of the waters adjacent to the proposed Shoreham nuclear power station and in an area approximately two miles west in the town of Shoreham, prior to construction and operation of the station.

B. Sampling Period

The spring sampling period covered the months of April and May and through mid-June. During this period data was collected twice weekly on Saturdays and Sundays, when weather permitted. Physical and chemical data were taken

and plankton, bottom organisms and shore fishes were sampled.

The summer sampling period was July and August. Physical and chemical data were taken, plankton and shore fishes sampled and offshore fish counts made each Tuesday and Thursday. Bottom organisms were sampled four times during the summers of 1968, 1969 and 1970 at comparable periods. Also, two series of fouling tiles were exposed in the summers of 1968, 1969 and 1970.

The fall sampling period was October-November and the winter period December-March. The collecting procedure was the same as in the spring period, except that from January through March sampling was attempted for only one day a week, either on Saturday or Sunday.

C. Physical and Chemical Aspects

Physical and chemical parameters studied were temperatures of the surface and bottom water and the salinity, oxygen and copper content of the bottom water.

D. Biological Aspects

Biological parameters included quantitative studies of plankton, fouling and bottom organisms, young-of-the year (0+) and older fishes at the shore, and 0+ and older fishes more offshore.

III. PROCEDURE

A. Establishment of Sampling Stations

During the summer of 1970, sampling stations were established in the waters adjacent to the proposed Shoreham power plant (experimental area) and in the water adjacent to the shore in the region approximately two miles west, in the town of Shoreham (control area) as was done in the summer of 1968 and 1969. The center of both the experimental and control areas was established at 1600 feet offshore and identified by heavily anchored buoys. This position was chosen as the central point of the study areas because in

the experimental area preliminary engineering plans indicated that the coolant water would be carried by pipe and discharged at this point. In the experimental area 15 stations were designated, 4 to the north, 3 to the south, 4 to the east and 4 to the west. The Northern stations were called N1, N2, N4 and N6 and were respectively 300, 600, 1200 and 1800 feet north of the central buoy. The Southern stations were called S1, S2 and S4 and were respectively 300, 600 and 1200 feet south of the central buoy. East and West stations were called E1, E2, E4 and E6 and W1, W2, W4 and W6 were located in the appropriate directions at respective distances from the central buoy of 300, 600, 1200 and 1800 feet. The station pattern described was established in accordance with engineering predictions that effluent water would be almost completely mixed at a distance of 1800 feet from the outfall opening and that the effluent water would be carried as plumes to the east and west according to the tide. In the control area, 7 stations were designated, 4 to the north and 3 to the south. As in the experimental area, the Northern stations were called N1, N2, N4 and N6 and were respectively 300, 600, 1200 and 1800 feet north of the central buoy. The Southern stations were called S1, S2 and S4 and were respectively 300, 600 and 1200 feet south of the central buoy. No East or West stations were designated since there would be no effluent waters subject to tidal flow in this area.

B. Marking the Location of Sampling Stations

Distances from the central buoy to the stations were determined by use of a premeasured line and each station marked at the bottom by a cement building block. Floats were not attached to these blocks for more ready identification of the stations since such visible station markers were more likely to be disturbed by boatmen in the investigational area resulting in positional changes of the stations. Instead, a method for relocation of the stations by

means of the cement blocks at the bottom was evolved. To accomplish this, the blocks arranged in each compass direction were connected by nylon line to each other and to the anchors of the central buoy. A rod and reel with a brass swivel snap at the end of the line served as a "station finder instrument". In practice, location of stations in one compass direction involved the following steps. The drag on the fishing reel was set below the breaking strength of the fishing line by the crew member who guided the action of the apparatus from the boat above. This was done after attachment of the fishing line by a snap to the specific bottom nylon line which lead in the desired direction, from the point of its attachment to the central anchor. The boat then proceded slowly in the compass direction of the first station until the concrete marker of this station was reached as indicated by cessation of the sliding movement of the swivel snap. Progress to the next successive station followed a similar pattern, after a diver had moved the swivel snap from the line connecting the anchor of the central buoy to the block of the first or innermost station to the bottom nylon line connecting the first station to the second, more outwardly located station.

The bottom markers were connected by 1/8" braided nylon with an approximate breaking strength of 450 pounds. To minimize the effect of chaffing at the block, attachment of the connecting lines to the block was effected by lengths of 5/6" braided nylon with an approximate breaking strength of 2000 pounds.

During the remainder of the year, four stations, approximately 800 feet north, south, east and west of the opening of the outfall pipe, were sampled, both in the experimental and control areas.

C. Depth of Water at Stations

The depth of the water in the study areas is indicatied by depth data

taken at various stations at intervals from June through September in 1969 (See 1969 Ecological Study, Tables 87-88). Maximum depth is less than 25 feet.

D. Methods of Physical and Chemical Data Procurement and Analysis

Surface and bottom water temperatures were measured directly in the field by a mercury thermometer. Water was taken from the bottom by a water sampler for use in temperature, salinity, copper and oxygen determinations. Water for salinity and copper determinations was collected in a polyethylene bottle and brought to the laboratory. Here, salinity in terms of specific gravity was measured by a Vogel Urimometer, and copper measured with a Hach water analysis kit. The Hach kit was found to be unsuitable for determination of the low levels of copper present in the water and in 1970 water samples collected were analysed by Lilco chemists.

Water collected for oxygen determinations was placed in glass bottles and partially treated in the field. Analysis was completed in the laboratory following standard procedures for oxygen determination in water as modified for use with the Hach apparatus.

E. Methods of Biological Data Procurement and Analysis

1. Plankton

Plankton was collected by a No. 20 mesh, 1/2 meter nylon net. A calibrated plankton net meter was placed in the mouth of the net to record the amount of water passing through the net. The net was attached to a weighted line at a point three meters from the bottom. In the experimental area, during a sampling period two consecutive 10 minutes tows were made. One tow started at the central buoy and continued along a northeast course. The second tow was from the control buoy along a northwest course. In the control area, only one 10 minute tow was made from the central buoy along a northeast course. The plankton caught was preserved in 4 percent formalin for examination at the labora-

tory. During the summer period plankton samples were collected twice weekly, on Tuesdays and Thursdays. During the remainder of the year plankton samples were taken on Saturday and Sunday, when weather permitted.

At the laboratory the plankton from each sample was placed in one or more 100 ml. graduates, depending on the size of the plankton collection, and allowed to settle until the volume of the organisms present became stabilized. This volume together with the information obtained from the plankton net meters on volume of water strained was used to determine the total plankton concentration in terms of volume per cubic meter of water.

Water was then added to the concentrated plankton in a 500 ml. graduate until in smaller samples a total volume of 75 ml. was reached. Where the concentrated plankton sample was large it was necessary to break this sample up into several sub-samples for dilution to a volume of 75 ml. After vigorous stirring a .1 ml. sample of the plankton was immediately withdrawn from the diluted samples by a calibrated dropper and all of the organisms in this sample identified and counted. The 75 ml. aliquots were then pooled in a pint jar, stirred vigorously and a 10 ml. sample removed with a 10 ml. dipper. All fish eggs and fish larvae were sorted from this sample.

On the basis of these samples, the abundance of the various types of planktonic organisms, in terms of number per cubic meter of water, was computed.

2. Fouling Organisms

Collection of fouling organisms was effected by attachment of pieces of asbestos shingle, 100 by 160 mm. in size, by 1/8" braided nylon to the cement block station markers during the summer period. Two sets of plates were attached to the blocks marking each station. In 1968 one of the pairs was removed Aug. 5, after 24 days of exposure, and the second was removed on Sept. 3, after

53 days of exposure. In 1969 and 1970,one of the pairs was removed 38-40 days after exposure and the other, 67-69 days after exposure. The plates were immersed in 4 percent formalin and transmitted to the laboratory where the kind, number and extent of growth of organisms were determined.

3. Bottom Organisms

Bottom organisms were collected at each station in the summer period in late June, mid-July and mid-August and early September using a Dietz-La Fond heavy duty bottom sampler. This stainless steel sampler weighs 60 pounds and its spring loaded jaws encompass a bottom area of 16.5 by 10.0 cm. (165 sq. cm.) to a depth of 10 cm., or approximately 1 pint, in volume, of bottom. During the remainder of the year bottom samples were taken on Saturday and Sunday, when weather permitted.

The bottom sample was fixed with 4 percent formalin and brought to the laboratory for examination. At the laboratory, all of the bottom samples were carefully scrutinized and the organisms removed. These were then sorted by types and the number of each type tabulated. The number of each type per pint of bottom sample was used as a measure of abundance. An additional rough measure of abundance of bottom fauna was the weight in grams of animal tubes per pint of bottom sample. The tube weight included both initially empty tubes and those emptied by the investigator.

4. Fish

Samples of fish occurring inshore along the beach were collected in both the experimental and control areas. A 50 foot nylon seine of the following specifications was used to collect fish. The mesh size was 3/8 inch; the top and bottom lines were of 1/4 inch polypropyline. The top line had plastic floats (2 1/2 inches in diameter and 1 1/4 inches thick) every 15 inches, while the bottom line had a No. 9 oblong lead every 15 inches. Centrally located in the

body of the net was a pocket, of the same material as the rest of the net, which was 4 by 4 feet at its attachment and extended back for 6 feet.

The net was set at each area according to a fixed procedure. It was pulled out into the water perpendicular to the shore until a depth of about 4 feet was reached. The distance to this depth from the shoreline varied with the tide. At the prescribed position, the net was stretched parallel to the shore and then hauled to the beach. The product of the distance from the shore where the net was set and the length of the net was taken as the area seined. Fish sampling along the beach was undertaken in both areas twice a week, on Tuesdays and Thursdays during the summer period and on Saturdays and Sundays during the remainder of the year. During the latter half of the summer of 1969, fish samples were taken both 50 feet and 300 feet west of the newly constructed west stone jetty to see if this structure was influencing concentration of fishes. The fish were preserved in 4 percent formalin and brought to the laboratory for study.

At the laboratory each fish sample was sorted by species. The most abundant species were divided into two groups 0+ and older fish. The standard length (tip of snout to end of vertebral column) of all fish was measured by means of dividers and a steel rule. Measurements were to the nearest .1 mm. Using the recorded values for area seined and fishes caught in this area a measure of relative abundance was computed in terms of a hypothetical number of fish which would be present in 100,000 square feet of area seined.

Sampling of fish offshore could not be readily accomplished without interfering with bottom organism evaluations. At the suggestion of the New York State Department of Conservation, the populations of fish offshore in both areas was studied by direct underwater observation. In practice a diver swam along the bottom line from the central buoy north to station N1, a distance of

300 feet, and recorded the species and number of fish within his range of vision. Such observations were made twice weekly, on Tuesdays and Thursdays, in both the experimental and control areas, during the summer periods.

IV. RESULTS

A. Physical and Chemical Aspects

1. Water Temperature

Data on water temperature in 1970, and the spring of 1971, are summarized in Tables 1-12. Average weekly temperatures of the surface and bottom water during the weeks sampled from 1968-1971, are summarized in Tables 92-93. Average weekly temperatures for the period 1968-1971 are plotted in Figure 1. There is close agreement between the water temperatures in the experimental and control areas. Expectedly, surface temperatures were sometimes higher than bottom temperatures. Also expectedly, water temperatures were lowest in winter (minimum, -0.5°C.) and highest in summer (maximum, 23.9°C.).

2. Salinity

Salinity data for 1970, and the spring of 1971, are summarized in Tables 1-12. Average weekly salinities of the bottom water during the weeks sampled from 1968-1971, are summarized in Tables 92-93. Values obtained in the experimental and control areas are in close agreement. They ranged from 1.013-1.020 (9360-14400 p.p.m. of chloride; see Table 109, Salinity Equivalents).

3. Oxygen

Dissolved oxygen data for 1970, and the spring of 1971, are summarized in Tables 1-12. Average weekly dissolved oxygen values of the bottom water during the weeks sampled from 1968-1971, are summarized in Tables 92-93. Average weekly oxygen values for the period 1968-1971 are plotted in Figure 3. As with water temperature, the oxygen levels in the water in the experimental and control areas are in close agreement. These levels were usually high ap-

proaching saturation or showing supersaturation.

4. Copper

Copper content of the water, determined by the Hach apparatus and reported in the 1968 and 1969 reports were found to be exaggerated and erroneous. In 1970 samples of water were submitted for copper analysis to Lilco chemists who will report their findings elsewhere. Where?

B. Biological Aspects

1. Total Plankton Concentration(Volume)

Total plankton concentration was determined, in milliliters per cubic meter of water, as a measure of plankton abundance. Data obtained for 1970, and the spring of 1971, are summarized in Tables 13-18. Average weekly plankton concentrations during the weeks sampled from 1968-1971, are summarized in Table 94 and plotted in Figure 4. Plankton abundance, as indicated by plankton volume, appears to fluctuate in a similar manner in the experimental and control areas. Also, the levels of abundance in a weekly period are most frequently, very similar in both areas.

2. Total Plankton Concentration (Number)

Plankton concentration, in terms of number per cubic meter of water was also used as a measure of plankton abundance. Data obtained for 1970, and the spring of 1971, are summarized in Tables 19-42. Monthly averages of total zooplankton abundance from 1968-1971 are given in Tables 95-96 and graphed in Figure 5. In most months, the abundance of total zooplankton in the experimental and control areas was very similar. Copepods and their nauplii predominated in the catch. Their percentage of the catch each week, in the weeks sampled from 1968-1970, are given in Tables 97-98 and graphed in Figure 6-9. Monthly average abundance from 1968-1971, of copepod adults and copepod larvae as well as other major components of the zooplankton; namely, cladocerans,

barnacle larvae, gastropod larvae, lamellibranch larvae and polychaete larvae are given in Tables 95-96. In these same tables, total phytoplankton abundance is also given for the summer months from 1968-1970. A graphic comparison of the average monthly abundance of these forms in the experimental and control areas, for the months sampled from 1968-1971, is shown in Figures 10-12.

3. Abundance of Fish Eggs and Larvae

The abundance ot fish eggs and larvae, in terms of number per 1000 cubic meters, in 1970, and the spring of 1971 are summarized in Tables 43-48. Monthly averages of abundance of fish eggs and larvae, in the months sampled from 1968-1971, are given in Table 99. A graphic comparison of the monthly abundance of fish eggs and larvae, in the experimental and control areas, is shown in Figures 13-14. As with the zooplankton, the monthly average abundance of fish eggs and larvae in the experimental and control areas fluctuate in a similar manner, but levels of abundance in the two areas are in lesser agreement. This can most likely be attributed to the less random distribution of fish eggs as compared to zooplankton.

4. Abundance of Fouling Organisms

The abundance of fouling organisms in the summer of 1970 is summarized in Tables 88-89. In the summers of all three years (1968, 1969 and 1970) hydrozoans, bryozoans, worm tubes, barnacle and ascidians were the principle biota found on the fouling tiles. Worm tubes and barnacles could be more definitely enumerated than hydrozoan and bryozoan colonies. The average number of worm tubes per 160 sq. cm. plate in the experimental area in 1968, 1969 and 1970, after exposures of 24, 40 and 38 days in the respective years, was 10.2, 33.7 and 0.3 compared to 49.5, 1.3 and 0.0 in the control area. In these same three years, after exposure of 53, 69 and 67 days in the respective years, the average number of worm tubes in the experimental area was 27.3, 41.7 and 0.0 as

compared to 6.2, 12.1 and 0.0 in the control area.

The average number of barnacles per 160 sq. cm. plate in the experimental area in 1968, 1969 and 1970, after exposures of 24, 40 and 38 days in the respective years, was 25.3, 0.2 and 0.3 compared to 363.5, 0.1 and 0.0 in the control area. In these same three years, after exposure of 53, 69 and 67 days in the respective years the average number of barnacles in the experimental area was 70.2, 102.0 and 35.7 compared to 75.5, 153.2 and 18.2 in the control area.

5. Abundance of Bottom Organisms

The abundance of bottom organisms was computed in terms of number per 165 sq. cm. (depth 10.0 cm.) or 1 pint of bottom. The abundance of bottom organisms in 1970 and spring of 1971 is summarized in Tables 49-64. Monthly averages of abundance, in the months sampled from 1968-1971, are given in Tables 100-101. A graphic comparison of the average monthly abundance of all bottom organisms, for the months sampled from 1968-1971, is shown in Figure 15. The abundance of the total bottom fauna fluctuated in a similar manner in both areas. However, the level of abundance was usually higher in the experimental area during the summer months. The seasonal relative abundance of the various bottom organisms during the entire sampling period are summarized in Tables 102-103. Graphic comparison between the experimental and control areas is shown in Figures 16-17. Amphipods dominated the bottom fauna. Isopods, polychaetes and lamellibranchs comprised most of the remaining bottom fauna. Amphipods were more abundant in the experimental than in the control area during the summer months. Isopods were more abundant in the control area during most of the year.

The relative average monthly abundance of the various amphipod types, in the months sampled from 1968-1971, is summarized in Tables 104-105. Graphic

comparison of the relative average monthly abundance of the major amphipod types in the experimental and control areas is made in Figure 18. Amphipods A, D and E are the predominant types. Amphipod A comprised a higher percentage of the amphipods in the control than in the experimental area, throughout most of the year,while the reverse was true for Amphipods D and E. The seasonal relative abundance of the amphipod types during the entire sampling period are summarized in Tables 106-107. Graphic comparison of these data from the experimental and control areas, again show that Amphipod A made up a higher percentage of the amphipods in the control area, and Amphipods D and E, a higher percentage of the amphipods in the experimental area (Figure 19).

6. Weight of Tubes

The weights of tubes collected in the bottom samples in the summer of 1970 are given in Tables 90-91. The average number of tubes per bottom sample in the summers of 1968, 1969 and 1970 were: in the experimental area, 7.1, 4.3 and 4.4 respectively, and in the control area, 0.8, 0.7 and 6.2 respectively.

7. Relative Abundance of Shore Fishes

The relative abundance of fishes along the shore was computed in terms of number per 100,000 square feet of seining area. Data for 1970 and the spring of 1971 are summarized in Tables 65-74. The size composition of the silverside and other species of fishes taken during this period are summarized in Tables 75-85. Monthly average abundance of fishes,in the months samples from 1968 through 1971 in the experimental and control areas, are compared in Table 108. Fish abundance in the experimental and control areas fluctuated in a similar manner, but levels of abundance in the two areas were frequently very different, usually as a result of a sudden influx into the area of migrant species of fishes.

8. Abundance of Offshore Fishes

Fish counts from the central buoy to Station N1 made in the summer of 1970 are summarized in Tables 86-87. Although these counts were originally intended to be used as a measure of abundance of the offshore fishes, it is now considered that they are limited in this regard, and are more useful to indicate, in a qualitative way, the fishes present in the offshore waters. Fishes seen in both the experimental and control areas during the three summers of observation were: skate, Raja erinacea; winter (blackback) flounder, daylight flounder, silverside, sea bass, rudder fish, Seriola zonata; porgy, kingfish, common sea robin, cunner, tautog, puffer and sand launt. Fish not seen but taken by recreational fishermen in the general area were: bluefish, striped bass and mackerel.

V. CONCLUSIONS

The data presented for the experimental and control areas are intended to serve as a base for monitoring the effect of the Shoreham Nuclear Power Station when in operation, on the ecology of the area. At that time, data collected in the experimental area will reflect changes in the ecology resulting from both natural causes and power plant activities. Data collected in the control area, where power plant effects on the ecology will be minimal, will be used to differentiate between natural and power-plant induced changes in the ecology at Shoreham.

Table 1 Physical and Chemical Data: Experimental Area, Spring 1970. (April 18-June 14, 1970)

		Time High tide	Sample taken	Temp. Cent. Top	Temp. Cent. Bottom	Salinity (Sp. Grav.)	Oxygen (ppm.)
April	18	9:00	12:00	7.0	7.0	1.018	12.0
	25	13:24	11:30	9.5	8.5	1.019	13.0
	26	15:12 1/	12:00	9.5	9.0	1.019	12.5
May	2	9:30	12:13	10.5	10.5	1.019	12.5
	9	14:24	11:20	12.0	11.0	1.019	13.0
	10	15:12	12:20	13.0	12.0	1.019	13.0
	23	13:18	11:30	13.5	13.0	1.019	12.0
	24	14:06	11:30	13.0	13.5	1.019	11.5
	30	8:12	13:50	14.5	14.5	1.019	11.5
	31	9:06	13:50	14.5	14.5	1.019	10.5
June	6	13:18	13:50	15.5	15.0	1.019	11.0
	7	14:00	13:50	16.0	15.5	1.019	10.0
	13	6:54	14:00	18.5	18.0	1.019	10.0
	14	7:48	13:50	18.5	18.0	1.019	9.0

1/ Start of Daylight Saving Time.

Table 2 Physical and Chemical Data: Experimental Area, Summer 1970
(June 23-July 30, 1970)

Date	Time		Temp. (Fahr.)		Salinity	Oxygen
	High tide	Sample taken	Top	Bottom	(Sp. Grav.)	(ppm)
June 23	2:48	13:30	65.0	61.0	1.018	9.0
25	4:42	13:45	62.5	62.0	1.019	9.0
30	9:42	13:30	62.0	61.0	1.019	9.0
July 2	11:24	13:40	62.0	61.0	1.018	9.0
7	2:18	13:20	71.0	68.0	1.018	9.1
9	3:42	13:20	69.0	66.0	1.019	9.0
14	8:06	12:35	69.5	68.0	1.018	8.1
16	9:54	13:50	69.5	67.0	1.017	7.2
23	3:24	13:00	71.0	68.0	1.017	7.5
28	8:24	13:00	75.0	71.0	1.016	9.0
30	10:18	12:30	73.0	70.0	1.017	7.4

Table 3 Physical and Chemical Data: Experimental Area, Summer 1970 (Aug. 5-27, 1970)

Date	Time High Tide	Time Sample Taken	Temp. (Fahr.) Top	Temp. (Fahr.) Bottom	Salinity (Sp. Grav.)	Oxygen (ppm.)
Aug. 5	13:48	15:00	72.0	68.0	1.017	4.5
6	14:24	13:20	73.0	70.0	1.016	5.5
12	7:36	13:00	72.0	70.0	1.018	7.0
13	8:36	13:00	74.0	70.0	1.018	7.2
18	12:30	13:00	74.0	74.0	1.017	6.9
20	14:12	12:40	73.0	73.0	1.018	6.8
25	6:54	14:00	76.0	73.0	1.018	6.8
27	9:06	12:30	74.0	73.0	1.018	7.3

Table 4 Physical and Chemical Data: Experimental Area, Fall 1970 (Oct. 10-Nov. 28, 1970)

Date	Time		Temp. Cent.		Salinity	Oxygen
	High tide	Sample taken	Top	Bottom	(Sp. Grav.)	(ppm)
Oct. 10	7:54	12:30	19.5	19.5	1.019	9.0
11	8:54	12:45	19.0	19.0	1.020	7.0
24	7:54	12:30	18.5	19.0	1.019	7.6
31	11:36	11:45	15.5	16.0	1.019	7.9
Nov. 1	12:00	11:29	16.0	16.0	1.019	8.6
7	5:30	11:30	13.0	13.5	1.019	8.1
22	6:06	11:00	11.0	11.0	1.020	8.4
28	10:30	10:10	10.0	10.5	1.020	9.2

Table 5 Physical and Chemical Data: Experimental Area, Winter 1970 (Dec. 19, 1970-Mar. 28, 1971)

Date	Time: High tide	Time: Sample taken	Temp. Cent.: Top	Temp. Cent.: Bottom	Salinity (Sp. Grav.)	Oxygen (ppm)
1970 Dec. 19	3:30	12:50	6.0	6.0	1.020	9.8
1971 Jan. 3	3:29	11:50	2.0	2.0	1.020	12.1
10	10:05	12:00	2.0	1.0	1.020	12.2
23	7:59	11:20	0.0	-0.5	1.020	12.1
Mar. 6	6:47	11:00	2.5	2.0	1.020	13.1
14	12:11	11:14	2.0	1.5	1.020	13.8
28	12:11	11:15	3.0	3.0	1.020	12.0

Table 6 Physical and Chemical Data: Experimental Area, Spring 1971
(April 3-June 13, 1971)

Date 1971		Time: High tide	Time: Sample taken	Temp. Cent.: Top	Temp. Cent.: Bottom	Salinity (Sp. Grav.)	Oxygen (ppm)
April	3	5:17	11:20	5.5	5.5	1.020	11.5
	4	6:23	11:00	5.0	5.0	1.020	11.5
	11	11:35	11:00	5.0	5.5	1.020	10.6
	17	15:23	11:25	6.5	6.0	1.019	9.2
	18	16:23	11:00	6.5	6.5	1.020	9.5
	24	10:17	11:15	8.0	8.0	1.020	11.7
May	1	16:41	11:50	8.5	8.5	1.019	8.5
	2	17:47	10:50	9.0	9.0	1.019	8.7
	15	15:11	12:00	11.5	12.0	1.019	8.2
	22	10:05	11:30	13.0	13.0	1.019	9.0
	23	10:59	11:05	13.0	13.0	1.019	9.4
	29	15:17	11:40	14.0	14.5	1.019	8.1
June	5	9:29	11:07	16.5	16.5	1.019	8.2
	6	10:17	11:15	17.0	15.5	1.019	8.6
	12	14:05	11:30	18.0	17.0	1.018	7.5
	13	14:53	11:32	17.5	18.0	1.019	7.6

Table 7 Physical and Chemical Data: Control Area, Spring 1970 (April 18-June 14, 1970.)

Date	Time High Tide	Sample taken	Temp. Cent. Top	Temp. Cent. Bottom	Salinity (Sp. Grav.)	Oxygen (ppm.)
Apr. 18	9:00	10:30	6.5	6.5	1.019	12.5
25	13:24	10:30	8.5	8.5	1.019	13.0
26	15:12 1/	11:15	9.0	9.0	1.019	12.5
May 2	9:30	11:00	10.5	11.0	1.019	12.0
9	14:24	10:30	10.5	11.0	1.020	13.0
10	15:12	11:00	12.0	12.0	1.02	13.0
23	13:18	10:45	14.5	13.5	1.019	12.0
24	14:06	10:30	13.0	13.5	1.019	11.5
30	8:12	13:00	14.0	14.0	1.019	12.0
31	9:06	13:00	14.5	14.5	1.019	10.5
June 6	13:18	13:00	15.5	15.5	1.019	11.0
7	14:00	13:00	16.0	15.5	1.019	10.0
13	6:54	13:15	18.0	18.0	1.019	10.0
14	7:48	13:00	18.5	18.0	1.019	9.0

1/ Start of Daylight Saving Time.

Table 8 Physical and Chemical Data: Control Area, Summer 1970
(June 23-July 30, 1970)

Date	Time: High tide	Time: Sample taken	Temp. (Fahr.): Top	Temp. (Fahr.): Bottom	Salinity (Sp. Grav.)	Oxygen (ppm)
June 23	2:48	10:10	63.0	61.0	1.018	9.0
25	4:42	10:10	61.5	61.0	1.019	9.0
30	9:42	10:10	61.5	61.0	1.019	9.0
July 2	11:24	9:25	63.0	62.0	1.018	9.0
7	2:18	10:30	69.0	66.0	1.019	9.1
9	3:42	10:30	69.0	65.5	1.019	8.2
14	8:06	10:30	69.0	66.0	1.018	7.9
16	9:54	11:15	67.5	65.0	1.017	6.1
23	3:24	10:15	69.5	68.0	1.017	8.2
28	8:24	10:30	73.0	70.0	1.016	8.6
30	10:18	10:30	73.0	69.0	1.016	7.5

Table 9 Physical and Chemical Data: Control Area, Summer 1970 (Aug. 5-27, 1970)

Date	Time High tide	Time Sample taken	Temp. (Fahr.) top	Temp. (Fahr.) bottom	Salinity (sp. grav.)	Oxygen (ppm.)
Aug. 5	13:48	13:50	73.0	69.0	1.016	6.9
6	14:24	10:50	70.5	68.0	1.017	5.5
12	7:36	10:30	70.0	69.0	1.016	6.9
13	8:36	10:30	72.0	70.0	1.017	6.9
18	12:30	10:30	73.0	73.0	1.018	6.8
20	14:12	10:25	73.0	73.0	1.018	6.1
25	6:54	11:00	73.0	72.0	1.018	8.4
27	9:06	10:30	72.0	72.0	1.017	7.5

Table 10 Physical and Chemical Data: Control Area, Fall 1970 (Oct. 10-Nov. 28, 1970)

Date	Time: High tide	Time: Sample taken	Temp. Cent.: Top	Temp. Cent.: Bottom	Salinity (Sp. Grav.)	Oxygen (ppm)
Oct. 10	7:54	14:00	19.0	19.0	1.019	9.7
11	8:54	11:00	19.0	18.5	1.019	7.6
24	7:54	11:00	18.5	18.0	1.020	8.0
31	11:36	11:00	15.5	16.0	1.019	7.9
Nov. 1	12:00	10:30	14.5	15.0	1.019	8.8
7	5:30	10:30	13.5	14.0	1.019	8.3
22	6:06	10:15	11.0	11.0	1.020	9.0
28	10:30	9:25	9.0	9.0	1.020	9.0

Table 11 Physical and Chemical Data: Control Area, Winter 1970 (Dec. 19, 1970-Mar. 28, 1971)

Date	Time High tide	Time Sample taken	Temp. Cent. Top	Temp. Cent. Bottom	Salinity (Sp. Grav.)	Oxygen (ppm)
1970						
Dec. 19	3:30	11:45	6.0	6.0	1.020	10.2
1971						
Jan. 3	3:29	11:00	1.5	2.0	1.020	12.5
10	10:05	11:20	1.0	1.0	1.020	12.4
23	7:59	10:15	-0.5	-0.5	1.020	13.0
Mar. 6	6:47	10:15	1.5	2.0	1.020	13.7
14	12:11	10:20	2.0	2.0	1.020	13.4
28	12:11	10:30	2.5	2.5	1.020	12.4

Table 12. Physical and Chemical Data: Control Area, Spring 1971
(April 3-June 13, 1971)

Date 1971		Time: High tide	Time: Sample taken	Temp. Cent.: Top	Temp. Cent.: Bottom	Salinity (Sp. Grav.)	Oxygen (ppm)
April	3	5:17	10:45	4.5	5.0	1.020	11.7
	4	6:23	10:00	5.0	5.0	1.020	12.0
	11	11:35	10:20	4.5	5.0	1.020	10.3
	17	15:23	10:30	6.0	6.0	1.019	9.0
	18	16:23	10:10	6.5	6.0	1.020	9.0
	24	10:17	10:30	7.5	7.0	1.019	10.8
May	1	16:41	10:20	8.5	8.0	1.020	8.5
	2	17:47	10:20	8.5	8.0	1.020	9.0
	15	15:11	10:45	11.0	11.0	1.019	7.9
	22	10:05	11:00	12.5	13.0	1.019	8.6
	23	10:59	10:15	12.0	12.0	1.018	9.2
	29	15:17	10:20	13.5	14.0	1.019	8.0
June	5	9:29	10:15	17.0	15.5	1.018	8.4
	6	10:17	10:30	16.5	16.5	1.019	9.0
	12	14:05	10:30	17.0	17.5	1.019	7.8
	13	14:53	10:30	17.0	17.0	1.019	7.5

Table 13 Total Plankton Concentration: Experimental and Control Areas, Spring 1970 (April 18-June 14, 1970)

		Experimental N. W.			Experimental N. E.			Control N. E.		
		Plankton Volume1/	Water Strained2/	Plankton Per Cubic Meter3/	Plankton Volume1/	Water Strained2/	Plankton Per Cubic Meter3/	Plankton Volume1/	Water Strained2/	Plankton per cubic meter3/
April	18	138	137	1.01	240	147	1.63	275	137	2.00
	25	68	120	0.57	40	125	0.32	55	103	0.53
	26	83	132	0.63	128	162	0.79	38	105	0.36
May	2	88	142	0.62	170	248	0.69	85	123	0.69
	9	60	182	0.33	78	166	0.47	240	222	1.08
	10	206	169	1.22	220	137	1.61	300	146	2.05
	23	440	140	3.14	185	159	1.16	312	137	2.27
	24	340	115	3.00	340	104	3.26	384	116	3.31
	30	280	112	2.50	217	103	2.10	280	174	1.61
	31	165	168	0.98	250	157	1.59	129	180	0.72
June	6	40	165	0.24	33	184	0.18	48	209	0.23
	7	22	108	0.20	24	144	0.17	33	125	0.26
	13	50	158	0.32	28	157	0.18	49	170	0.29
	14	31	189	0.16	35	190	0.18	53	196	0.27

1/ Total plankton taken, in milliliters.
2/ Volume of water strained by the plankton net, in cubic meters.
3/ Quantity of plankton, in milliliters, in each cubic meter of water.

Table 14 Total Plankton Concentration: Experimental and Control Areas, Summer 1970 (June 23-July 30, 1970).

Date	Experimental N. W.			Experimental N. E.			Control N. E.		
	Plankton Volume 1/	Water Strained 2/	Plankton per cubic meter 3/	Plankton Volume 1/	Water Strained 2/	Plankton per cubic meter 3/	Plankton Volume 1/	Water Strained 2/	Plankton per cubic meter 3/
June 23	222	63	3.52	115	84	1.37	291	119	2.45
25	122	82	1.49	112	83	1.35	64	70	0.91
30	85	12	7.08	121	63	1.92	60	35	1.71
July 2	148	53	2.79	71	12	5.92	100	57	1.75
7	53	87	0.61	75	89	0.84	76	78	0.97
9	150	101	1.49	34	77	0.44	95	91	1.04
14	36	95	0.38	25	95	0.26	22	74	0.30
16	39	35	1.11	55	46	1.20	86	43	2.00
23	30	21	1.43	55	37	1.49	91	106	0.86
28	131	42	3.12	166	50	3.32	197	71	2.77
30	156	53	2.94	105	78	1.35	120	82	1.46

1/ Total plankton taken in milliliters.
2/ Volume of water strained by the plankton net in cubic meters.
3/ Quantity of plankton in milliliters in each cubic meter of water.

Table 15 Total Plankton Concentration: Experimental and Control Area, Summer 1970 (Aug. 5-27, 1970)

Date	Experimental N. W.			Experimental N. E.			Control N. E.		
	Plankton Volume[1]	Water Strained[2]	Plankton Per Cubic Meter[3]	Plankton Volume[1]	Water Strained[2]	Plankton Per Cubic Meter[3]	Plankton Volume[1]	Water Strained[2]	Plankton Per Cubic Meter[3]
Aug. 5	5	49	0.10	40	51	0.78	13	70	0.19
6	5	83	0.06	8	82	0.10	9	80	0.11
12	2	38	0.05	5	100	0.05	4	88	0.05
13	5	33	0.15	4	58	0.07	3	37	0.08
18	5	16	0.31	10	49	0.20	4	21	0.19
20	2	151	0.01	3	153	0.02	3	223	0.01
25	4	24	0.17	4	18	0.22	19	19	1.00
27	11	26	0.42	9	9	1.00	20	35	0.57

1/ Total plankton taken in milliliters.
2/ Volume of water strained by the plankton net in cubic meters.
3/ Quantity of plankton in milliliters in each cubic meter of water.

Table 16 Total Plankton Concentration: Experimental and Control areas, Fall 1970 (Oct. 10-Nov. 28, 1970)

Date	Experimental N. W.			Experimental N. E.			Control N. E.		
	Plankton Volume1/	Water Strained2/	Plankton Per Cubic Meter3/	Plankton Volume1/	Water Strained2/	Plankton Per Cubic Meter3/	Plankton Volume1/	Water Strained2/	Plankton Per Cubic Meter3/
Oct. 10	66	59	1.12	130	49	2.65	58	51	1.14
11	79	53	1.49	177	52	2.40	134	50	2.68
24	25	45	0.56	45	66	0.68	55	42	1.31
31	65	59	1.10	93	83	1.12	59	72	0.82
Nov. 1	87	62	1.40	79	50	1.58	85	42	2.02
7	78	89	0.88	82	87	0.94	100	155	0.65
22	106	28	3.78	95	33	2.88	89	29	3.07
28	68	12	5.67	61	38	1.61	82	43	1.91

1/ Total plankton taken, in milliliters
2/ Volume of water strained by the plankton net, in cubic meters
3/ Quantity of plankton, in milliliters, in each cubic meter of water

Table 17 Total Plankton Concentration: Experimental and Control Areas, Winter 1970 (Dec. 19, 1970-Mar. 28, 1971)

Date	Experimental N. W. Plankton Volume1/	Experimental N. W. Water Strained2/	Experimental N. W. Plankton Per Cubic Meter3/	Experimental N. E. Plankton Volume1/	Experimental N. E. Water Strained2/	Experimental N. E. Plankton Per Cubic Meter3/	Control N. E. Plankton Volume1/	Control N. E. Water Strained2/	Control N. E. Plankton Per Cubic Meter3/
1970									
Dec. 19	60	60	1.00	83	86	0.97	100	104	0.96
1971									
Jan. 3	46	50	0.92	46	55	0.84	66	46	1.43
10	60	63	0.95	60	73	0.82	76	51	1.49
23	201	34	5.91	328	31	10.58	144	29	4.97
Mar. 6	230	17	13.52	225	15	15.00	215	16	13.43
14	265	12	22.08	234	18	13.00	250	11	22.72
28	135	45	3.00	160	39	4.11	121	26	4.65

1/ Total plankton taken in milliliters.
2/ Volume of water strained by the plankton net, in cubic meters.
3/ Quantity of plankton in milliliters in each cubic meter of water.

Table 18 Total Plankton Concentration: Experimental and Control Areas, Spring 1971 (April 3-June 13, 1971)

Date		Experimental N. W. Plankton Volume1/	Water Strained2/	Plankton Per Cubic Meter3/	Experimental N. E. Plankton Volume1/	Water Strained2/	Plankton Per Cubic Meter3/	Control N. E. Plankton Volume1/	Water Strained2/	Plankton Per Cubic Meter3/
1971										
April	3	93	33	2.82	110	35	3.14	130	30	4.33
	4	88	28	3.14	68	45	1.51	71	26	2.73
	11	91	49	1.86	65	42	1.55	65	39	1.67
	17	45	67	0.67	35	58	0.63	51	45	1.13
	18	82	55	1.49	62	43	1.44	40	28	1.43
	24	100	63	1.59	110	51	2.16	28	92	0.30
May	1	19	42	0.45	18	60	0.30	40	49	0.82
	2	30	53	0.57	22	56	0.39	36	38	0.95
	15	90	72	1.25	62	47	1.32	24	54	0.44
	22	34	45	0.76	36	76	0.47	58	61	0.95
	23	300	113	2.65	230	114	2.02	36	105	0.34
	29	280	250	1.12	182	210	0.87	310	187	1.66
June	5	93	254	0.37	91	281	0.32	200	283	0.71
	6	68	181	0.38	130	237	0.55	75	255	0.29
	12	98	93	1.05	127	75	1.69	240	147	1.63
	13	190	120	1.58	147	144	1.02	202	152	1.33

1/ Total plankton taken in milliliters.
2/ Volume of water strained by the plankton net, in cubic meters.
3/ Quantity of plankton in millileters in each cubic meter of water.

Table 19 Abundance of Plankton: Experimental Area, N. E. Tow, Spring 1970. (April 18-June 14, 1970)

Date		Number per cubic meter of water													
		Total	Copepods	Cladocera	Nauplii	Barnacle Nauplii	Megalops	Zoea	Polychaete larvae	Medusa	Foraminifera	Mysid Nauplii	Fish eggs	Fish larvae	Phytoplankton
April	18	3495	2580	–	544	278	–	–	–	93	–	–	–	–	1/
	25	1008	800	–	134	58	–	–	–	16	–	–	–	–	1/
	26	2500	2277	–	104	35	–	–	–	84	–	–	–	–	1/
May	2	3480	3258	–	116	39	–	–	–	67	–	–	–	–	1/
	9	1052	795	–	178	53	–	–	–	2	–	–	20	4	2/
	10	5499	4590	–	718	149	–	–	–	9	–	–	33	–	1/
	23	5010	4226	–	533	136	–	–	–	–	–	91	24	–	2/
	24	8270	7108	46	800	154	–	–	15	15	–	77	55	–	1/
	30	7467	6641	70	466	93	–	23	–	–	12	151	4	7	1/
	31	3306	3032	5	173	31	–	10	5	–	10	31	3	6	1/
June	6	541	374	82	54	23	–	–	–	–	4	4	–	–	1/
	7	447	240	92	19	–	–	–	–	–	95	–	1	–	1/
	13	321	277	5	8	8	–	3	–	–	16	3	1	–	1/
	14	111	47	18	28	5	–	1	–	–	–	11	–	1	1/

1/ Phytoplankton scarce.
2/ Phytoplankton abundant (Actinastrum).

Table 20 Abundance of Plankton: Experimental Area, N. E. Tow, Summer 1970 (June 23-July 30, 1970)

Number per cubic meter of water

Date	Total	Copepods	Cladocera: Podon	Cladocera: Evadne	Nauplii	Barnacle Nauplii	Barnacle Cyprids	Shrimp Larvae	Zoea	Gastropod Veligers	Lamellibranch Veligers	Polychaete Larvae	Invertebrate Eggs	Fish Eggs	Coscinodiscus	Actinastrum
June 23	34205	23509	–	–	8661	–	9	–	250	259	–	–	36	17	–	1464
25	35983	27298	–	–	6271	–	9	–	117	127	–	18	289	11	–	1843
30	24203	18369	–	–	1810	–	–	–	–	71	12	36	–	12	2631	1262
July 2	71594	52687	–	–	14250	–	–	–	125	375	–	250	500	32	1125	2250
7	14162	9388	93	581	2823	–	8	–	17	152	–	573	17	4	278	228
9	3738	1526	97	438	886	–	–	–	–	39	–	380	39	2	253	78
14	2860	652	745	76	268	–	–	–	8	45	–	89	–	1	968	8
16	28007	13337	264	244	10614	–	–	–	–	750	–	440	261	11	1500	586
23	25960	12199	7052	699	5188	–	–	20	–	284	–	385	–	21	142	–
28	36871	24855	844	405	7215	–	15	15	30	795	–	2460	15	12	165	45
30	2336	1048	458	125	116	10	19	19	19	192	29	288	–	13	–	–

Table 21 Abundance of Plankton: Experimental Area, N. E. Tow, Summer 1970 (Aug.5-27, 1970)

Date	Total	Number per cubic meter of water														
		Copepods	Cladocera		Nauplii	Barnacle Nauplii	Barnacle Cyprids	Shrimp Larvae	Zoea	Gastropod Veligers	Lamellibranch Veligers	Polychaete Larvae	Invertebrate Eggs	Fish Eggs	Coscinodiscus	Actinastrum
			Podon	Evadne												
Aug. 5	1795	1559	–	–	108	–	20	5	–	25	10	34	–	–	34	–
6	304	149	3	–	52	–	9	–	–	30	–	3	–	–	49	9
12	86	25	–	–	35	–	–	2	2	–	10	–	–	–	7	5
13	86	22	–	–	34	–	–	–	–	–	4	4	–	1	17	4
18	434	–	–	–	–	–	–	–	–	36	–	–	–	–	393	5
20	55	5	–	–	5	–	–	–	–	5	–	–	–	–	38	2
25	3361	42	–	–	208	–	–	–	14	–	–	–	–	–	3097	–
27	6921	2361	–	–	194	28	83	–	–	83	56	28	–	5	4083	–

Table 22 Abundance of Plankton: Experimental Area
N. E. Tow, Fall 1970 (Oct. 10-Nov. 28, 1970)

Date	Number per cubic meter of water								
	Total	Copepods	Cladocera	Nauplii	Barnacle Nauplii	Polychaete larvae	Foraminifera	Fish eggs	Phytoplankton
Oct. 10	42566	9061	98	29829	3576	-	-	2	1/
11	36599	27000	-	8769	738	-	92	-	1/
24	4601	3795	-	761	34	11	-	-	1/
31	10828	9643	-	954	231	-	-	-	1/
Nov. 1	12696	11880	-	744	72	-	-	-	1/
7	9531	9007	14	455	55	-	-	-	1/
22	20399	17818	-	2145	436	-	-	-	2/
28	8902	6987	-	1757	158	-	-	-	1/

1/ Coscinodiscus abundant
2/ Coscinodiscus present; not abundant

Table 23 Abundance of Plankton: Experimental Area, N. E. Tow, Winter 1970 (Dec. 19, 1970-Mar. 28, 1971)

Number per cubic meter of water

Date		Total	Copepods	Cladocera	Nauplii	Barnacle Nauplii	Invertebrate Eggs	Foraminifera	Fish Larvae	Phytoplankton
1970										
Dec.	19	5595	4047	98	1242	209	-	-	1	1/
1971										
Jan.	3	5578	3791	-	1773	-	-	14	-	2/
	10	4994	2723	31	1870	-	370	-	-	3/
	23	10452	6039	-	4413	-	-	-	-	4/
Mar.	6	-	-	-	-	-	-	-	-	5/
	14	400	400	-	-	-	-	-	-	5/
	28	38462	8800	-	29662	-	-	-	-	6/

1/ Coscinodiscus abundant.
2/ Filamentous algae abundant. Coscinodiscus present.
3/ Actinastrum, Coscinodiscus and filamentous algae very abundant.
4/ Filamentous algae, Melosira very abundant.
5/ Phytoplankton very abundant; filamentous algae, diatoms, Coscinodiscus, Actinastrum.
6/ Phytoplankton abundant; filamentous algae, diatoms, Coscinodiscus, Actinastrum.

Table 24 Abundance of Plankton: Experimental Area, N. E. Tow, Spring 1971 (April 3-June 13, 1971)

Number per cubic meter of water

Date 1971		Total	Copepods	Cladocera	Nauplii	Barnacle Nauplii	Medusae	Polychaete Larvae	Invertebrate Eggs	Foraminifera	Zoea	Megalops	Phytoplankton
April	3	16079	8297	-	7234	411	-	-	103	34	-	-	1/
	4	13750	5517	67	7933	100	-	16	117	-	-	-	1/
	11	8321	6553	107	1071	429	89	36	36	-	-	-	1/
	17	4176	3233	-	595	207	77	-	64	-	-	-	2/
	18	10534	8215	35	1430	331	471	35	17	-	-	-	3/
	24	10964	9482	-	1247	188	-	47	-	-	-	-	4/
May	1	1987	1412	-	575	-	-	-	-	-	-	-	1/
	2	6094	4098	-	1768	174	54	-	-	-	-	-	3/
	15	8027	2042	-	5745	128	80	-	32	-	-	-	5/
	22	4182	2092	-	1974	-	109	-	-	-	10	-	4/
	23	13789	13263	21	274	-	189	-	-	-	21	21	4/
	29	6811	6446	-	297	-	57	-	11	-	-	-	6/
June	5	2336	1973	-	320	-	8	-	17	4	8	4	6/
	6	3088	2653	-	385	-	-	-	30	-	20	-	6/
	12	11136	3552	6240	1120	-	32	32	160	-	-	-	5/
	13	5500	2800	2167	483	-	-	-	50	-	-	-	5/

1/ Coscinodiscus, Actinastrum abundant.
2/ Coscinodiscus abundant.
3/ Coscinodiscus present.
4/ No phytoplankton.
5/ Actinastrum present.
6/ Actinastrum abundant.

Table 25 Abundance of Plankton: Experimental Area, N. W. Tow, Spring 1970. (April 18-June 14, 1970)

Date		Number per cubic meter of water													
		Total	Copepods	Cladocera	Nauplii	Barnacle Nauplii	Megalops	Zoea	Polychaete larvae	Medusa	Foraminifera	Mysid Nauplii	Fish eggs	Fish larvae	Phytoplankton
April	18	4702	3651	–	769	282	–	–	–	–	–	–	–	–	1/
	25	2961	2467	–	290	204	–	–	–	–	–	–	–	–	1/
	26	2876	2242	–	264	370	–	–	–	–	–	–	–	–	1/
May	2	1023	924	–	14	65	–	–	–	20	–	–	–	–	1/
	9	698	301	–	248	125	–	–	–	2	–	–	21	4	2/
	10	2937	1662	–	426	114	–	–	–	–	–	–	735	–	3/
	23	8228	7486	–	357	114	–	14	14	–	–	114	129	–	1/
	24	12689	10157	28	1085	250	–	–	28	–	–	223	918	–	1/
	30	10533	9482	32	675	150	–	–	21	–	–	161	2	10	1/
	31	3843	3500	21	164	21	–	21	–	–	–	107	4	5	1/
June	6	1095	758	206	95	23	–	–	2	–	–	11	–	–	1/
	7	698	579	17	39	–	2	–	–	–	53	7	1	–	1/
	13	935	823	44	38	9	–	2	–	–	5	13	1	–	1/
	14	403	353	24	19	1	–	–	–	–	–	1	3	2	1/

1/ Phytoplankton scarce.
2/ Phytoplankton abundant (Actinastrum, Coscinodiscus).

Table 26 Abundance of Plankton: Experimental Area, N. W. Tow Summer 1970 (June 2-July 30, 1970)

Number per cubic meter of water

Date	Total	Copepods	Cladocera		Nauplii	Barnacle Nauplii	Barnacle Cyprids	Shrimp Larvae	Zoea	Gastropod Veligers	Lamellibranch Veligers	Polychaete Larvae	Invertebrate Eggs	Fish Eggs	Coscinodiscus	Actinastrum
			Podon	Evadne												
June 23	122534	100857	–	12	18762	–	–	–	95	476	–	–	48	22	–	2262
25	21492	16948	–	18	2762	–	–	–	64	119	–	37	146	8	860	530
30	144269	105062	–	–	6625	–	–	–	1000	312	62	–	312	22	23062	7812
July 2	41805	29222	–	255	9849	–	–	–	198	354	–	184	113	16	722	892
7	10401	6164	43	500	1819	–	9	–	17	95	–	1491	43	5	155	60
9	14282	7233	772	1455	2762	–	–	–	–	30	–	1025	15	4	965	22
14	2752	1066	597	87	468	–	–	–	–	29	–	124	8	2	366	5
16	31168	18213	1864	1221	6942	–	–	–	64	192	–	643	–	6	1993	30
23	33974	10748	8962	1963	9427	–	–	36	–	214	–	928	–	18	1678	–
28	54935	30108	12590	161	10661	–	89	–	36	643	89	413	–	20	89	54
30	41938	31135	1545	28	6354	42	14	14	28	1203	241	699	–	8	570	57

Table 27 Abundance of Plankton: Experimental Area, N. W. Tow, Summer 1970 (Aug. 5-27, 1970)

Number per cubic meter of water

Date	Total	Copepods	Cladocera		Nauplii	Barnacle Nauplii	Barnacle Cyprids	Shrimp Larvae	Zoea	Gastropod Veligers	Lamellibranch Veligers	Polychaete Larvae	Invertebrate Eggs	Fish Eggs	Coscinodiscus	Actinastrum
			Podon	Evadne												
Aug. 5	1261	974	–	–	112	–	31	5	–	31	–	77	–	–	31	–
6	221	90	–	–	66	–	9	–	–	21	–	15	–	–	18	2
12	257	46	–	–	112	–	–	–	–	33	–	33	–	–	33	–
13	335	121	–	–	114	–	8	8	–	15	–	8	–	1	45	15
18	656	–	–	–	47	–	–	–	–	31	–	16	–	–	562	–
20	58	5	–	–	17	–	–	–	–	5	–	–	–	–	31	–
25	1181	41	–	10	146	–	–	–	–	–	–	–	–	–	948	–
27	1606	692	–	–	144	19	10	–	–	38	–	10	–	1	692	–

Table 28 Abundance of Plankton: Experimental Area
N. W. Tow, Fall 1970 (Oct. 10-Nov. 28, 1970

Date	Number per cubic meter of water								
	Total	Copepods	Cladocera	Nauplii	Barnacle Nauplii	Polychaete larvae	Foraminifera	Fish Eggs	Phytoplankton
Oct. 10	13436	2097	-	9903	1436	-	-	-	1/
11	18227	11321	-	6453	430	-	23	-	2/
24	5850	4000	-	1750	100	-	-	-	2/
31	8313	7525	-	610	178	-	-	-	1/
Nov. 1	9231	8612	-	542	77	-	-	-	1/
7	11124	10517	-	499	108	-	-	-	1/
22	22199	20271	-	1414	514	-	-	-	1/
28	32624	24312	-	6187	2125	-	-	-	1/

1/ Coscinodiscus abundant
2/ Coscinodiscus present; not abundant

Table 29 Abundance of Plankton: Experimental Area, N. W. Tow, Winter 1970 (Dec. 19, 1970-Mar. 28, 1971)

Date 1970		Number per cubic meter of water								
		Total	Copepods	Cladocera	Nauplii	Barnacle Nauplii	Invertebrate Eggs	Foraminifera	Fish Larvae	Phytoplankton
Dec.	19	8013	6125	87	1788	12	-	-	1	1/
1971										
Jan.	3	5475	4110	30	1335	-	-	-	-	2/
	10	3727	2060	24	1298	-	345	-	-	2/
	23	4588	2612	-	1976	-	-	-	-	3/
Mar.	6	-	-	-	-	-	-	-	-	4/
	14	-	-	-	-	-	-	-	-	4/
	28	30026	8213	-	21760	-	53	-	-	5/

1/ Coscinodiscus present.
2/ Filamentous algae very abundant; Coscinodiscus present.
3/ Filamentous algae, Melosira very abundant.
4/ Phytoplankton very abundant; filamentous algae, diatoms, Coscinodiscus, Actinastrum.
5/ Filamentous algae, diatoms, Coscinodiscus, Actinastrum abundant.

Table 30 Abundance of Plankton: Experimental Area, N.W. Tow, Spring 1971 (April 3-June 13 1971)

Number per cubic meter of water

Date 1971		Total	Copepods	Cladocera	Nauplii	Barnacle Nauplii	Medusa	Polychaete Larvae	Invertebrate Eggs	Foraminifera	Zoea	Megalops	Phytoplankton
Apr.	3	18181	8036	36	9709	291	36	73	-	-	-	-	1/
	4	19800	7543	129	11871	257	-	-	-	-	-	-	1/
	11	9573	7273	49	1616	318	122	24	171	-	-	-	2/
	17	2104	1791	-	213	33	67	-	-	-	-	-	1/
	18	6960	4996	-	1440	218	218	44	44	-	-	-	3/
	24	7352	6476	-	305	552	19	-	-	-	-	-	4/
May	1	3482	2464	-	750	232	36	-	-	-	-	-	1/
	2	6238	4641	-	1486	198	99	-	14	-	-	-	3/
	15	8417	3767	-	4467	100	83	-	-	-	-	-	5/
	22	7516	4050	100	3133	-	167	-	16	-	50	-	4/
	23	13380	12265	-	796	-	287	-	32	-	-	-	4/
	29	9576	9360	-	173	14	14	-	-	-	-	14	6/
June	5	1809	1687	-	104	-	-	-	14	5	-	-	6/
	6	1371	675	-	646	-	12	-	12	12	8	4	6/
	12	8387	3871	3677	684	-	13	-	-	-	142	-	6/
	13	12398	11416	143	697	-	16	-	32	-	95	-	4/

1/ Coscinodiscus, Actinastrum abundant.
2/ Coscinodiscus abundant.
3/ Coscinodiscus present.
4/ No phytoplankton.
5/ Actinastrum present.
6/ Actinastrum abundant.

Table 31 Abundance of Plankton: Experimental Area, Average of N. E. and N. W. Tows, Spring 1970 (April 18-June 14, 1970).

Number per cubic meter of water

Date		Total	Copepods	Cladocera	Nauplii	Barnacle Nauplii	Megalops	Zoea	Polychaete larvae	Medusa	Foraminifera	Mysid Nauplii	Fish eggs	Fish larvae	Phytoplankton
April	18	4078	3115	—	606	280	—	—	—	46	—	—	—	—	1/
	25	1984	1633	—	212	131	—	—	—	8	—	—	—	—	1/
	26	2688	2259	—	184	202	—	—	—	42	—	—	—	—	1/
May	2	2251	2091	—	65	52	—	—	—	43	—	—	—	—	1/
	9	875	548	—	213	89	—	—	—	2	—	—	20	4	2/
	10	4218	3126	—	572	131	—	—	—	4	—	—	384	—	3/
	23	6619	5856	—	445	125	—	7	7	—	—	102	76	—	4/
	24	10479	8632	37	942	202	—	—	21	7	—	150	486	—	1/
	30	9000	8061	51	570	121	—	11	10	—	6	156	3	8	1/
	31	3574	3266	13	168	26	—	12	2	—	5	69	3	5	1/
June	6	818	566	144	74	23	—	—	1	—	2	7	—	—	1/
	7	572	409	54	29	—	1	—	—	—	74	3	2	—	1/
	13	628	550	24	23	8	—	2	—	—	10	8	1	—	1/
	14	257	200	21	23	3	—	—	—	—	—	6	1	1	1/

1/ Phytoplankton scarce.
2/ Phytoplankton abundant (N. E. Tow, Actinastrum; N. W. Tow, Actinastrum and Coscinodiscus.
3/ Phytoplankton scarce, N. E. Tow; phytoplankton abundant, N. W. Tow (Actinastrum).
4/ Phytoplankton abundant N. E. Tow (Actinastrum); phytoplankton scarce N. W. Tow.

Table 32 Abundance of Plankton: Experimental Area, Average of N. E. and N. W. Tows, Summer 1970 (June 23-July 30, 1970)

Number per cubic meter of water

Date	Total	Copepods	Cladocera		Nauplii	Barnacle Nauplii	Barnacle Cyprids	Shrimp Larvae	Zoea	Gastropod Veligers	Lamellibranch Veligers	Polychaete Larvae	Invertebrate Eggs	Fish Eggs	Coscinodiscus	Actinastrum
			Podon	Evadne												
June 23	78369	62183	—	6	13711	—	4	—	172	367	—	—	42	19	—	1863
25	28737	22123	—	9	4516	—	4	—	90	123	—	27	217	9	430	1186
30	84236	61715	—	—	4217	—	—	—	500	191	37	18	156	17	12846	4537
July 2	56899	40954	—	127	12049	—	—	—	161	364	—	217	306	24	923	1571
7	12281	7776	68	540	2321	—	8	—	17	123	—	1032	30	4	216	144
9	9010	4379	434	946	1824	—	—	—	—	34	—	702	27	3	609	50
14	2806	809	671	81	368	—	—	—	—	37	—	106	8	1	667	6
16	29587	15775	1064	732	8778	—	—	—	32	471	—	541	130	8	1746	308
23	29967	11473	8007	1316	7307	—	—	28	—	249	—	656	—	19	910	—
28	45912	27481	6717	283	8938	—	52	17	33	719	44	1436	7	16	127	49
30	22137	16091	1001	76	3235	26	16	16	23	697	135	493	—	10	285	28

Table 33 Abundance of Plankton: Experimental Area, Average of N. E. and N. W. Tows, Summer 1970 (Aug. 5-27, 1970)

Number per cubic meter of water

Date	Total	Copepods	Cladocera		Nauplii	Barnacle Nauplii	Barnacle Cyprids	Shrimp Larvae	Zoea	Gastropod Veligers	Lamellibranch Veligers	Polychaete Larvae	Invertebrate Eggs	Fish Eggs	Coscinodiscus	Actinastrum
			Podon	Evadne												
Aug. 5	1528	1266	–	–	110	–	25	5	–	28	5	55	–	–	32	–
6	262	119	1	–	59	–	9	–	–	25	–	9	–	–	33	5
12	171	35	–	–	73	–	–	1	1	16	5	16	–	–	20	2
13	210	71	–	–	74	–	4	4	–	7	2	6	–	1	31	9
18	545	–	–	–	23	–	–	–	–	33	–	8	–	–	477	2
20	56	5	–	–	11	–	–	–	–	5	–	–	–	–	34	1
25	2271	41	–	5	177	–	–	–	7	–	–	–	–	–	2022	–
27	4263	1526	–	–	169	23	46	–	–	60	28	19	–	3	2387	–

Table 34 Abundance of Plankton: Experimental Area
Average of N. E. and N. W. Tows, Fall 1970,
(Oct. 10-Nov. 28, 1970)

Number per cubic meter of water

Date	Total	Copepods	Cladocera	Nauplii	Barnacle Nauplii	Polychaete larvae	Foraminifera	Fish Eggs
Oct. 10	28001	5579	49	19866	2506	-	-	1
11	27413	19160	-	7611	584	-	57	-
24	5225	3897	-	1255	67	5	-	-
31	9570	8584	-	782	204	-	-	-
Nov. 1	10963	10246	-	643	74	-	-	-
7	10327	9762	7	477	81	-	-	-
22	21299	19044	-	1779	475	-	-	-
28	20763	15649	-	3972	1141	-	-	-

Table 35 Abundance of Plankton: Experimental Area, Average of N. E. and N. W. Tows, Winter 1970, (Dec. 19, 1970-Mar. 28, 1971)

Number per cubic meter

Date 1970	Total	Copepods	Cladocera	Nauplii	Barnacle Nauplii	Invertebrate Eggs	Foraminifera	Fish Larvae
Dec. 19	6804	5086	92	1515	110	-	1	-
1971								
Jan. 3	5526	3950	15	1554	-	-	7	-
10	4360	2391	27	1584	-	357	-	-
23	7520	4325	-	3194	-	-	-	-
Mar. 6	-	-	-	-	-	-	-	-
14	200	200	-	-	-	-	-	-
28	34244	8506	-	25711	-	26	-	-

Table 36 Abundance of Plankton: Experimental Area, Average of N.E. and N.W. Tows, Spring 1971 (April 3-June 13, 1971)

Number per cubic meter of water

Date 1971		Total	Copepods	Cladocera	Nauplii	Barnacle Nauplii	Medusae	Polychaete Larvae	Invertebrate Eggs	Foraminifera	Zoea	Megalops
April	3	17130	8168	18	8471	351	18	36	51	17	-	-
	4	16775	6530	98	9902	178	-	8	58	-	-	-
	11	8947	6913	78	1343	373	105	30	103	-	-	-
	17	3140	2512	-	404	120	72	-	32	-	-	-
	18	8747	6605	17	1435	274	344	39	30	-	-	-
	24	9158	7979	-	776	370	9	23	-	-	-	-
May	1	2734	1938	-	662	116	18	-	-	-	-	-
	2	6166	4369	-	1627	186	76	-	7	-	-	-
	15	8222	2904	-	5106	114	81	-	16	-	-	-
	22	5849	3071	50	2553	-	138	-	8	-	30	-
	23	13584	12764	10	535	-	238	-	16	-	10	10
	29	8193	7903	-	235	7	35	-	5	-	-	7
June	5	2072	1830	-	212	-	4	-	15	4	4	2
	6	2229	1664	-	515	-	6	-	21	6	14	2
	12	9761	3711	4958	902	-	22	16	80	-	71	-
	13	8949	7108	1155	590	-	8	-	41	-	47	-

Table 37 Abundance of Plankton: Control Area,
N. E. Tow, Spring 1970 (April 18-June 14, 1970)

Number per cubic meter of water

Date		Total	Copepods	Cladocera	Nauplii	Barnacle Nauplii	Megalops	Zoea	Polychaete larvae	Medusa	Foraminifera	Mysid Nauplii	Fish eggs	Fish larvae	Phytoplankton
April	18	7830	6061	—	1244	499	—	—	—	26	—	—	—	—	1/
	25	1969	1674	—	186	109	—	—	—	—	—	—	—	—	1/
	26	1173	1074	—	53	8	—	—	—	38	—	—	—	—	1/
May	2	969	793	—	29	20	—	—	—	127	—	—	—	—	1/
	9	1368	632	—	568	157	—	—	—	—	—	—	6	5	2/
	10	6152	5688	—	340	66	—	—	—	—	—	—	57	1	2/
	23	4489	3766	9	517	61	—	9	—	—	—	79	48	—	1/
	24	11068	9724	—	1007	152	—	—	—	—	—	110	75	—	1/
	30	4032	3448	14	303	90	7	—	14	—	—	152	4	—	1/
	31	3273	2924	9	196	40	—	9	31	—	9	53	1	1	1/
June	6	775	401	266	60	7	2	10	—	—	—	24	—	5	1/
	7	1135	896	48	162	22	—	—	—	—	—	6	1	—	1/
	13	646	596	31	12	1	—	—	—	—	1	1	—	4	1/
	14	852	721	48	47	6	—	—	—	—	7	17	3	3	1/

1/ Phytoplankton scarce.
2/ Phytoplankton abundant (Actinastrum).

Table 38 Abundance of Plankton: Control Area, N. E. Tow, Summer 1970 (June 23-July 30, 1970)

Date	Total	Copepods	Cladocera: Podon	Cladocera: Evadne	Nauplii	Barnacle Nauplii	Barnacle Cyprids	Caprellid Larvae	Shrimp Larvae	Zoea	Gastropod Veligers	Lamellibranch Veligers	Polychaete Larvae	Invertebrate Eggs	Fish Eggs	Coscinodiscus	Actinastrum
June 23	69359	54649	—	62	12403	—	—	—	—	107	271	—	25	76	33	—	1733
25	4159	3054	—	11	621	—	—	—	—	64	129	—	—	—	1	—	279
30	23109	18943	—	21	1521	—	—	—	—	150	171	—	64	107	11	450	1671
July 2	31086	22487	—	434	6303	—	—	—	—	171	303	—	—	39	7	579	763
7	21161	11183	596	3365	4760	—	10	—	—	58	154	—	337	19	6	394	279
9	13801	7418	429	536	1352	—	—	8	—	8	91	—	3445	8	11	470	25
14	2771	885	98	—	459	—	—	—	—	—	14	—	138	3	2	1165	7
16	35500	23279	1691	1168	6382	—	—	—	35	—	610	—	540	70	17	1534	174
23	18576	9074	4505	488	3543	—	—	—	—	14	473	—	219	—	14	183	63
28	50666	25492	11120	338	10644	—	42	—	53	148	676	32	1489	21	19	549	43
30	30841	22482	167	82	6158	210	37	—	9	18	549	320	787	—	22	—	—

Table 39 Abundance of Plankton: Control Area, N. E. Tow, Summer 1970 (Aug. 5-27, 1970)

Number per cubic meter of water

Date	Total	Copepods	Cladocera		Nauplii	Barnacle Nauplii	Barnacle Copepods	Shrimp Larvae	Zoea	Gastropod Veligers	Lamellibranch Veligers	Polychaete Larvae	Invertebrate Eggs	Fish Eggs	Coscinodiscus	Actinastrum
			Podon	Evadne												
Aug. 5	125	61	–	–	25	–	7	–	–	18	–	–	–	–	14	–
6	413	166	–	–	109	–	–	–	12	72	–	9	–	1	44	–
12	120	23	–	–	40	–	–	3	–	6	14	–	–	–	23	11
13	136	20	–	–	47	–	7	7	–	–	14	–	–	–	27	14
18	441	24	–	–	83	–	–	–	–	60	–	24	–	–	250	–
20	30	3	–	–	–	–	–	–	–	2	–	3	–	–	21	1
25	1737	66	–	–	145	–	–	–	13	66	–	26	–	–	1421	–
27	1235	179	–	14	307	–	–	–	21	–	–	21	–	–	693	–

Table 40 Abundance of Plankton: Control Area
Fall 1970, (Oct. 10-Nov. 28, 1970)

Date	Number per cubic meter of water								
	Total	Copepods	Cladocera	Nauplii	Barnacle Nauplii	Polychaete larvae	Foraminifera	Fish Eggs	Phytoplankton
Oct. 10	15426	4912	-	9735	779	-	-	-	1/
11	35616	20832	-	13920	864	-	-	-	1/
24	8215	6375	-	1643	143	-	54	-	1/
31	8041	7531	-	448	62	-	-	-	1/
Nov. 1	21457	18400	-	2628	400	-	29	-	1/
7	494	465	-	24	5	-	-	-	1/
22	18951	17172	-	1448	331	-	-	-	1/
28	17107	13256	-	3265	586	-	-	-	2/

1/ Coscinodiscus abundant
2/ Coscinodiscus present; not abundant

Table 41 Abundance of Plankton: Control Area,
N. E. Tow, Winter 1970 (Dec. 19, 1970-Mar. 28, 1971)

Date 1970		Number per cubic meter of water										
		Total	Copepods	Cladocera	Nauplii	Barnacle Nauplii	Invertebrate Eggs	Polychaete Larvae	Medusae	Foraminifera	Fish Eggs	Phytoplankton
Dec.	19	10339	7304	35	3000	-	-	-	-	-	1/	2/
1971												
Jan.	3	9229	6897	147	2087	-	-	-	9	8	-	3/
	10	9577	5859	24	3294	-	400	-	-	-	-	3/
	23	4717	3145	-	1572	-	-	-	-	-	-	4/
Mar.	6	600	-	-	600	-	-	-	-	-	-	5/
	14	-	-	-	-	-	-	-	-	-	-	5/
	28	69599	27508	-	41169	646	92	92	92	-	-	6/

1/ Less than .5.
2/ Coscinodiscus abundant.
3/ Actinastrum, Coscinodiscus, filamentous algae abundant.
4/ Filamentous algae, Melosira very abundant.
5/ Phytoplankton very abundant; filamentous algae, diatoms, Coscinodiscus, Actinastrum.
6/ Diatoms, Coscinodiscus, Actinastrum abundant.

Table 42 Abundance of Plankton: Control Area, N.E. Tow, Spring 1971 (April 3-June 13, 1971)

Number per cubic meter of water

Date 1971		Total	Copepods	Cladocera	Nauplii	Barnacle Nauplii	Medusae	Polychaete Larvae	Invertebrate Eggs	Foraminifera	Zoea	Megalops	Phytoplankton
April	3	40960	13120	80	27280	320	80	80	-	-	-	-	1/
	4	15635	9692	58	5683	58	-	115	29	-	-	-	2/
	11	9980	6942	96	2231	250	38	115	308	-	-	-	3/
	17	8683	5983	-	2133	117	433	-	17	-	-	-	2/
	18	6696	5170	-	911	535	80	-	-	-	-	-	3/
	24	2079	1101	-	204	766	8	-	-	-	-	-	3/
May	1	4438	3444	-	689	229	46	-	30	-	-	-	4/
	2	15059	12474	-	2467	20	98	-	-	-	-	-	5/
	15	4402	2944	-	1375	69	14	-	-	-	-	-	5/
	22	8212	4869	24	3160	12	135	-	12	-	-	-	5/
	23	3506	2657	-	771	-	29	-	42	-	-	7	5/
	29	11531	11166	-	116	39	77	-	96	19	-	19	6/
June	5	4783	4418	-	288	-	17	-	51	-	8	-	1/
	6	1905	1595	-	282	-	9	-	9	5	5	-	1/
	12	16310	11584	3331	1371	-	-	-	-	-	24	-	1/
	13	7042	5132	1405	426	-	-	32	47	-	-	-	5/

1/ Actinastrum abundant.
2/ Coscinodiscus, Actinastrum abundant.
3/ Coscinodiscus abundant.
4/ Coscinodiscus persent.
5/ No phytoplankton.
6/ Actinastrum present.

Table 43 Abundance1/ of Fish Eggs and Larvae: Experimental and Control Areas, Spring 1970 (April 18, 1970-June 14, 1970)

		Number of Fish Eggs				Number of Fish Larvae			
		Experimental			Control	Experimental			Control
		N. E.	N. W.	Aver. N. E.-N. W.	N. E.	N. E.	N. W.	Aver. N. E.-N. W.	N. E.
April	18	-	-	-	-	-	-	-	-
	25	-	-	-	-	-	-	-	-
	26	-	-	-	-	148	91	119	-
May	2	-	-	-	-	194	85	139	293
	9	20024	21297	20660	6162	4048	791	2419	5351
	10	33372	73491	53431	56548	-	-	-	658
	23	23698	129429	76563	48350	453	-	226	-
	24	55385	91826	73605	75310	-	-	-	-
	30	4194	1607	2901	4138	7698	9964	8831	414
	31	2752	4286	3019	1067	5809	4929	5369	533
June	6	163	-	81	-	38	-	19	4842
	7	674	343	508	776	104	-	52	296
	13	1051	1278	1164	1188	96	380	238	4059
	14	37	3254	1645	2867	1458	1746	1602	3138

1/ Number per 1000 cubic meters.

Table 44 Abundance1/ of Fish Eggs and Larvae: Experimental and Control Areas, Summer 1970
(June 23-July 30, 1970)

	Number of Fish Eggs				Number of Fish Larvae			
	Experimental			Control	Experimental			Control
	N. E.	N. W.	Aver. N. E.-N. W.	N. E.	N. E.	N. W.	Aver. N. E.-N. W.	N. E.
June 23	17143	22381	19762	33277	-	-	-	-
25	10633	8293	9463	1143	-	-	-	-
30	11746	21667	16706	11143	-	-	-	-
July 2	31667	15849	23758	6667	-	-	-	-
7	4045	4598	4321	6154	-	-	-	-
9	2338	3564	2951	10989	-	-	-	-
14	1264	2369	1816	1621	-	-	-	-
16	10870	6285	8577	17437	-	-	-	-
23	21076	18092	19584	14192	-	-	-	-
28	12000	20000	16000	18586	-	-	-	-
30	12820	7548	10184	22936	-	-	-	-

1/ Number per 1000 cubic meters.

Table 45 Abundance1/ of Fish Eggs and Larvae: Experimental and Control Areas, Summer 1970
(Aug. 5-27, 1970)

	Number of Fish Eggs				Number of Fish Larvae			
	Experimental			Control	Experimental			Control
	N. E.	N. W.	Aver. N. E.-N. W.	N. E.	N. E.	N. W.	Aver. N. E.-N. W.	N. E.
Aug. 5	431	306	368	0	-	-	-	-
6	304	221	262	650	-	-	-	-
12	150	184	167	341	-	-	-	-
13	517	667	592	0	-	-	-	-
18	0	0	0	333	-	-	-	-
20	46	0	23	67	-	-	-	-
25	0	0	0	0	-	-	-	-
27	5000	1423	3211	429	-	-	-	-

1/ Number per 1000 cubic meters.

Table 46 Abundance1/ of Fish Eggs and Larvae: Experimental and Control Areas, Fall 1970 (Oct. 10-Nov. 28, 1970)

	Number of Fish Eggs				Number of Fish Larvae			
	Experimental			Control	Experimental			Control
	N. E.	N. W.	Aver. N. E.-N. W.	N. E.	N. E.	N. W.	Aver. N. E.-N. W.	N. E.
Oct. 10	1959	254	1106	-	-	-	-	-
11	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-
Nov. 1	-	-	-	-	-	194	97	-
7	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-

1/ Number per 1000 cubic meters.

Table 47 Abundance1/ of Fish Eggs and Larvae: Experimental and Control Areas, Winter 1970 (Dec. 19, 1970-Mar. 28, 1971)

	Number of Fish Eggs				Number of Fish Larvae			
	Experimental			Control	Experimental			Control
	N. E.	N. W.	Aver. N. E.-N. W.	N. E.	N. E.	N. W.	Aver. N. E.-N. W.	N. E.
1970								
Dec. 19	-	-	-	-	1116	633	874	402
1971								
Jan. 3	-	-	-	-	145	-	72	-
10	-	-	-	-	-	-	-	471
23	-	-	-	-	-	-	-	-
Mar. 8	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-

1/ Number per 1000 cubic meters.

Table 48 Abundance1/ of Fish Eggs and Larvae: Experimental and Control Areas, Spring 1971 (April 3-June 13, 1971)

		Number of Fish Eggs				Number of Fish Larvae			
		Experimental			Control	Experimental			Control
		N. E.	N. W.	Aver. N. E.-N. W.	N. E.	N. E.	N. W.	Aver. N. E.-N. W.	N. E.
	1971								
April	3	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-
	11	-	-	-	-	-	-	-	-
	17	-	-	-	-	379	104	241	-
	18	-	-	-	-	-	436	218	-
	24	941	952	946	4402	235	190	212	22
May	1	367	714	540	1367	-	-	-	-
	2	661	2358	1509	4342	125	-	62	-
	15	247340	158333	202836	21944	-	-	-	-
	22	44895	100000	72447	99590	-	-	-	-
	23	183158	175221	179189	22495	-	-	-	-
	29	85714	118080	101897	120321	1143	3600	2371	3273
June	5	12256	16299	14277	16537	3246	1937	2591	2290
	6	24810	25691	25250	12000	4051	3315	3683	1224
	12	39680	28903	34291	72490	3520	5548	4534	1714
	13	35000	25400	30200	62526	2333	4200	3266	1737

1/ Number per 1000 cubic meters.

Table 49 Abundance of Bottom Organisms: 1/ Experimental Area, Spring 1970. (April 18-June 14, 1970)

Date	Amphipods									Isopods					Species								
	A	B	C	D	E	F	G	H	I	A	B	C	D	E	Nassarius	Lamellibranchs	Annelids	Polychaetes	Pagurus longicarpus	Mysids	Asterias	Porifera
April 18	1	2/	_	1	2/	_	_	_	_	2/	_	2/	_	_	_	5	_	21	_	_	_	_
25	3	_	2/	2	_	_	_	_	_	_	_	1	_	_	1	4	_	4	_	1	1	_
26	1	4	1	2	_	_	_	_	_	_	_	2/	_	2/	_	5	1	4	_	_	_	_
May 2	1	2/	1	3	_	_	_	_	_	_	_	2/	_	_	1	8	2/	1	_	2/	_	1
9	1	3	2/	4	_	_	_	_	_	_	_	2/	_	_	2/	6	_	1	_	2/	_	2/
10	1	4	8	2/	_	_	_	_	_	_	_	2/	_	_	2/	9	_	2	2/	1	_	_
23	1	_	1	2	_	_	_	_	_	_	_	_	_	_	1	13	_	1	_	2/	_	_
24	2/	1	2/	1	_	_	_	_	_	_	2/	_	_	_	2/	4	2/	3	_	1	_	_
30	1	_	_	8	_	_	_	_	_	_	_	_	_	_	_	10	_	2	_	1	_	_
31	2	1	_	3	2/	_	_	_	_	_	_	2/	_	_	1	8	2/	2/	_	1	_	_
June 6	4	_	_	4	2/	1	_	_	_	_	_	2/	_	_	1	8	_	1	_	_	_	_
7	5	1	_	6	_	_	_	_	_	_	_	_	_	_	2/	12	_	39	_	1	_	_
13	2	1	3	8	_	_	_	2/	_	_	_	_	_	_	_	14	1	2	_	6	_	_
14	2	_	_	5	2	1	_	_	_	_	_	2/	_	_	_	8	_	1	_	2/	_	_

1/ Average number of organisms per pint sample of bottom based on four pint bottom samples. The samples were taken approximately 800 feet north, east, south and west of the proposed outfall opening.

2/ Average number of organisms .5 or less.

Table 50 Abundance of Bottom Organisms: Experimental Area, Summer 1970 (June 29, 1970)[1/]

Station	AMPHIPOD									ISOPOD									
	A	B	C	D	E	F	G	H	I	A	B	C	D	Pagurus longicarpus	Nassarius	Lamellibranchs	Polychaetes	Cumaceans	Silversides
N1	–	–	2	14	10	–	–	–	–	–	–	–	–	–	–	13	5	–	–
N2	3	–	2	4	5	1	–	–	–	–	–	–	–	–	–	13	2	–	–
N4	1	–	4	1	7	–	1	–	–	–	–	–	–	–	–	9	6	–	–
N6	–	–	3	12	5	–	–	–	–	–	–	–	–	–	–	8	8	–	–
S1	5	1	3	5	4	2	–	–	–	–	–	–	–	–	1	29	1	–	–
S2	–	1	–	–	2	–	–	–	–	–	–	–	–	3	–	27	2	–	–
S4	–	–	–	3	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–
E1	–	–	10	26	93	6	–	–	–	–	–	–	–	–	–	29	25	1	–
E2	–	–	3	24	150	–	–	–	–	–	–	–	–	–	–	21	21	–	–
E4	–	–	–	18	106	7	–	–	–	–	–	–	–	–	1	9	76	2	1
E6	10	–	5	11	35	5	–	–	–	–	–	–	–	–	2	10	54	–	–
W1	5	–	–	9	5	1	–	–	–	–	–	1	–	–	–	15	6	–	–
W2	4	1	–	6	7	–	–	–	–	–	–	–	–	–	–	38	1	–	–
W4	12	–	3	5	8	–	–	–	–	–	–	–	–	2	1	97	5	–	–
W6	10	1	2	–	1	–	–	–	–	–	–	–	–	–	–	11	1	–	–
Aver. N	1	0	3	8	7	0	0	–	–	–	–	0	–	0	0	11	5	0	0
Aver. S	2	1	1	3	2	1	0	–	–	–	–	0	–	1	0	18	1	0	0
Aver. E	2	0	4	20	96	4	0	–	–	–	–	0	–	0	1	17	44	0	0
Aver. W	8	0	1	5	5	0	0	–	–	–	–	0	–	0	0	40	3	0	0
Aver. Total	3	0	2	9	29	1	0	–	–	–	–	0	–	0	0	22	14	0	0

1/ Number of organisms per pint sample of bottom.

Table 51 Abundance of Bottom Organisms: Experimental Area, Summer 1970 (July 20, 1970).[1/]

Station	AMPHIPOD									ISOPOD									
	A	B	C	D	E	F	G	H	I	A	B	C	D	Decapods	Nassarius	Lamellibranchs	Polychaetes	Fish larvae	Mysids
N1	3	–	2	182	18	–	–	3	–	–	–	–	–	1	1	40	4	–	–
N2	–	–	–	18	6	–	–	–	–	–	–	2	–	1	–	8	3	–	–
N4	1	–	–	33	9	2	–	–	2	–	–	–	–	1	–	14	5	–	–
N6	–	–	2	24	8	–	–	–	–	–	–	1	–	–	–	9	–	–	–
S1	2	–	1	22	2	–	–	–	–	–	–	2	–	–	–	6	3	–	–
S2	–	–	–	83	8	–	–	–	–	–	–	–	–	–	–	16	–	–	–
S4	–	–	–	1	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–
E1	1	–	14	27	5	1	–	–	–	–	–	–	–	–	–	29	55	–	1
E2	3	–	8	124	31	7	–	–	–	–	–	–	–	–	1	9	24	1	–
E4	–	–	6	113	35	–	–	–	–	–	–	–	–	–	–	7	17	–	–
E6	3	1	6	241	51	–	–	–	–	–	–	–	–	–	–	8	18	–	–
W1	7	–	–	20	2	1	–	–	–	–	–	–	–	–	–	6	5	–	–
W2	7	–	–	47	12	2	–	–	–	–	–	4	–	1	1	14	3	–	–
W4	9	2	4	5	–	–	–	–	–	–	–	2	–	–	–	97	8	–	–
W6	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	12	1	–	2
Aver. N	1	–	1	66	10	0	–	1	0	–	–	1	–	1	0	18	3	–	–
Aver. S	1		0	35	3	–	–	–	–	–	–	0	–	–	0	7	1	–	–
Aver. E	2	0	8	126	30	2	–	–	–	–	–	–	–	–	0	13	28	0	0
Aver. W	7	0	1	18	4	1	–	–	–	–	–	2	–	0	0	32	4	–	0
Aver. Total	3	0	3	63	13	1	–	0	0	–	–	1	–	0	0	18	10	0	0

1/ Number of organisms per pint sample of bottom.

Table 52 Abundance of Bottom Organisms: Experimental Area, Summer 1970 (August 10, 1970)[1/]

Station	AMPHIPODS									ISOPODS									
	A	B	C	D	E	F	G	H	I	A	B	C	D	E	Nassarius	Lamellibranchs	Polychaetes	Cumaceans	Nemerteans
N1	6	—	—	50	—	3	—	—	—	1	—	—	—	—	—	8	4	—	1
N2	—		—	11	1	2	—	—	—	—	—	5	—	—	—	14	2	—	2
N4	1		—	5	—	5	—	—	—	—	—	—	—	—	—	4	—	—	—
N6	—		—	35	—	1	—	3	—	—	—	1	—	—	—	7	5	—	—
S1	26	12	—	45	4	5	—	—	—	—	—	3	—	—	1	3	1	—	—
S2	1	3	—	11	1		—	—	—	—	—	—	—	—	—	1	2	—	—
S4	—	—	—	9	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—
E1	8		4	83	4	5	—	—	—	—	—	—	—	—	1	8	4	—	2
E2	7	4	—	90	3	10	—	2	—	—	—	—	—	—	—	11	3	1	—
E4	—	1	9	147	13	—	—	1	—	—	—	—	—	—	1	6	5	—	—
E6	4	—	1	167	5	4	—	—	—	—	—	—	—	—	1	9	4	—	—
W1	4	1	—	43	1	8	—	2	—	—	—	6	—	—	—	12	1	—	—
W2	1	—	—	26	—	1	—	—	—	—	—	3	—	—	—	2	—	—	—
W4	4		—	8	—	5	—	—	—	—	—	—	—	—	—	56	2	—	—
W6	6	1	—	19	6	—	—	—	1	—	—	4	—	—	—	2	6	—	—
Aver. N	2	0	0	25	0	3	0	1	0	—	—	2	—	—	—	9	3	—	1
Aver. S	9	5	0	22	2	2	0	0	0	—	—	1	—	—	0	2	1	—	—
Aver. E	5	1	4	122	6	5	0	1	0	—	—	—	—	—	1	8	4	0	0
Aver. W	4	0	0	24	2	2	0	0	0	—	—	3	—	—	—	18	2	—	—
Aver. Total	5	2	1	48	8	3	0	0	0	—	—	2	—	—	0	9	3	0	1

1/ Number of organisms per pint sample of bottom.

Table 53 Abundance of Bottom Organisms: Experimental Area, Summer 1970 (Sept. 2, 1970)[1/]

Station	Amphipods									Isopods				Pagurus longicarpus	Decapods	Gastropods	Nassarius	Lamellibranchs	Polychaetes	Nemerteans	Cumaceans
	A	B	C	D	E	F	G	H	I	A	B	C	D								
N1	2	–	–	21	–	1	–	–	–	–	–	–	–	1	–	–	–	6	–	–	–
N2	1	–	–	13	5	1	–	–	–	–	–	–	–	–	–	–	1	9	–	–	–
N4	2	–	–	30	–	1	–	–	–	–	–	–	–	–	–	–	–	4	–	–	–
N6	–	–	–	86	6	–	–	–	–	–	–	–	–	–	–	–	–	5	3	–	–
S1	5	–	–	47	–	2	–	–	–	–	–	3	–	–	–	–	–	5	–	2	1
S2	4	–	1	9	–	–	–	–	–	–	–	–	–	–	–	–	–	2	3	–	1
S4	–	–	–	15	–	–	–	–	–	–	–	–	–	1	–	–	1	–	–	–	–
E1	2	–	–	35	–	4	–	–	–	–	–	–	–	–	–	–	1	18	–	–	–
E2	2	–	–	40	1	3	–	–	–	1	–	–	–	–	–	–	–	14	2	–	1
E4	2	–	4	39	–	–	–	–	1	–	–	–	–	–	–	–	–	7	–	–	–
E6	10	1	4	106	7	8	–	1	–	2	–	–	–	–	–	–	1	4	1	–	–
W1	6	3	–	26	1	2	–	–	–	–	–	8	–	–	–	–	1	4	2	–	–
W2	4	2	–	6	–	1	–	–	–	1	–	–	–	–	–	–	–	4	1	1	–
W4	2	4	–	30	2	2	–	–	–	–	–	–	–	–	–	–	–	7	–	–	1
W6	6	4	5	9	–	–	–	–	–	–	–	10	–	–	–	–	–	1	1	–	–
Aver. N	1	–	–	38	3	1	–	–	–	–	–	–	–	0	–	–	0	6	1	–	–
Aver. S	3	–	0	24	–	1	–	–	–	–	–	1	–	0	–	–	0	2	1	1	1
Aver. E	4	0	2	55	2	4	–	0	0	1	–	–	–	–	–	–	0	11	1	–	0
Aver. W	4	3	1	18	1	1	–	–	–	0	–	4	–	–	–	–	0	4	1	0	0
Aver. Total	3	1	1	34	2	2	–	0	0	0	–	1	–	1	–	–	0	6	1	0	0

1/ Number of organisms per pint sample of bottom.

Table 54 Abundance of Bottom Orgamnisms:1/ Experimental Area, Fall 1970 (Oct. 10-Nov. 28, 1970)

Date	Number of organisms per pint sample of bottom																				
	Amphipods									Isopods					Nassarius	Lamellibranchs	Solenidae	Annelids	Polychaetes	Mysids	Decapods
	A	B	C	D	E	F	G	H	I	A	B	C	D	E							
Oct. 10	3	-	1	32	-	-	-	-	-	-	-	2/	-	-	2/	10	1	2/	2/	-	-
11	2	2/	1	19	-	-	-	-	-	-	-	2/	-	-	2/	6	2/	-	2/	3	-
24	9	2	1	9	-	-	-	-	-	-	-	2	-	-	2/	2	-	2/	2	1	-
31	4	-	2/	27	-	-	-	-	-	-	-	4	-	-	1	7	-	-	-	1	-
Nov. 1	7	2	1	4	-	-	-	-	-	2/	-	1	-	-	-	5	2/	-	2/	-	-
7	5	1	3	6	-	-	-	-	-	-	-	3	-	-	2/	2	-	2/	-	-	2/
22	4	2	1	10	-	-	-	-	-	-	-	-	-	-	1	3	2/	-	2/	-	-
28	3	-	1	7	-	-	-	-	-	-	2/	2	-	-	1	2	2/	1	2/	2/	-

1/ Average number of organisms per pint sample of bottom based on four bottom samples. The samples were taken approximately 800 feet north, east, south and west of the proposed outfall opening

2/ Average number of organisms .5 or less

Table 55 Abundance of Bottom Organisms: 1/ Experimental Area, Winter 1970 (Dec. 19, 1970-Mar. 28, 1971)

Date	Number of organisms per pint sample of bottom																		
	Amphipods									Isopods					Nassarius	Lamellibranchs	Solenidae	Annelids	Polychaetes
	A	B	C	D	E	F	G	H	I	A	B	C	D	E					
1970																			
Dec. 19	5	-	2/	3	-	2/	-	-	-	-	-	2	2/	-	2/	2/	-	2/	2/
1971																			
Jan. 3	6	-	-	3	-	1	-	-	-	-	-	5	2/	-	2/	1	-	1	2/
10	8	-	2/	7	-	1	-	-	-	-	-	2/	2/	-	-	2	-	1	2/
23	3	-	1	3	-	-	-	-	-	-	-	5	-	-	-	2	-	2	2/
Mar. 6	5	-	1	4	-	-	-	-	-	-	-	3	-	-	2/	2	-	2/	2/
14	6	-	1	4	2/	2/	-	-	-	-	-	8	2/	-	2/	4	-	1	2/
28	4	-	1	3	-	2/	-	-	-	-	-	6	-	-	2/	1	-	2	2/

1/ Average number of organisms per pint sample of bottom based on four bottom samples. The samples were taken approximately 800 feet north, east, south and west of the proposed outfall opening.

2/ Average number of organisms .5 or less.

Table 56 Abundance of Bottom Organisms: 1/Experimental Area, Spring 1971
(April 3-June 13, 1971)

Date	Amphipods									Isopods					Nassarius	Lamellibranchs	Annelids	Polychaetes	Decapods	Mysid Larvae
	A	B	C	D	E	F	G	H	I	A	B	C	D	E						
	Number of organisms per pint sample of bottom																			
1971																				
April 3	7	-	3	4	2/	2/	-	-	-	-	-	2	-	-	-	2	2/	-	-	-
4	4	-	1	6	-	2	-	-	-	-	-	2/	-	-	2/	1	2/	1	-	-
11	3	2/	-	10	-	1	-	-	-	-	2/	5	-	-	2/	4	1	2/	-	-
17	15	-	2/	4	-	1	-	-	-	2/	-	6	-	-	2/	3	2/	-	-	-
18	3	-	2/	6	-	1	-	-	-	-	-	7	-	-	2/	2	1	2/	-	-
24	8	-	1	7	-	2/	-	-	-	-	-	9	-	-	2/	1	2/	2/	-	-
May 1	7	-	2	34	-	5	-	-	-	-	-	4	-	-	2/	2	-	2/	-	-
2	11	-	1	23	-	4	-	-	-	-	-	2	-	-	2/	2	-	2/	-	-
15	7	-	1	7	-	1	-	-	-	-	-	2	-	-	1	2	2/	2/	-	-
22	10	-	-	7	-	2	-	-	2/	2/	2/	-	-	-	-	1	2/	1	-	-
23	5	-	2/	5	-	2	-	-	-	-	-	3	-	-	2/	1	2	1	-	-
29	2	-	1	9	-	2	-	-	-	2/	-	10	-	-	2/	3	2	1	-	-
June 5	5	-	2/	9	-	2	-	-	-	-	-	9	-	-	1	1	2	1	-	-
6	5	-	2/	5	-	4	-	-	-	2/	-	7	-	-	1	1	1	2/	-	-
12	3	-	-	4	-	1	-	-	-	1	-	7	-	-	2/	1	4	2/	2/	-
13	4	-	2	5	-	2	-	-	-	2/	-	7	-	-	2/	3	3	2/	-	1

1/ Average number of organisms per pint sample of bottom based on four bottom samples. The samples were taken approximately 800 feet north, east, south and west of the proposed outfall opening.

2/ Average number of organisms was .5 or less.

Table 57 Abundance of Bottom Organisms1/: Control Area, Spring 1970. (April 18-June 14, 1970)

Date	Species																				
	Amphipods									Isopods											
	A	B	C	D	E	F	G	H	I	A	B	C	D	E	Nassarius	Lamellibranchs	Annelids	Polychaetes	Decapod	Pagurus longicarpus	Mysids
April 18	2	2/	5	–	–	–	–	–	–	–	–	3	–	–	–	5	2/	1	–	–	–
25	9	–	2/	–	–	–	–	–	–	–	–	5	–	–	2/	4	–	2	–	–	–
26	6	2	2	3	–	–	1	–	–	–	–	7	–	–	–	2	4	3	–	–	–
May 2	7	2/	2/	11	–	–	–	–	–	2/	–	3	–	–	–	5	2/	1	–	–	4
9	12	1	2	2/	–	–	–	–	–	–	–	2	–	–	2/	5	1	2	–	–	–
10	4	–	–	2	–	–	–	–	–	2/	–	2/	–	–	1	5	–	3	2/	2/	1
23	12	–	–	2	–	–	–	–	–	–	–	3	–	–	2/	3	–	31	–	–	–
24	3	1	–	9	–	–	–	1	–	–	2/	9	–	–	–	2	1	9	–	–	3
30	3	2/	–	9	–	–	–	–	–	1	–	1	–	–	2/	3	–	7	–	–	2/
31	7	2	2/	5	1	–	–	–	–	–	–	2	–	–	2/	6	2	8	–	–	2/
June 6	7	2/	–	1	–	–	–	–	–	3	2/	3	–	–	–	8	–	7	–	–	–
7	9	2/	2/	22	–	–	–	–	–	–	–	3	–	–	–	6	1	32	–	–	2
13	8	–	–	14	–	–	–	–	2/	2/	–	2/	–	–	–	8	5	7	–	–	3
14	10	2	2	8	–	–	–	–	–	2/	–	2	–	–	–	6	3	13	–	–	3

1/ Average number of organisms per pint sample of bottom based on four pint bottom samples. The samples were taken approximately 800 feet north, east, south and west of the proposed outfall opening.

2/ Average number of organisms .5 or less.

Table 58 Abundance of Bottom Organisms: Control Area, Summer 1970 (June 29, 1970)[1/]

Station	AMPHIPODS									ISOPODS									
	A	B	C	D	E	F	G	H	I	A	B	C	D	Pagurus longicarpus	Nassarius	Lamellibranchs	Polychaetes	Mysids
N1	9	1	_	_	_	_	5	_	_	_	_	_	_	_	_	10	6	_
N2	6	_	_	2	2	_	_	_	_	_	_	7	_	_	_	8	5	_
N4	9	_	_	1	3	_	_	_	_	_	_	9	_	_	_	7	1	_
N6	3	_	_	106	23	_	_	_	_	_	_	_	_	1	1	32	3	_
S1	8	_	_	1	_	1	3	_	_	_	_	_	_	_	_	10	2	_
S2	20	_	_	_	_	_	_	_	27	_	_	_	_	_	_	3	23	3
S4	5	_	_	1	1	_	_	_	_	_	_	_	_	_	_	3	21	_
Aver. N	7	0	_	27	7	0	1	_	0	_	_	4	_	0	0	14	4	_
Aver. S	11	0	_	1	0	0	1	_	9	_	_	0	_	0	0	5	15	1
Aver. Total	9	0	_	16	4	0	1	_	4	_	_	2	_	0	0	10	9	0

1/ Number of organisms per pint sample of bottom.

Table 59 Abundance of Bottom Organisms: Control Area, Summer 1970 (July 20, 1970)[1/]

Station	AMPHIPODS									ISOPODS								
	A	B	C	D	E	F	G	H	I	A	B	C	D	Decapods	Nassarius	Lamellibranchs	Polychaetes	Nemerteans
N1	10	1	_	3	_	_	_	_	_	_	_	13	_	_	_	3	4	_
N2	3	_	_	6	1	_	_	_	1	_	_	_	_	_	_	1	5	_
N4	2	_	30	66	31	_	_	_	_	_	_	_	_	2	1	10	4	_
N6	_	_	_	325	53	_	_	_	_	_	_	_	_	1	_	17	11	_
S1	2	_	1	5	1	_	_	_	_	_	_	20	_	_	_	12	2	_
S2	18	6	_	_	_	_	_	_	2	_	_	_	_	_	_	8	26	_
S4	3	10	_	_	1	_	_	_	2	_	1	_	_	_	_	5	4	5
Aver. N	4	0	7	85	21	_	_	_	0	_	_	3	_	1	0	8	6	_
Aver. S	8	5	0	2	0	_	_	_	1	_	0	7	_	_	_	8	11	1
Aver. Total	5	2	8	58	12	_	_	_	1	_	0	5	_	0	0	8	8	1

1/ Number of organisms per pint sample of bottom.

60 Abundance ofBottom Organisms; Control Area, Summer 1970 (Aug. 10, 1970)[1/]

Station	AMPHIPODS									ISOPODS				Decapods	Nassarius	Lamellibranchs	Polychaetes	Nematodes
	A	B	C	D	E	F	G	H	I	A	B	C	D					
N1	2	1	2	4	_	_	_	_	_	_	_	_	_	_	_	2	1	_
N2	20	1	_	_	_	_	_	_	9	1	_	_	_	_	_	_	_	_
N4	11	2	14	_	_	_	_	_	_	_	_	_	_	_	_	4	_	_
N6	_	_	_	128	18	_	_	3	_	_	_	_	_	1	2	5	2	_
S1	4	2	_	2	_	_	_	_	_	_	_	3	1	_	_	5	_	_
S2	9	2	_	_	1	_	_	_	_	_	_	1	_	_	_	4	2	1
S4	7	1	5	5	_	_	_	_	_	_	1	3	_	_	_	4	3	_
Aver. N	8	1	4	33	4	_	_	1	2	_	_	_	_	0	0	3	1	_
Aver. S	7	2	2	2	0	_	_	_	_	_	0	2	0	_	_	4	2	0
Aver. Total	8	1	3	20	3	_	_	0	1	0	0	1	0	0	0	3	1	0

1/ Number of organisms per pint sample of bottom.

Table 61 Abundance of Bottom Organisms: Control Area, Summer 1970 (Sept. 2, 1970)[1/]

Station	Amphipods									Isopods				Pagurus longicarpus	Decapods	Gastropods	Nassarius	Lamellibranchs	Polychaetes	Nemerteans	Cumaceans
	A	B	C	D	E	F	G	H	I	A	B	C	D								
N1	8	–	–	–	–	–	–	–	–	–	–	6	–	–	–	–	–	9	–	–	1
N2	4	4	–	–	–	–	–	–	–	–	–	11	–	–	–	–	–	1	1	–	–
N4	15	–	–	76	9	–	–	–	–	–	–	32	–	–	–	–	–	6	–	–	–
N6	3	–	–	139	13	–	9	–	–	–	–	27	–	–	–	–	–	–	1	–	–
S1	10	–	–	2	–	–	–	–	–	–	–	7	–	–	–	–	–	5	–	2	1
S2	9	2	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	1	–
S4	8	6	–	–	–	–	–	–	–	–	–	1	–	–	–	–	1	1	39	1	1
Aver. N	7	1	–	54	5	–	2	–	–	–	–	19	–	–	–	–	–	4	0	–	0
Aver. S	9	3	–	1	–	–	–	–	–	–	–	3	–	–	–	–	0	3	14	1	1
Aver. Total	8	2	–	31	3	–	1	–	–	–	–	12	–	–	–	–	0	3	6	1	0

1/ Number of organisms per pint sample of bottom.

Table 62 Abundance of Bottom Organisms:1/ Control Area, Fall 1970 (Oct. 10-Nov. 28, 1970)

Date	Number of organisms per pint sample of bottom																				
	Amphipods									Isopods											
	A	B	C	D	E	F	G	H	I	A	B	C	D	E	Nassarius	Lamellibranchs	Solenidae	Annelids	Polychaetes	Mysids	Decapods
Oct. 10	13	-	2	1	-	-	-	-	-	-	-	2	-	-	-	7	-	-	5	-	-
11	9	2	5	-	-	2/	-	2/	2/	-	-	7	-	-	-	2	-	1	7	-	-
24	7	2/	2/	1	-	-	-	-	-	-	-	7	-	-	2/	5	-	2/	-	-	-
31	10	2	4	-	-	-	-	-	-	-	-	6	-	-	-	3	-	-	1	-	-
Nov. 1	16	10	2	4	-	-	-	-	-	-	-	13	-	-	-	3	-	2/	2/	-	-
7	10	2	2/	12	-	-	-	-	-	2/	-	14	-	-	-	3	-	2	-	-	-
22	-	-	-	12	-	-	-	-	-	-	-	12	-	-	1	1	-	-	-	-	-
28	8	2/	2/	7	-	-	-	-	-	2	-	7	-	-	2/	2	-	-	2/	-	-

1/ Average number of organisms per pint sample of bottom based on four bottom samples. The samples were taken approximately 800 feet north, east, south and west of the proposed outfall opening.

2/ Average number of organisms .5 or less

Table 63 Abundance of Bottom Organisms: 1/ Control Area, Winter 1970 (Dec. 19, 1970-Mar. 28, 1971)

Date	Number of organisms per pint sample of bottom																			
	Amphipods									Isopods					Nassarius	Lamellibranchs	Solenidae	Annelids	Polychaetes
	A	B	C	D	E	F	G	H	I	A	B	C	D	E					
1970																			
Dec. 19	11	-	3	5	-	-	-	-	-	-	-	9	-	-	-	1	-	1	2/
1971																			
Jan. 3	5	-	2/	3	-	-	-	-	-	-	-	11	-	-	2/	2	-	1	-
10	9	-	2	6	-	-	-	-	3	-	2/	11	-	-	2/	1	-	1	1
23	4	-	2/	6	-	-	-	-	2/	-	-	12	-	-	-	1	-	2	-
Mar. 6	11	-	2/	9	-	-	-	-	-	-	-	22	-	-	-	3	-	3	-
14	10	-	-	3	-	-	-	-	-	-	-	19	-	-	2/	1	-	2	-
28	6	-	1	5	-	-	-	-	-	-	-	23	-	-	-	1	-	3	-

1/ Average number of organisms per pint sample of bottom based on four bottom samples. The samples were taken approximately 800 feet north, east, south and west of the proposed outfall opening.

2/ Average number of organisms .5 or less.

Table 64 Abundance of Bottom Organisms: 1/Control Area, Spring 1971
(April 3-June 13, 1971)

Date	Number of organisms per pint sample of bottom																			
	Amphipods									Isopods										
	A	B	C	D	E	F	G	H	I	A	B	C	D	E	Nassarius	Lamellibranchs	Annelids	Polychaetes	Decapods
1971																				
April 3	7	-	2/	3	-	-	-	-	-	-	-	12	-	-	-	1	2	-	-	
4	2	-	1	6	-	-	-	-	2/	-	-	4	2/	-	-	2	1	1	-	
11	8	-	2/	1	-	2/	-	-	-	-	-	27	-	-	2/	2/	2/	-	-	
17	8	-	-	1	-	-	-	-	-	-	-	19	-	-	2/	2/	1	-	-	
18	13	-	1	1	-	-	-	-	-	-	-	13	-	-	2/	2	2/	-	-	
24	6	-	2/	2	-	-	2/	-	-	-	-	25	-	-	2/	-	2/	2/	-	
May 1	12	-	-	3	-	-	-	-	-	-	-	12	-	-	1	1	2	2/	-	
2	9	-	-	7	2/	-	-	-	-	-	-	11	-	-	2/	1	2	2/	-	
15	14	-	2/	3	-	-	-	-	-	-	-	7	-	-	2/	1	3	-	-	
22	15	-	2/	7	-	-	-	-	-	-	-	22	-	-	2/	2	5	1	2/	
23	11	-	4	2	-	2/	-	-	-	2/	-	16	-	-	-	2	2/	2/	-	
29	9	-	2/	6	-	2/	-	-	-	-	-	13	-	-	2/	1	6	2/	2/	
June 5	7	-	-	8	-	-	-	-	-	1	-	18	-	-	-	2	1	2/	-	
6	4	-	1	4	-	2/	-	-	-	-	-	21	2/	-	2/	1	2	-	2/	
12	8	-	-	3	-	2/	-	-	-	2/	-	12	-	-	-	1	2	2/	-	
13	5	-	2	3	-	-	-	-	-	2/	-	15	-	-	2/	1	2	2/	-	

1/ Average number of organisms per pint sample of bottom based on four pint bottom samples. The samples were taken approximately 800 feet north, east, south and west of the proposed outfall opening.

2/ Average number of organisms was .5 of less.

Table 65 Relative Abundance of Fishes Captured by Seine:1/ Experimental Area, Spring 1970 (April 18-June 14, 1970).

Date		Area Seined (sq. ft.)	All Species	Silverside	Sand Launt	Hickory Shad	Blackback Flounder	Daylight Flounder	Pipefish	Striped Killifish	Common Killifish	Sheepshead Minnow	Rough Silverside	Grubby Sculpin	Cunner
April	18	2500	—	—	—	—	—	—	—	—	—	—	—	—	—
	25	2500	8840	8760	—	80	—	—	—	—	—	—	—	—	—
	26	3000	132	66	—	—	33	—	—	33	—	—	—	—	—
May	2	1500	938	871	—	—	67	—	—	—	—	—	—	—	—
	9	2000	2150	2050	50	—	—	—	—	50	—	—	—	—	—
	10	2000	6100	5150	—	—	—	—	—	700	250	—	—	—	—
	23	2000	—	—	—	—	—	—	—	—	—	—	—	—	—
	24	2500	640	—	—	—	—	—	—	40	—	600	—	—	—
	30	3750	162	108	—	—	27	—	—	27	—	—	—	—	—
	31	3750	54	—	—	—	—	27	27	—	—	—	—	—	—
June	6	1250	3760	—	—	—	—	—	—	1200	—	2400	160	—	—
	7	2000	—	—	—	—	—	—	—	—	—	—	—	—	—
	13	4500	66	—	—	—	44	—	—	—	—	—	—	22	—
	14	4500	2160	1760	—	—	80	—	80	—	80	—	—	80	80

1/ In terms of number of fish per 100 000 square feet of seining area.

Table 66. Relative Abundance of Fishes Captured by Seine:[1/] Experimental Area, Summer 1970 (June 23-July 30, 1970)

Date	Area Seined (sq. ft.)	All Species	Silversides 0+	Silversides 1+[2/]	Menhaden	Blackback Flounder	Pipefish	Grubby Sculpin	Striped Killifish	Tautog	Cunner	Bluefish	Eel	Tomcod	Common Anchovy	Sea Robin	Smelt
June 23	2500	640	–	–	–	40	40	–	–	–	560	–	–	–	–	–	–
25	7500	5588	–	4921	–	400	267	–	–	–	–	–	–	–	–	–	–
30	2500	6880	40	600	–	560	680	120	–	120	3640	–	920	160	–	–	40
July 2	1500	1067	–	–	–	1000	67	–	–	–	–	–	–	–	–	–	–
7	3500	58	–	29	–	29	–	–	–	–	–	–	–	–	–	–	–
9	5750	17	–	–	–	–	–	–	–	–	–	–	–	–	–	17	–
14	5000	1100	–	–	–	180	–	–	–	–	160	720	–	–	40	–	–
16	3750	3195	1064	–	–	213	–	–	825	–	319	745	27	–	–	–	–
23	6250	800	688	–	16	32	16	–	16	–	–	32	–	–	–	–	–
28	5500	1965	1911	18	–	36	–	–	–	–	–	–	–	–	–	–	–
30	1500	26814	25880	267	333	133	–	–	67	–	67	67	–	–	–	–	–

1/ In terms of number of fish per 100 000 square feet of seining area.

2/ 1+ or older.

Table 67 Relative Abundance of Fishes Captured by Seine:[1/] Experimental Area, Summer 1970 (Aug. 5-27, 1970)

Date	Area Seined (sq. ft.)	All Species	Silverside 0+	Silverside 1+	Menhaden	Blackback Flounder	Daylight Flounder	Pipefish	Striped Killifish	Gunner	Bluefish	Kingfish	Sea Robin
Aug. 5	1500	20277	12006	7537	67	667	–	–	–	–	–	–	–
6	2500	11040	8640	1000	40	1200	40	–	–	80	40	–	–
12	5500	1947	1602	182	–	–	18	36	18	–	18	73	–
13	7500	15840	15162	–	612	13	–	13	–	–	–	40	–
18	1500	3735	2801	67	400	–	–	–	67	–	–	400	–
20	2500	31320	20640	1240	–	–	–	40	80	–	9200	40	80
25	6250	2032	1616	64	–	–	–	–	–	–	352	–	–
27	2500	800	160	–	–	–	–	–	–	–	600	40	–

1/ In terms of number of fish per 100,000 square feet of seining area.

2/ 1+ or older.

Table 68 Relative Abundance of Fishes Captured by Seine:1/ Experimental Area, Fall 1970 (Oct. 10-Nov. 28, 1970)

Date	Area Seined (sq. ft.)	All Species	Silverside	Menhaden	Striped Killifish	Bay Anchovy	White Mullet
Oct. 10			No samples taken				
11			No samples taken				
24	2000	23450	5900	50	-	17500	-
31	625	1280	1280	-	-	-	-
Nov. 1	1500	667	-	-	667	-	-
7	2000	20550	17950	-	50	-	2550
22	5000	500	500	-	-	-	-
28	1250	560	-	160	400	-	-

1/ In terms of number of fish per 100000 square feet of seining area

Table 69 Relative Abundance of Fishes Captured by Seine:1/ Experimental and Control Areas, Winter 1970 (Dec. 19, 1970-Mar. 28, 1971)

Date	Experimental Area			Control Area	
	Area Seined (sq. ft.)	All Species	Silverside 3/	Area Seined (sq. ft,)	All Species
1970					
Dec. 19	3500	783	783	1250	-
1971					
Jan. 3	3500	-	-	1250	-
10 2/	-	-	-	-	-
23 2/	-	-	-	-	-
Mar. 6	5000	-	-	1250	-
14	1500	-	-	1500	-
28	1250	-	-	1250	-

1/ In terms of fish per 100000 square feet of seining area.
2/ No seining because of shore ice.
3/ Total of 27 silversides; length frequency was:

50-54	2	60-64	8	70-74	3	80-84	1	90-94	1
55-59	3	65-69	5	75-79	3	85-89	1		

Table 70 Relative Abundance of Fishes Captured by Seine: 1/Experimental and Control Areas, Spring 1971 (April 3-June 13, 1971)

Date 1970		Experimental Area2/								Control Area3/					
		Area Seined (sq. ft.)	All Species	Silverside	Sand Launt	Blackback Flounder	Pipefish	Common Killifish	Common Anchovy	Area Seined (sq. ft.)	All Species	Silverside	Daylight Flounder	Pipefish	Common Sea Robin
April	3	3750	0	-	-	-	-	-	-	1250	0	-	-	-	-
	4	5000	0	-	-	-	-	-	-	1250	0	-	-	-	-
	11	2500	0	-	-	-	-	-	-	1250	0	-	-	-	-
	17	2500	880	880	-	-	-	-	-	1250	0	-	-	-	-
	18	2500	0	-	-	-	-	-	-	1250	0	-	-	-	-
	24	1250	0	-	-	-	-	-	-	1250	160	160	-	-	-
May	1	3500	0	-	-	-	-	-	-	1250	0	-	-	-	-
	2	3500	58	58	-	-	-	-	-	1250	0	-	-	-	-
	15	6250	80	16	16	16	32	-	-	1250	0	-	-	-	-
	22	1250	160	-	-	80	-	80	-	1250	0	-	-	-	-
	23	1250	0	-	-	-	-	-	-	1250	0	-	-	-	-
	29	3750	81	-	-	54	27	-	-	1250	80	-	-	80	-
June	5	1250	0	-	-	-	-	-	-	1250	0	-	-	-	-
	6	3750	81	-	-	27	-	27	27	1250	160	-	-	160	-
	12	5000	60	-	-	-	40	20	-	1250	80	-	-	-	80
	13	5000	-	-	-	-	-	-	-	1250	80	-	80	-	-

1/ In terms of fish per 100,000 square feet of seining area.

2/ Lengths of fish in mm.: Silverside 60-64,1; 65-69,4; 70-74,4; 75-79,5; 80-84,5; 85-89,3; 90-94,1; 95-99,2 (Total 25 fish). Sand Launt 50-54,1. Blackback Flounder 50-54,1; 60-64,1; 70-74,1;225-229,1; 260-264,1. Pipefish 125-129,1; 195-199,1. Common Killifish 40-44,1; 60-64,1; 70-74,1. Common Anchovy 60-64,1.

3/ Lengths of fish in mm.: Silverside 75-79,1; 80-84,1. Daylight Flounder 240-244,1. Pipefish 165-169,1; 185-189,1; 205-209,1. Common Sea Robin 330-334,1.

Table 71 Relative Abundance of Fishes Captured by Seine:1/ Control Area, Spring 1970 (April 18-June 14, 1970)

Date	Area Seined (sq. ft.)	All Species	Silversides	Sand Launt	Blackback Flounder	Daylight Flounder	Striped Killifish	Sheepshead Minnow
April 18	1250	–	–	–	–	–	–	–
25	1250	–	–	–	–	–	–	–
26	1250	480	480	–	–	–	–	–
May 2	1250	1360	880	80	–	–	400	–
9	1250	–	–	–	–	–	–	–
10	1250	–	–	–	–	–	–	–
23	1250	22480	480	21120	400	80	320	80
24	1250	80	80	–	–	–	–	–
30	1250	160	160	–	–	–	–	–
31	1250	80	–	–	–	–	80	–
June 6	1250	–	–	–	–	–	–	–
7	1000	–	–	–	–	–	–	–
13	1250	–	–	–	–	–	–	–
14	1250	–	–	–	–	–	–	–

1/ In terms of number of fish per 100 000 square feet of seining area.

Table 72 Relative Abundance of Fishes Captured by Seine:[1/]
Control Area, Summer 1970 (June 23-July 30, 1970)

Date	Area Seined (sq. ft.)	All Species	Silverside 0+	Silverside 1+	Menhaden	Blackback Flounder	Daylight Flounder	Pipefish	Bluefish	Tomcod	Puffer	Sea Robin
June 23	3000	167	–	67	–	–	33	–	–	–	67	–
25	2500	3000	–	3000	–	–	–	–	–	–	–	–
30	1250	480	–	–	–	240	–	–	–	80	160	–
July 2	1750	228	–	–	–	57	–	57	–	–	57	57
7	1500	134	–	–	–	67	67	–	–	–	–	–
9	1750	114	57	–	–	57	–	–	–	–	–	–
14	1500	246	–	–	–	123	123	–	–	–	–	–
16	1750	57	–	–	–	57	–	–	–	–	–	–
23	3750	961	641	–	107	27	–	–	186	–	–	–
28	1500	3135	–	–	400	–	–	–	2735	–	–	–
30	2000	275	175	–	–	–	50	–	–	–	–	50

1/ In terms of number of fish per 100 000 square feet of seining area.

Table 73 Relative Abundance of Fishes Captured by Seine:[1] Control Area, Summer 1970 (Aug. 5-27, 1970)

Date	Area Seined (sq. ft.)	All Species	Silverside		Menhaden	Blackback Flounder	Pipefish	Striped Killifish	Puffer	Bluefish	Kingfish	Sea Robin
			0+	1+[2]								
Aug. 5	1250	3520	2880	240	400	–	–	–	–	–	–	–
6	1500	12252	8004	4002	–	123	–	–	–	–	123	–
12	1250	4880	4640	80	–	160	–	–	–	–	–	–
13	1750	12847	12105	685	–	–	–	–	–	–	57	–
18	1750	3027	2684	–	343	–	–	–	–	–	–	–
20	1500	8138	7737	200	–	–	67	67	–	–	–	67
25	1500	1959	1334	133	–	123	–	–	123	123	123	–
27	1500	13740	13740	–	–	–	–	–	–	–	–	–

1/ In terms of number of fish per 100,000 square feet of seining area.

2/ 1+ or older.

Table 74 Relative Abundance of Fishes Captured by Seine:1/ Control Area, Fall 1970 (Oct. 10-Nov. 28, 1970)

Date	Area Seined (sq. ft.)	All Species	Silverside	Daylight Flounder
Oct. 10		No samples taken		
11		No samples taken		
24	1250	-	-	-
31	1250	-	-	-
Nov. 1	1250	240	240	-
7	1250	-	-	-
22	1250	1200	1120	80
28	1250	-	-	-

1/ In terms of number of fish per 100000 square feet of seining area

Table 75 Size Composition of Silversides:1/ Experimental and Control Areas, Spring 1970. (April 18-June 14, 1970)

	Experimental Area				Control Area			
	April 18-May 10		May 23-June 14		April 18-May 10		May 23-June 14	
	No.	%	No.	%	No.	%	No.	%
55-59	–	–	–	–	–	–	–	–
60-64	5	1.3	–	–	1	5.9	–	–
65-69	20	5.3	–	–	1	5.9	–	–
70-74	53	14.0	2	7.7	5	29.4	1	11.1
75-79	78	20.6	3	11.5	4	23.5	2	22.2
80-84	69	18.3	4	15.4	3	17.6	1	11.1
85-89	56	14.8	1	3.8	1	5.9	1	11.1
90-94	40	10.6	8	30.8	1	5.9	1	11.1
95-99	30	7.9	3	11.5	1	5.9	1	11.1
100-104	14	3.7	3	11.5	–	–	1	11.1
105-109	10	2.6	2	7.7	–	–	1	11.1
110-114	1	.3	–	–	–	–	–	–
115-119	2	.5	–	–	–	–	–	–
Total	378	99.9	26	99.9	17	100.0	9	99.9

1/ Fish taken in quantitative tows of the 50 foot haul seine. 1+ fish born in 1969.

Table 76 Size Composition of 0+ and 1+ Silversides:1/ Experimental and Control Areas, Summer 1970 (June 23-July 30, 1970)

Length (mm.)	Experimental Area				Control Area			
	0+		1+		0+		1+	
	No.	%	No.	%	No.	%	No.	%
10-14	2		—	—	—	—	—	—
15-19	5	.9	—	—	1	1.7	—	—
20-24	13	2.3	—	—	—	—	—	—
25-29	32	5.5	—	—	1	1.7	—	—
30-34	14	2.4	—	—	1	1.7	—	—
35-39	13	2.3	—	—	1	1.7	—	—
40-44	3	.5	—	—	1	1.7	—	—
45-49	6	1.0	—	—	—	—	—	—
50-54	16	2.8	—	—	7	11.7	—	—
55-59	125	21.7	—	—	13	21.7	—	—
60-64	218	37.8	—	—	18	30.0	—	—
65-69	106	18.4	1	1.7	15	25.0	—	—
70-74	19	3.3	3	5.2	2	3.3	1	1.3
75-79	5	.9	8	13.8	—	—	3	3.9
80-84	—	—	6	10.3	—	—	2	2.6
85-89	—	—	7	12.1	—	—	12	15.6
90-94	—	—	9	15.5	—	—	25	32.5
95-99	—	—	11	19.0	—	—	14	18.2
100-104	—	—	6	10.3	—	—	11	14.3
105-109	—	—	1	1.7	—	—	8	10.4
110-114	—	—	1	1.7	—	—	1	1.3
115-119	—	—	5	8.6	—	—	—	—
Total	577	99.8	58	99.9	60	100.2	77	100.1

1/ Fish taken in quantitative tows of the 50 foot haul seine. 0+ designates the fish born in 1970; 1+ those born in 1969.

Table 77 Size Composition of 0+ and 1+ Silversides:[1/] Experimental and Control Areas, Summer 1970 (Aug. 5-27, 1970)

Length (mm.)	Experimental Area 0+ No.	Experimental Area 0+ %	Experimental Area 1+ No.	Experimental Area 1+ %	Control Area 0+ No.	Control Area 0+ %	Control Area 1+ No.	Control Area 1+ %
10-14	–	–	–	–	–	–	–	–
15-19	–	–	–	–	–	–	–	–
20-24	1	.0	–	–	–	–	–	–
25-29	2	.1	–	–	5	.6	–	–
30-34	6	.3	–	–	3	.4	–	–
35-39	38	1.7	–	–	26	3.2	–	–
40-44	62	2.7	–	–	49	6.0	–	–
45-49	133	5.8	–	–	61	7.5	–	–
50-54	232	10.1	–	–	86	10.5	–	–
55-59	386	16.9	–	–	107	13.1	–	–
60-64	590	25.8	–	–	132	16.2	–	–
65-69	475	20.8	–	–	137	16.8	–	–
70-74	216	9.4	–	–	130	15.9	–	–
75-79	100	4.4	–	–	51	6.3	–	–
80-84	26	1.1	6	3.3	19	2.3	7	8.6
85-89	20	.9	17	9.2	9	1.1	7	8.6
90-94	–	–	37	20.1	–	–	8	9.9
95-99	–	–	57	31.0	–	–	26	32.1
100-104	–	–	35	19.0	–	–	16	19.8
105-109	–	–	12	6.5	–	–	9	11.1
110-114	–	–	15	8.2	–	–	5	6.2
115-119	–	–	2	1.1	–	–	3	3.7
120-124	–	–	3	1.6	–	–	–	–
Total	2287	100.0	184	100.0	815	99.9	81	100.0

1/ Fish taken in quantitative tows of the 50 foot haul seine. 0+ designates the fish born in 1970; 1+ those born in 1969.

Table 78 Size Composition of Silversides:1/ Experimental and Control Areas, Fall 1970 (Oct. 10-Nov. 28, 1970)

Length	Experimental Area				Control Area			
	Oct. 10-31		Nov. 1-28		Oct. 10-31		Nov. 1-28	
(mm)	No.	%	No.	%	No.	%	No.	%
45-49	1	0.8	-	-	-	-	-	-
50-54	-	-	-	-	-	-	-	-
55-59	4	3.2	-	-	-	-	-	-
60-64	9	7.1	81	21.1	-	-	6	35.3
65-69	7	5.6	102	26.5	-	-	8	47.0
70-74	6	4.8	61	15.9	-	-	3	17.6
75-79	18	14.3	46	12.0	-	-	-	-
80-84	24	19.0	43	11.2	-	-	-	-
85-89	16	12.7	18	4.7	-	-	-	-
90-94	21	16.7	11	2.9	-	-	-	-
95-99	10	7.9	18	4.7	-	-	-	-
100-104	7	5.6	4	1.0	-	-	-	-
105-109	1	0.8	-	-	-	-	-	-
110-114	2	1.6	-	-	-	-	-	-
Total	126	100.1	384	100.0	-	-	17	99.0

1/ Fish taken in quantitative tows of the 50 foot haul seine

Table 79 Size Composition of All Species of Fishes Exclusive of Silversides:1/ Experimental Area, Spring 1970. (April 18-June 14, 1970)

Length (mm)	Sand Launt	Hickory Shad	Blackback Flounder	Daylight Flounder	Pipefish	Striped Killifish	Common Killifish	Sheepshead Minnow	Rough Silverside	Grubby Sculpin	Cunner
20-24											
25-29										2	
30-34								7			
35-39							2	13			
40-44						4	2	23			
45-49						3		2			
50-54						7					1
55-59						6	1				
60-64				1		5					
65-69						2					
70-74			1			1					
75-79			2			1					
80-84						1	1				
85-89	1		1			1					
90-94									2		
95-99			1								
100-104											
105-109						2					
110-114											
115-119		2			1						
120-124											
125-129											
130-134											
135-139			1								
160-164					1						
Total	1	2	6	1	2	33	6	45	2	2	1

1/ Fish taken in quantitative tows of the 50 foot haul seine.

Table 80 Size Composition of All Species of Fishes Exclusive of Silversides:[1/] Experimental Area, Summer 1970 (June 23-July 30, 1970)

Length (mm.)	Menhaden	Blackback Flounder	Pipefish	Grubby Sculpin	Striped Killifish	Tautog	Cunner	Bluefish	Eel	Tomcod	Common Anchovy	Sea Robin	Smelt
20-24	13	2	–	–	–	1	–	–	–	–	–	–	–
25-29	15	10	–	–	1	–	–	–	–	–	–	–	–
30-34	6	16	–	–	1	–	–	–	–	1	–	–	–
35-39	–	8	–	–	–	–	–	–	–	–	–	–	–
40-44	2	2	–	–	–	–	–	–	–	–	–	–	–
45-49	1	3	–	–	–	–	2	–	–	–	–	–	–
50-54	–	1	1	–	–	–	9	–	1	–	–	–	–
55-59	–	–	–	–	–	–	14	8	1	1	–	–	–
60-64	–	–	–	2	–	–	13	7	1	–	–	–	–
65-69	–	–	–	–	–	–	15	10	1	2	–	–	–
70-74	–	–	–	–	–	–	12	12	–	–	–	–	–
75-79	–	6	–	–	–	–	18	14	–	–	–	–	–
80-84	–	3	–	–	–	–	17	11	–	–	–	–	–
85-89	–	3	–	1	–	–	6	4	–	–	–	–	–
90-94	–	–	–	–	–	1	8	–	–	–	–	–	–
95-99	–	1	–	–	–	–	4	–	–	–	–	–	–
100-104	–	1	–	–	–	–	4	–	–	–	–	–	–
105-109	–	–	–	–	–	1	1	–	–	–	–	–	–
110-114	–	–	–	–	–	–	1	–	–	–	2	–	–
115-119	–	1	–	–	–	–	–	–	1	–	–	–	1
120-124	–	–	–	–	–	–	1	–	1	–	–	–	–
125-129	–	–	–	–	–	–	–	–	–	–	–	–	–
130-134	–	–	–	–	–	–	–	–	–	–	–	–	–

1/ Fish taken in quantitative tows of the 50 foot haul seine.

Table 80 (Cont.) Size Composition of All Species of Fishes Exclusive of Silversides[1/] Experimental Area, Summer 1970 (June 23-July 30, 1970)

Length (mm.)	Menhaden	Blackback Flounder	Pipefish	Grubby Sculpin	Striped Killifish	Tautog	Cunner	Bluefish	Eel	Tomcod	Common Anchovy	Sea Robin	Smelt
135-139	–	–	–	–	–	–	–	–	2	–	–	–	–
140-144	–	–	–	–	–	–	1	–	1	–	–	–	–
145-149	–	–	3	–	–	–	–	–	–	–	–	–	–
150-154	–	–	1	–	–	–	–	–	–	–	–	–	–
155-159	–	–	1	–	–	–	–	–	–	–	–	–	–
160-164	–	–	3	–	–	–	–	–	2	–	–	–	–
165-169	–	–	3	–	–	–	–	–	1	–	–	–	–
170-174	–	–	3	–	–	–	–	–	–	–	–	–	–
175-179	–	–	–	–	–	–	–	–	–	–	–	–	–
180-184	–	–	2	–	–	–	–	–	3	–	–	–	–
185-189	–	–	2	–	–	–	–	–	1	–	–	–	–
190-194	–	–	1	–	–	–	–	–	1	–	–	–	–
195-199	–	–	–	–	–	–	–	–	1	–	–	–	–
200-204	–	–	–	–	–	–	–	–	–	–	–	–	–
205-209	–	–	–	–	–	–	–	–	1	–	–	–	–
210-214	–	–	–	–	–	–	–	–	1	–	–	–	–
215-219	–	–	–	–	–	–	–	–	2	–	–	–	–
220-224	–	–	1	–	–	–	–	–	–	–	–	–	–
225-229	–	–	1	–	–	–	–	–	–	–	–	–	–
235-239	–	–	–	–	–	–	–	–	1	–	–	–	–
290-294	–	–	–	–	–	–	–	–	–	–	–	1	–
820-824	–	–	–	–	–	–	–	–	1	–	–	–	–
Total	37	57	22	3	2	3	126	67	24	4	2	1	1

1/ Fish taken in quantitative tows of the 50 foot haul seine.

Table 81 Size Composition of All Species of Fishes Exclusive of Silversides:[1/] Experimental Area, Summer 1970 (Aug. 5-27, 1970)

	Menhaden	Blackback Flounder	Daylight Flounder	Pipefish	Striped Killifish	Cunner	Bluefish	Kingfish	Sea Robin
20-24	–	–	–	–	1	–	–	1	–
25-29	–	2	–	–	1	–	–	2	–
30-34	1	5	–	–	1	–	–	2	–
35-39	–	8	–	–	–	–	–	1	–
40-44	5	9	–	–	1	–	–	3	–
45-49	11	8	–	–	–	–	–	2	–
50-54	19	5	–	–	–	–	–	2	–
55-59	15	3	–	–	–	–	–	1	–
60-64	–	1	–	–	–	–	–	–	–
65-69	3	–	–	–	–	–	–	1	–
70-74	–	–	–	1	–	–	–	–	–
75-79	–	–	–	1	–	1	–	–	–
80-84	–	–	–	1	–	–	–	–	–
85-89	–	–	–	–	–	1	–	–	–
90-94	–	–	–	–	–	–	–	–	–
95-99	–	–	–	–	–	–	5	–	–
100-104	–	–	–	–	–	–	18	–	–
105-109	–	–	–	–	–	–	14	–	–
110-114	–	–	–	1	–	–	29	–	–
115-119	–	–	–	–	–	–	47	–	–
120-124	–	–	–	–	–	–	42	–	–
125-129	–	–	–	–	–	–	26	–	–
130-134	–	–	–	–	–	–	42	–	–
135-139	–	–	–	–	–	–	14	–	–
140-144	–	–	–	–	–	–	15	–	–
145-149	–	–	–	–	–	–	10	–	–
150-154	–	–	–	–	–	–	3	–	–
155-159	–	–	–	–	–	–	1	–	–
160-164	–	–	–	–	–	–	1	–	–
165-169	–	–	–	–	–	–	–	–	–
170-174	–	–	–	–	–	–	–	–	–
175-179	–	–	–	–	–	–	–	–	1
215-219	–	–	1	–	–	–	–	–	–
225-229	–	–	–	–	–	–	–	–	1
275-279	–	–	1	–	–	–	–	–	–
Total	54	41	2	4	4	2	267	15	2

1/ Fish taken in quantitative tows of the 50 foot haul seine.

Table 82 Size Composition of All Species of Fishes Exclusive of Siversides:1/ Experimental and Control Areas, Fall 1970 (Oct. 10-Nov. 28, 1970)

	Experimental Area			
Length	Menhaden	Striped Killifish	Bay Anchovy	White Mullet
25-29	-	-	14	-
30-34	-	-	189	-
35-39	2	2	119	-
40-44	1	-	21	-
45-49	-	1	7	-
50-54	-	2	-	-
55-59	-	2	-	-
60-64	-	-	-	-
65-69	-	-	-	-
70-74	-	-	-	1
75-79	-	-	-	-
80-84	-	-	-	-
85-89	-	-	-	-
90-94	-	-	-	6
95-99	-	-	-	14
100-104	-	-	-	12
105-109	-	1	-	11
110-114	-	-	-	3
115-119	-	-	-	3
120-124	-	2	-	1
125-129	-	-	-	-
130-134	-	2	-	-
Total	3	12	350	51

	Control Area
Length	Daylight Flounder
55-59	1

1/ Fish taken in quantitative tows of the 50 foot haul seine

Table 83 Size Composition of All Species of Fishes Exclusive of Silversides:1/ Control Area, Spring 1970 (April 18-June 14, 1970)

Length (mm)	Sand Launt	Blackback Flounder	Daylight Flounder	Striped Killifish	Sheepshead Minnow
20-24	–	–	–	–	–
25-29	–	–	–	–	–
30-34	–	–	–	–	–
35-39	–	–	–	1	1
40-44	–	–	–	2	–
45-49	–	–	–	–	–
50-54	–	–	–	1	–
55-59	–	–	–	–	–
60-64	–	1	–	1	–
65-69	–	1	–	–	–
70-74	1	3	–	1	–
75-79	48	–	–	–	–
80-84	53	–	–	1	–
85-89	91	–	–	–	–
90-94	33	–	–	1	–
95-99	21	–	–	2	–
100-104	13	–	–	–	–
105-109	3	–	–	–	–
110-114	3	–	–	–	–
115-119	–	–	1	–	–
120-124	–	–	–	–	–
125-129	–	–	–	–	–
240-244					
Total	265	5	1	10	1

1/ Fish taken in quantitative tows of the 50 foot haul seine.

Table 84 Size Composition of All Species of Fishes Exclusive of Silversides[1/] Control Area, Summer 1970 (June 23-July 30, 1970)

Length (mm.)	Menhaden	Blackback Flounder	Daylight Flounder	Pipefish	Bluefish	Tomcod	Puffer	Sea Robin
20-24	–	2	–	–	–	–	–	–
25-29	–	3	2	–	–	–	–	–
30-34	3	5	–	–	–	–	–	–
35-39	1	–	–	–	–	–	–	–
40-44	–	–	–	–	–	–	–	–
45-49	–	–	–	1	–	–	–	–
50-54	–	–	–	–	–	–	–	–
55-59	–	–	–	–	–	–	–	–
60-64	–	–	–	–	1	1	–	–
65-69	–	–	–	–	4	–	–	–
70-74	–	–	–	–	11	–	–	–
75-79	–	–	–	–	11	–	–	–
80-84	–	–	–	–	15	–	–	–
85-89	–	–	–	–	6	–	–	–
150-154	–	–	–	–	–	–	2	–
155-159	–	–	–	–	–	–	1	–
180-184	–	–	–	–	–	–	1	–
185-189	–	–	–	–	–	–	1	–
215-219	–	–	1	–	–	–	–	–
250-254	–	–	1	–	–	–	–	–
275-279	–	–	–	–	–	–	–	1
310-314	–	–	–	–	–	–	–	1
315-319	–	–	–	–	–	–	–	–
320-324	–	–	1	–	–	–	–	–
Total	4	10	5	1	48	1	5	2

1/ Fish taken in quantitative tows of the 50 foot haul seine.

Table 85 Size Composition of All Species of Fishes Exclusive of Silversides:[1]/ Control Area, Summer 1970 (Aug. 5-27, 1970)

Length mm.	Menhaden	Blackback Flounder	Pipefish	Striped Killifish	Puffer	Bluefish	Kingfish	Sea Robin
20-24	–	–	–	–	–	–	1	–
25-29	5	–	–	–	–	–	1	–
30-34	–	1	–	1	–	–	–	–
35-39	–	2	–	–	–	–	–	–
40-44	–	2	–	–	–	–	3	–
45-49	–	–	–	–	–	–	–	–
50-54	–	–	–	–	–	–	–	–
55-59	–	–	–	–	–	–	–	–
60-64	–	1	–	–	–	–	–	–
65-69	–	–	–	–	–	–	–	–
70-74	–	–	–	–	–	–	–	–
75-79	–	–	–	–	–	–	–	–
80-84	–	–	1	–	–	–	–	–
85-89	–	–	–	–	–	–	–	–
90-94	–	–	–	–	–	–	–	–
95-99	–	–	–	–	–	–	–	–
100-104	–	–	–	–	–	1	–	–
105-109	–	–	–	–	–	1	–	–
110-114	–	–	–	–	–	3	–	–
115-119	–	–	–	–	–	–	–	–
120-124	–	–	–	–	–	–	–	–
125-129	–	–	–	–	–	1	–	–
130-134	–	–	–	–	–	1	–	–
135-139	–	–	–	–	–	–	–	–
140-144	–	–	–	–	1	1	–	–
155-159	–	–	–	–	1	–	–	–
285-289	–	–	–	–	–	–	–	1
Total	5	6	1	1	2	8	5	1

1/ Fish taken in quantitative tows of the 50 foot haul seine.

Table 86 Fish Count from Central Buoy to Station N1: Experimental and Control Areas, Summer 1970 (June 23-July 30, 1970)

Date	Experimental Area							Control Area			
	Cunner	Tautog	Sea Robin	Winter Flounder	Daylight Flounder	Silverside	Unidentified	Cunner	Tautog	Sea Robin	Winter Flounder
June 23	1	–	3	–	–	–	–	–	–	12	–
25	–	–	8	–	–	–	–	–	–	6	–
30	–	–	4	–	–	–	–	–	–	–	–
July 2	30	–	5	–	–	–	–	–	–	2	–
7	–	1[1]/	2	–	–	–	–	–	1[1]/	–	–
9	–	–	4[2]/	–	–	–	–	–	–	9[5]/	–
14	–	–	1	–	–	–	1[3]/	–	–	–	8[3]/
16	–	1[1]/	1	–	1[3]/	200[4]/	–	–	–	2[1]/	11[3]/
23	–	–	3	–	–	–	–	–	–	2[2]/	13[3]/
28	–	–	1	–	–	–	–	–	–	–	4[3]/
30	–	–	–	1[3]/	–	–	–	–	–	1	6[3]/

1/ At station N1.
2/ One fish at central buoy.
3/ At central buoy.
4/ Estimated.
5/ Two fish at station N1.

Table 87 Fish Count from Central Buoy to Station N1: Experimental and Control Areas, Summer 1970 (Aug. 5-27, 1970)

	Experimental Area						Control Area			
	Cunner	Tautog	Sea Robin	Winter Flounder	Skate	Rudder Fish	Cunner	Tautog	Winter Flounder	Sea Robin
Aug. 5	–	–	3	1[1/]	–	–	–	–	2[1/]	2
6	–	1	7[2/]	–	1[1/]	–	–	1[3/]	–	2[4/]
12	–	–	1	–	–	–	3[1/]	–	3[1/]	–
13	–	–	–	–	–	–	3[1/]	–	3[1/]	3[4/]
18	–	1[1/]	2	–	–	–	5[1/]	–	–	1[3/]
20	–	–	–	–	–	–	8[1/]	–	1[1/]	–
25	–	–	–	–	–	1[1/]	10[1/]	–	1[1/]	–
27	1[3/]	–	6[4/]	–	–	1[1/]	9	–	1	1[1/]

1/ At central buoy.

2/ Two fish at central buoy.

3/ At station N1.

4/ One fish at central buoy.

Table 88 Abundance of Fouling Organisms: July 27, 1970-38 Day Exposure[1]

Station	Hydrozoan Colonies No.	Hydrozoan Colonies Area (sq. mm.)	Bryozoan Colonies No.	Bryozoan Colonies Size Range (mm.)	Worm Tubes No.	Worm Tubes Size Range	Barnacles No.	Barnacles Size Range (mm)	Ascidians No.	Ascidians Size Range (mm)
N1	2	299/3240	1	3.6	2	5.8-12.7	–	–	5	4.3-12.0
N2	4[2]	182/702	–	–	1	9.4	–	–	–	–
N4	6[2]	9/14/44 77/84/133	–	–	–	–	–	–	1	3.5
N6[3]	–	–	–	–	–	–	–	–	–	–
S1	2	16/288	9	1.0-3.2	–	–	–	–	–	–
S2	2	390/510	24	1.3-5.0	–	–	1	2.7	–	–
S4	2[2]	–	–	–	–	–	–	–	2	2.6-4.6
E1	4	14/24 50/96	2	2.8-3.5	–	–	–	–	–	–
E2	1[2]	2240	–	–	–	–	–	–	–	–
E4	1[2]	15	–	–	–	–	–	–	1	2.6
E6	1[2]	570	–	–	–	–	1	2.2	–	–
W1	1[2]	399	–	–	–	–	–	–	–	–
W2	1[2]	108	–	–	–	–	–	–	1	1.2
W4	2	204/598	–	–	1	20.0	–	–	–	–
W6	1[2]	–	–	–	–	–	2	2.7-3.4	–	–
Control										
N1	1[2]	1215	–	–	–	–	–	–	1	2.0
N2	1[2]	1462	–	–	–	–	–	–	1	4.1
N4[4]	–	–	–	–	–	–	–	–	–	–
N6	7	97/101/189 232/246/383 858	–	–	–	–	–	–	–	–
S1	2	1739/3591	–	–	–	–	–	–	–	–
S2	1[2]	135	–	–	–	–	–	–	–	–
S4	1[2]	184	2	1.9-21	–	–	–	–	–	–

1/ No. of organisms per 100x160 mm. (16000 sq. mm.) plate. Area covered by hydrozoans was determined by measuring them at their attachment. Bryozoan colony size is its greatest diameter. Worm tube size is its length. Barnacle size is its greatest basal diameter. Plates were first exposed on June 19, 1970.

2/ Also scattered small hydrozoan colonies which could not be individually enumerated.

3/ Plate lost.

4/ Plate buried in bottom.

Table 89 Abundance of Fouling Organisms:
Aug. 25, 1970-67 Day Exposure[1]/

Station	Hydrozoan Colonies		Bryozoan Colonies		Worm Tubes		Barnacles		Ascidians	
	No.	Area (sq. mm.)	No.	Size Range (mm)	No.	Size Range	No.	Size Range (mm)	No.	Size Range (mm)
Experimental										
N1	2[2]/	138/146	5	7.7-24.1	-	-	17	1.1-6.5	-	-
N2[3]/	-	-	1	35.0	-	-	3	1.5-2.5	-	-
N4	3	816/1716	-							
		759	-	-	-	-	20	1.7-4.5		
N6[4]/	-	-	-	-	-	-	-	-	-	-
S1[3]/	-	-	24	2.3-6.5	-	-	13	0.1-3.7	-	-
S2	2	742/4848	68	5.0-36.0	-	-	34	1.8-8.0	-	-
S4	2[2]/	1080/3834	27	2.7-26.2	-	-	2	2.4-7.5	-	-
E1	2/	-	2	4.7-17.5	-	-	32	0.1-5.4	-	-
E2	3	11/37/4037	-	-	-	-	27	0.1-5.7	-	-
E4	1	414	2	4.0-9.0	-	-	11	2.0-6.2	-	-
E6	1[2]/	2330	2	5.9-6.1	-	-	72	0.3-4.2	-	-
W1	1	1782	2	11.9-17.0	-	-	37	2.0-5.7	-	-
W2	1	1960	1	14.0	-	-	89	2.5-7.0	-	-
W4[4]/	-	-	-	-	-	-	-	-	-	-
W6[4]/	-	-	-	-	-	-	-	-	-	-
Control										
N1	1[2]/	976	-	-	-	-	10	1.0-6.8	-	-
N2	3[2]/	1155/1376								
		1394	-	-	-	-	7	1.9-5.2	-	-
N4[4]/	-	-	-	-	-	-	-	-	-	-
N6[4]/	-	-	-	-	-	-	-	-	-	-
S1	4[2]/	9/17								
		143/163	-	-	-	-	42	1.2-3.7	-	-
S2	2/	-	1	9.8	-	-	14	1.3-2.4	-	-
S4	2	272/3926	16	5.0-40.0	-	-	18	0.7-4.0	-	-

1/ No. of organisms per 100x160 mm. (16000 sq. mm.) plate. Area covered by hydrozoans was determined by measuring them at their attachment. Bryozoan colony size is its greatest diameter. Worm tube size is its length. Barnacle size is its greatest basal diameter. Plates were first exposed on June 19, 1970.

2/ Also scattered small hydrozoan colonies which could not be individually enumerated.

3/ Plate lost.

4/ Plate buried in bottom.

Table 90 Weight of Tubes Collected in Bottom Samples: Experimental Area, June 29-Sept. 2, 1970[1/]

Station	June 29	July 20	Aug. 10	Sept. 2
Exp. N1	5.6	27.0	0.0	1.0
N2	6.0	7.0	1.0	2.0
N4	11.1	3.8	0.0	3.0
N6	5.5	10.2	5.0	16.0
S1	2.2	3.0	1.0	3.0
S2	2.3	0.0	0.0	1.0
S4	0.0	0.0	0.0	0.0
E1	14.5	2.9	2.0	0.0
E2	10.5	12.0	3.0	0.0
E4	6.0	8.0	5.0	1.5
E6	3.5	20.0	20.0	7.0
W1	3.0	3.5	4.8	0.0
W2	4.5	5.0	1.3	0.0
W4	3.0	1.5	1.5	0.0
W6	0.0	0.0	0.5	2.5
Aver. N	7.0	12.0	1.5	5.5
Aver. S	1.5	1.0	.3	1.3
Aver. E	8.6	11.4	7.5	2.1
Aver. W	2.6	2.5	2.0	0.1
Total Aver.	5.2	6.9	3.0	2.4

1/ Empty tube weights in grams.

Table 91 Weight of Tubes Collected in Bottom Samples: Control Area, June-Sept. 1970

Station	June 29	July 20	Aug. 10	Sept. 2
Control N1	0.0	0.0	0.0	1.5
N2	0.0	0.8	0.0	0.0
N4	3.2	37.0	0.0	0.0
N6	42.5	53.0	22.0	15.0
S1	0.0	0.0	0.0	0.0
S2	0.0	0.0	0.0	0.0
S4	0.0	0.0	0.0	0.0
Aver. N	11.4	22.7	5.5	4.1
Aver. S	0.0	0.0	0.0	0.0
Total Aver.	6.5	12.9	3.2	2.3

1/ Empty tube weights in grams.

Table 92 Physical and Chemical Data: 1/Experimental Area, 1968-1971

Month	Year	Week	Temp. Cent. Top	Temp. Cent. Bottom	Salinity (Sp. Grav.)	Oxygen (ppm)
Jan.	1971	1	2.0	2.0	1.020	12.1
	Aver.	1	2.0	2.0	1.020	12.1
	1971	2	2.0	1.0	1.020	12.2
	Aver.	2	2.0	1.0	1.020	12.2
	1971	3	0.0	-0.5	1.020	12.1
	Aver.	3	0.0	-0.5	1.020	12.1
Feb.	1970	1	0.5	1.0	1.018	12.5
	Aver.	1	0.5	1.0	1.018	12.5
	1970	4	0.0	0.5	1.019	13.0
	Aver.	4	0.0	0.5	1.019	13.0
Mar.	1970	1	2.0	2.0	1.019	13.0
	1971	1	2.5	2.0	1.020	13.1
	Aver.	1	2.2	2.0	1.019	13.0
	1970	2	2.0	1.5	1.019	12.5
	Aver.	2	2.0	1.5	1.019	12.5
	1971	3	2.0	1.5	1.020	13.8
	Aver.	3	2.0	1.5	1.020	13.8
	1970	4	3.5	3.5	1.018	12.6
	Aver.	4	3.5	3.5	1.018	12.6
Apr.	1971	1	4.2	4.2	1.020	11.7
	Aver.	1	4.2	4.2	1.020	11.7
	1969	2	8.5	7.5	1.017	12.5
	1971	2	5.0	5.0	1.020	11.5
	Aver.	2	6.7	6.2	1.018	12.0
	1969	3	8.0	7.0	1.019	10.5
	1970	3	7.0	7.0	1.018	12.0
	1971	3	5.7	5.7	1.019	9.9
	Aver.	3	6.9	6.6	1.019	10.8
	1969	4	10.0	10.0	1.016	13.0
	1970	4	9.5	8.5	1.019	13.0
	1971	4	7.2	7.2	1.020	10.6
Apr.	Aver.	4	8.9	8.6	1.018	12.2
	1969	5	10.5	10.0	1.017	12.2
	1970	5	10.0	10.2	1.019	12.5
	1971	5	8.5	8.5	1.019	8.5
	Aver.	5	9.7	9.6	1.018	11.1
May	1969	1	10.5	10.5	1.018	11.5
	1970	1	12.0	11.0	1.019	13.0
	1971	1	9.0	9.0	1.019	8.7
	Aver.	1	10.5	10.2	1.019	11.1
	1969	2	13.0	12.0	1.018	12.0
	1970	2	13.0	12.0	1.019	13.0
	1971	2	11.5	12.0	1.019	8.2
	Aver.	2	12.5	12.0	1.019	11.1
	1969	3	13.0	12.5	1.018	9.9
	1970	3	13.5	13.0	1.019	12.0
	1971	3	13.0	13.0	1.019	9.0
	Aver.	3	13.2	12.8	1.019	10.3
	1969	4	16.2	14.5	1.017	9.6
	1970	4	13.7	14.0	1.019	11.5
	1971	4	13.5	14.0	1.019	8.7
	Aver.	4	14.5	14.2	1.018	9.9
June	1969	1	19.0	18.0	1.018	9.5
	1970	1	15.0	14.7	1.019	10.7
	1971	1	16.5	16.5	1.019	8.2
	Aver.	1	16.8	16.4	1.019	9.5
	1969	2	19.5	19.0	1.017	9.0
	1970	2	17.2	16.7	1.019	10.0
	1971	2	17.5	16.2	1.018	8.0
	Aver.	2	18.1	17.3	1.018	9.0
	1969	3	19.0	19.0	1.018	8.5
	1970	3	18.5	18.0	1.019	9.0

1/ Weekly averages.

Table 92 (cont.) Physical and Chemical Data: 1/Experimental Area, 1968-1971

Month	Year	Week	Temp. Cent. Top	Temp. Cent. Bottom	Salinity (Sp. Grav.)	Oxygen (ppm)
June	1971	3	17.5	18.0	1.019	7.6
	Aver.	3	18.3	18.3	1.019	8.4
	1969	4	18.0	17.0	1.018	9.9
	1970	4	17.6	16.4	1.019	9.0
	Aver.	4	17.8	16.7	1.018	9.4
July	1968	1	22.5	19.7	1.017	10.4
	1969	1	20.2	20.2	1.018	9.5
	1970	1	16.7	16.4	1.018	9.0
	Aver.	1	19.8	18.8	1.018	9.6
	1968	2	20.2	19.2	1.017	8.5
	1969	2	19.7	19.5	1.018	9.0
	1970	2	23.6	21.8	1.018	9.0
	Aver.	2	21.2	20.2	1.018	8.8
	1968	3	22.7	21.5	1.016	9.8
	1969	3	23.5	21.7	1.016	7.9
	1970	3	21.0	19.7	1.017	7.6
	Aver.	3	22.4	21.0	1.016	8.4
	1968	4	23.0	22.2	1.017	8.2
	1969	4	22.2	20.0	1.020	5.5
	1970	4	21.7	20.0	1.017	7.5
	Aver.	4	22.2	20.7	1.018	7.1
Aug.	1968	1	21.5	21.5	1.017	7.5
	1969	1	22.2	20.7	1.019	8.0
	1970	1	23.3	21.4	1.016	8.2
	Aver.	1	22.3	21.2	1.017	7.9
	1968	2	22.0	20.7	1.019	5.6
	1969	2	23.5	23.2	1.017	9.2
	1970	2	22.5	20.6	1.016	5.0
	Aver.	2	22.7	21.5	1.017	6.6
	1968	3	22.2	22.0	1.018	7.5
	1969	3	23.7	23.7	1.018	8.9
	1970	3	22.8	21.1	1.018	7.1
	Aver.	3	22.9	22.3	1.018	7.8
	1968	4	23.5	22.5	1.018	6.8
	1969	4	22.5	22.7	1.019	8.7
Aug.	1970	4	23.1	23.1	1.017	6.8
	Aver.	4	23.0	22.8	1.018	7.4
	1969	5	23.2	23.2	1.019	8.8
	1970	5	23.9	22.8	1.018	7.0
	Aver.	5	23.5	23.0	1.018	7.9
Oct.	1969	2	19.5	19.5	1.017	9.2
	1970	2	19.5	19.5	1.019	9.0
	Aver.	2	19.5	19.5	1.018	9.1
	1969	3	20.0	19.5	1.017	9.1
	1970	3	19.0	19.0	1.020	7.0
	Aver.	3	19.5	19.2	1.018	8.0
	1969	4	15.2	14.7	1.014	8.0
	1970	4	18.5	19.0	1.019	7.6
	Aver.	4	16.8	16.8	1.016	7.8
	1969	5	14.7	14.0	1.015	7.7
	1970	5	15.5	16.0	1.019	7.9
	Aver.	5	15.1	15.0	1.017	7.8
Nov.	1969	1	13.0	13.0	1.016	7.0
	1970	1	14.5	14.2	1.019	8.3
	Aver.	1	13.7	13.6	1.017	7.6
	1969	3	10.5	8.5	1.016	10.0
	Aver.	3	10.5	8.5	1.016	10.0
	1969	4	10.2	10.2	1.016	10.7
	1970	4	10.5	10.7	1.020	8.8
	Aver.	4	10.3	10.4	1.018	9.7
Dec.	1969	2	6.0	6.0	1.018	13.2
	Aver.	2	6.0	6.0	1.018	13.2
	1969	3	7.0	6.5	1.019	13.5
	1970	3	6.0	6.0	1.020	9.8
	Aver.	3	6.5	6.2	1.019	11.6
	1969	4	4.0	3.5	1.016	13.0
	Aver.	4	4.0	3.5	1.016	13.0
	1969	5	2.0	2.0	1.019	13.0
	Aver.	5	2.0	2.0	1.019	13.0

1/ Weekly averages.

Table 93 Physical and Chemical Data: 1/Control Area, 1968-1971

Month	Year	Week	Temp. Cent. Top	Temp. Cent. Bottom	Salinity (Sp. Grav.)	Oxygen (ppm)
Jan.	1971	1	1.5	2.0	1.020	12.5
	Aver.	1	1.5	2.0	1.020	12.5
	1971	2	1.0	1.0	1.020	12.4
	Aver.	2	1.0	1.0	1.020	12.4
	1971	3	-0.5	-0.5	1.020	13.0
	Aver.	3	-0.5	-0.5	1.020	13.0
Feb.	1970	1	0.5	0.5	1.018	13.0
	Aver.	1	0.5	0.5	1.018	13.0
	1970	4	0.0	0.5	1.018	13.0
	Aver.	4	0.0	0.5	1.018	13.0
Mar.	1970	1	2.0	2.0	1.018	13.5
	1971	1	1.5	2.0	1.020	13.7
	Aver.	1	1.7	2.0	1.019	13.6
	1970	2	1.5	1.5	1.019	12.0
	Aver.	2	1.5	1.5	1.019	12.0
	1971	3	2.0	2.0	1.020	13.4
	Aver.	3	2.0	2.0	1.020	13.4
	1970	4	3.5	3.5	1.019	13.0
	Aver.	4	3.5	3.5	1.019	13.0
Apr.	1971	1	3.5	3.7	1.020	12.0
	Aver.	1	3.5	3.7	1.020	12.0
	1969	2	10.5	10.0	1.019	12.8
	1971	2	5.0	5.0	1.020	12.0
	Aver.	2	7.7	7.5	1.019	12.4
	1969	3	7.5	8.5	1.019	11.0
	1970	3	6.5	6.5	1.019	12.5
	1971	3	5.2	5.5	1.019	9.6
	Aver.	3	6.4	6.8	1.019	11.0
	1969	4	10.0	9.5	1.017	12.5
	1970	4	8.5	8.5	1.019	13.0
	1971	4	7.0	6.5	1.019	9.9
Apr.	Aver.	4	8.5	8.2	1.018	11.8
	1969	5	11.5	11.0	1.018	12.0
	1970	5	9.7	10.0	1.019	12.2
	1971	5	8.5	8.0	1.020	8.5
	Aver.	5	9.9	9.7	1.019	10.9
May	1969	1	13.0	12.0	1.019	11.5
	1970	1	10.5	11.0	1.020	13.0
	1971	1	8.5	8.0	1.020	9.0
	Aver.	1	10.7	10.3	1.020	11.2
	1969	2	13.0	12.0	1.018	11.0
	1970	2	12.0	12.0	1.020	13.0
	1971	2	11.0	11.0	1.019	7.9
	Aver.	2	12.0	11.7	1.019	10.6
	1969	3	13.2	13.0	1.018	10.2
	1970	3	14.5	13.5	1.019	12.0
	1971	3	12.5	13.0	1.019	8.6
	Aver.	3	13.4	13.2	1.019	10.3
	1969	4	15.5	15.0	1.017	9.7
	1970	4	13.5	13.7	1.019	11.7
	1971	4	12.7	13.0	1.018	8.6
	Aver.	4	13.9	13.9	1.018	10.0
June	1969	1	20.0	17.5	1.017	9.0
	1970	1	15.0	15.0	1.019	10.7
	1971	1	17.0	15.5	1.018	8.4
	Aver.	1	17.3	16.0	1.018	9.4
	1969	2	19.5	18.5	1.017	8.5
	1970	2	17.0	16.7	1.019	10.0
	1971	2	16.7	17.0	1.019	8.4
	Aver.	2	17.7	17.4	1.018	9.0
	1969	3	19.5	19.0	1.016	8.0
	1970	3	18.5	18.0	1.019	9.0

1/ Weekly averages.

Table 93 (cont) Physical and Chemical Data: 1/Control Area, 1968-1971

Month	Year	Week	Temp. Cent. Top	Temp. Cent. Bottom	Salinity (Sp. Grav.)	Oxygen (ppm)
June	1971	3	17.0	17.0	1.019	7.5
	Aver.	3	18.3	18.0	1.018	8.2
	1969	4	18.5	17.5	1.018	9.7
	1970	4	17.6	16.4	1.018	9.0
	Aver.	4	18.0	16.9	1.018	9.3
July	1968	1	20.5	19.2	1.017	10.1
	1969	1	20.0	20.0	1.018	9.7
	1970	1	16.7	16.1	1.018	9.0
	Aver.	1	19.1	18.4	1.018	9.6
	1968	2	19.7	19.2	1.018	9.4
	1969	2	19.2	19.2	1.018	9.0
	1970	2	21.1	19.4	1.018	9.0
	Aver.	2	20.0	19.3	1.018	9.1
	1968	3	22.0	19.7	1.017	8.8
	1969	3	22.5	22.0	1.016	8.4
	1970	3	20.8	19.7	1.017	7.6
	Aver.	3	21.8	20.5	1.017	8.3
	1968	4	22.2	22.0	1.017	8.3
	1969	4	21.0	21.0	1.019	8.8
	1970	4	21.7	20.0	1.017	7.5
	Aver.	4	21.6	21.0	1.018	8.2
Aug.	1968	1	21.5	21.5	1.017	8.1
	1969	1	21.2	21.0	1.019	8.0
	1970	1	23.3	21.4	1.016	8.2
	Aver.	1	22.0	21.3	1.017	8.1
	1968	2	22.0	22.2	1.018	6.3
	1969	2	23.0	23.2	1.017	8.4
	1970	2	22.1	20.3	1.016	6.2
	Aver.	2	22.4	21.9	1.017	7.0
	1968	3	22.5	22.0	1.019	7.7
	1969	3	23.5	23.2	1.018	8.9
	1970	3	21.7	20.8	1.016	6.9
	Aver.	3	22.6	22.0	1.018	7.9
	1968	4	22.5	22.2	1.018	6.5
	1969	4	23.0	23.2	1.019	9.1
Aug.	1970	4	22.8	22.8	1.018	6.4
	Aver.	4	22.8	22.7	1.018	7.3
	1969	5	22.7	23.0	1.019	8.3
	1970	5	22.5	22.2	1.017	7.9
	Aver.	5	22.6	22.6	1.018	8.1
Oct.	1969	2	19.0	18.5	1.016	9.0
	1970	2	19.0	19.0	1.019	9.7
	Aver.	2	19.0	18.7	1.017	9.3
	1969	3	19.5	19.5	1.017	9.0
	1970	3	19.0	18.5	1.019	7.6
	Aver.	3	19.2	19.0	1.018	8.3
	1969	4	15.0	14.2	1.017	8.5
	1970	4	18.5	18.0	1.020	8.0
	Aver.	4	16.7	16.1	1.018	8.2
	1969	5	14.5	13.0	1.013	8.0
	1970	5	15.5	16.0	1.019	7.9
	Aver.	5	15.0	14.5	1.016	7.9
Nov.	1969	1	12.0	12.0	1.018	7.5
	1970	1	14.0	14.5	1.019	8.5
	Aver.	1	13.0	13.2	1.018	8.0
	1969	3	8.5	8.0	1.014	9.8
	Aver.	3	8.5	8.0	1.014	9.8
	1969	4	8.2	8.5	1.015	10.7
	1970	4	10.0	10.0	1.020	9.0
	Aver.	4	9.1	9.2	1.017	9.8
Dec.	1969	2	6.2	6.0	1.018	13.2
	Aver.	2	6.2	6.0	1.018	13.2
	1969	3	7.0	6.0	1.018	13.0
	1970	3	6.0	6.0	1.020	10.2
	Aver.	3	6.5	6.0	1.019	11.6
	1969	4	3.5	3.5	1.017	13.0
	Aver.	4	3.5	3.5	1.017	13.0
	1969	5	2.0	1.5	1.018	13.5
	Aver.	5	2.0	1.5	1.018	13.5

1/ Weekly averages.

Table 94 Total Plankton Concentration: 1/Experimental and Control Areas, 1968-1971

Year	Date Month	Week	Area Exp.	Area Cont.
1968	July	1	0.10	0.16
		2	0.43	0.21
		3	0.33	0.47
		4	0.63	0.63
	Aug.	1	0.76	1.54
		2	1.69	0.84
		3	0.55	1.24
		4	5.16	2.21
	Apr.	2	1.33	1.02
		3	1.91	2.29
		4	0.68	0.35
		5	0.97	0.88
	May	1	3.37	3.18
		2	1.42	13.00
		3	1.01	1.71
		4	0.41	1.14
	June	1	0.17	0.50
		2	0.59	0.65
		3	0.35	0.84
		4	0.86	0.98
	July	1	0.81	0.96
		2	0.61	0.78
		3	0.42	0.87
		4	0.83	0.77
1969	Aug.	1	0.75	1.69
		2	0.55	0.63
		3	1.43	0.74
		4	2.77	1.51
		5	0.74	0.85
	Oct.	2	6.12	2.44
		3	5.06	1.57
		4	3.41	0.91
		5	10.17	4.68
	Nov.	1	2.47	7.37
		3	0.10	0.21
		4	0.22	0.23
	Dec.	2	0.36	0.32
		3	0.56	0.40
		4	0.27	0.28
		5	0.90	1.04
1970	Feb.	1	2.37	3.33
		4	0.92	1.02
	Mar.	1	0.58	0.96
		2	0.60	1.20
		4	0.81	0.60
	Apr.	3	1.32	2.00
		4	0.44	0.53
		5	0.68	0.52
	May.	1	0.40	1.08
		2	1.41	2.05
		3	2.15	2.27
		4	2.71	2.46
	June	1	0.74	0.47
		2	0.21	0.27
		3	0.17	0.27
		4	1.93	1.18
	July	1	4.42	1.73
		2	0.84	1.00
		3	0.73	1.15
		4	1.46	0.86
	Aug.	1	2.68	2.11
		2	0.26	0.15
		3	0.08	0.06
		4	0.13	0.10
		5	0.45	0.78
	Oct.	2	1.88	1.14
		3	1.94	2.68
		4	0.62	1.31
		5	1.11	0.82
	Nov.	1	1.20	1.32
		4	3.48	2.49
	Dec.	3	0.98	0.96
1971	Jan.	1	0.88	1.43
		2	0.88	1.49
		3	8.24	4.97
	Mar.	1	14.26	13.43
		3	17.54	22.72
	Apr.	1	3.26	4.49
		2	2.32	2.73
		3	1.17	1.40
		4	1.66	0.86
		5	0.37	0.82
	May	1	0.48	0.95
		2	1.28	0.44
		3	0.61	0.95
		4	1.66	1.00
	June	1	0.34	0.71
		2	0.91	0.96
		3	1.30	1.33

1/ Weekly averages. Quantity of plankton, in milliliters, in each cubic meter of water.

Table 95 Abundance of Plankton: Experimental Area, Monthly Averages N.E. and N.W. Tows, 1968-1971

Date	Total2/ Phytoplankton	Total Zooplankton	Copepod Adult	Copepod Larvae	Cladocera	Barnacle Larvae	Gastropod Larvae	Lamellibranch Larvae	Polychaete Larvae
				Number per cubic meter					
1968									
July	133	5409	2293	2484	110	9	100	38	6
Aug.	4763	16905	9816	5805	22	67	236	801	39
1969									
Apr.	-	4894	3403	1091	260	106	0	0	0
May	-	7745	6201	1508	0	7	0	0	0
June	-	3996	3180	663	20	60	17	17	0
July	1273	9432	5388	2816	295	25	172	128	8
Aug.	5893	829	400	168	2	27	56	53	24
Sept.	-	-	-	-	-	-	-	-	-
Oct.	-	3391	3155	223	3	1	0	0	4
Nov.	-	4312	4100	187	1/	1/	0	0	21
Dec.	-	3127	2705	231	3	3	0	0	1
1970									
Jan.	-	-	-	-	-	-	-	-	-
Feb.	-	734	353	323	12	44	0	0	0
Mar.	-	1763	783	911	0	51	0	0	0
Apr.	-	2844	2308	314	0	179	0	0	0
May	-	5363	4469	496	11	126	0	0	5
June	-	13717	11187	2321	36	9	61	0	3
July	3066	28777	19294	554	2913	1	214	4	491
Aug.	554	7181	5829	1287	808	20	159	22	204
Sept.	-	-	-	-	-	-	-	-	-
Oct.	-	17552	9305	7378	12	840	0	0	1
Nov.	-	15838	13675	1717	1	442	0	0	0
Dec.	-	6804	5086	1515	92	110	0	0	0
1971									
Jan.	-	5802	3555	2111	14	0	0	0	0
Feb.	-	-	-	-	-	-	-	-	-
Mar.	-	100	100	0	0	0	0	0	0
Apr.	-	12038	5762	5927	31	207	0	0	17
May	-	7781	5169	2418	14	76	0	0	0
June	-	5672	3875	503	1211	0	0	0	3

1/ Less than 0.5.
2/ Counts made only in July and August.

Table 96 Abundance of Plankton: Control Area Monthly Average, N. E. Tow, 1968-1971

Date	Total 2/ Phytoplankton	Total Zooplankton	Copepod Adult	Copepod Larvae	Cladocera	Barnacle Larvae	Gastropod Larvae	Lamellibranch Larvae	Polychaete Larvae
				Number per cubic meter					
1968									
July	179	4020	1733	1732	140	11	257	0	13
Aug.	8353	14441	9388	4235	89	68	144	463	31
1969									
Apr.	-	9409	6116	2710	375	142	0	0	2
May	-	29667	27673	1945	1/	45	0	0	0
June	-	4025	3079	655	4	60	77	43	2
July	1458	16912	9090	6120	299	319	393	206	16
Aug.	5202	1853	1178	390	1	30	76	55	11
Sept.	-	-	-	-	-	-	-	-	-
Oct.	-	3065	2782	248	4	1/	0	0	6
Nov.	-	3949	3651	271	1	0	0	0	16
Dec.	-	2686	2345	200	4	0	0	0	1/
1970									
Jan.	-	-	-	-	-	-	-	-	-
Feb.	-	1215	734	409	7	43	0	0	7
Mar.	-	1236	655	947	2	34	0	0	0
Apr.	-	3623	2889	490	0	207	0	0	0
May	-	4890	4168	520	4	101	0	0	2
June	-	9880	7995	1693	65	10	50	0	7
July	1000	19572	12793	3483	2290	1	286	0	633
Aug.	370	8204	4851	1756	1172	30	145	38	236
Sept.	-	-	-	-	-	-	-	-	0
Oct.	-	16824	9912	6436	0	462	0	0	0
Nov.	-	14502	12323	1841	0	330	0	0	0
Dec.	-	10339	7304	3000	35	0	0	0	0
1971									
Jan.	-	7841	5300	2318	57	0	0	0	0
Feb.	-	-	-	-	-	-	-	-	-
Mar.	-	300	0	300	0	0	0	0	0
Apr.	-	17814	8609	8667	29	321	0	0	52
May	-	8798	6799	1861	6	30	0	0	0
June	-	6977	5380	513	1023	0	0	0	11

1/ Less than 0.5.
2/ Counts made only in July and August.

Table 97 Percentage of Copepods and Copepod Nauplii in Zooplankton: Experimental Area, Average of N.E. and N.W. Tows. 1968-1971

Date	Week	Percent of Copepods Adult	Nauplii	Total
1968				
July	1	31.9	59.4	91.3
	2	39.6	52.4	92.0
	3	25.5	66.0	91.5
	4	48.7	45.2	93.9
Aug.	1	45.1	50.9	96.0
	2	62.7	31.1	93.8
	3	62.4	34.7	97.1
	4	62.2	24.6	86.8
	5	-	-	-
1969				
April	1	-	-	-
	2	74.5	21.0	95.5
	3	74.4	14.3	88.7
	4	53.2	4.4	57.6
	5	57.1	40.2	97.3
May	1	73.6	26.3	99.9
	2	90.0	10.0	100.0
	3	81.7	18.1	99.8
	4	65.6	15.6	81.2
June	1	50.9	36.7	87.6
	2	74.5	17.8	92.3
	3	87.9	7.6	95.5
	4	80.3	17.2	97.5
July	1	51.6	37.0	88.6
	2	66.0	23.0	89.0
	3	44.0	36.6	80.6
	4	71.3	7.9	79.2
Aug.	1	42.5	18.6	61.1
	2	61.7	15.5	77.2
	3	51.0	14.9	65.9
	4	57.9	21.9	79.8
	5	48.9	29.2	78.1

Date	Week	Percent of Copepods Adult	Nauplii	Total
1969				
Sept.	1	-	-	-
	2	-	-	-
	3	-	-	-
	4	-	-	-
Oct.	1	-	-	-
	2	87.4	12.6	100.0
	3	96.7	2.7	99.4
	4	94.6	4.9	99.5
	5	92.6	7.0	99.6
Nov.	1	94.9	4.5	99.4
	2	-	-	-
	3	97.2	2.3	99.5
	4	93.7	5.9	99.6
Dec.	1	-	-	-
	2	81.5	15.2	96.7
	3	91.5	4.1	95.6
	4	92.0	3.7	95.7
	5	86.5	2.0	88.5
1970				
Jan.	1	-	-	-
	2	-	-	-
	3	-	-	-
	4	-	-	-
Feb.	1	45.2	53.9	99.1
	2	-	-	-
	3	-	-	-
	4	52.1	29.9	82.0
Mar.	1	44.0	53.6	97.6
	2	62.1	35.1	97.2
	3	-	-	-
	4	40.3	55.5	95.8

Table 97 (cont.) Percentage of Copepods and Copepod Nauplii in Zooplankton: Experimental Area, Average of N.E. and N.W. Tows. 1968-1971

Date	Week	Percent of Copepods Adult	Nauplii	Total	Date	Week	Percent of Copepods Adult	Nauplii	Total
1970									
Apr.	1	-	-	-	1970				
	2	-	-	-	Nov.	4	82.5	13.7	96.2
	3	76.4	14.9	91.3	Dec.	1	-	-	-
	4	82.3	10.7	93.0		2	-	-	-
	5	88.1	5.0	93.1		3	74.8	22.3	97.1
May	1	62.6	24.3	86.9		4	-	-	-
	2	74.1	13.6	87.7		5	-	-	-
	3	88.5	6.7	95.2	1971				
	4	85.7	7.8	93.5	Jan.	1	71.5	28.1	99.6
June	1	87.2	5.5	92.7		2	54.8	36.3	91.1
	2	79.8	4.3	84.1		3	57.5	42.5	100.0
	3	77.8	8.9	86.7		4	-	-	-
	4	81.4	17.6	99.0	Feb.	1	-	-	-
July	1	84.7	13.4	98.1		2	-	-	-
	2	60.0	20.4	80.4		3	-	-	-
	3	55.9	30.8	86.7		4	-	-	-
	4	38.9	24.8	63.7	Mar.	1 1/	0.0	0.0	0.0
Aug.	1	64.5	18.0	82.5		2	-	-	-
	2	80.5	9.8	90.3		3	100.0	0.0	100.0
	3	33.3	45.9	79.2		4	-	-	-
	4	4.7	39.5	44.2	Apr.	1	32.5	66.5	99.0
	5	73.7	16.3	90.0		2	38.9	59.0	97.9
Sept.	1	-	-	-		3	78.0	14.4	92.4
	2	-	-	-		4	81.5	12.3	93.8
	3	-	-	-		5	70.9	24.2	95.1
	4	-	-	-	May	1	70.9	26.4	97.3
Oct.	1	-	-	-		2	35.3	62.1	97.4
	2	19.9	70.9	90.8		3	52.5	43.6	96.1
	3	69.9	27.8	97.7		4	94.9	3.5	98.4
	4	74.6	24.0	98.6	June	1	88.3	10.2	98.5
	5	89.1	8.2	97.3		2	44.8	11.8	56.6
Nov.	1	94.0	5.3	99.3		3	79.4	6.6	86.0
	2	-	-	-					
	3	-	-	-					

1/ No zooplankton taken.

Table 98 Percentage of Copepods and Copepod Nauplii in Zooplankton: Control Area, N.E. Tow, 1968-1971

Date	Week	Percent of Copepods Adult	Nauplii	Total
1968				
July	1	26.6	63.7	90.3
	2	43.5	41.3	84.8
	3	37.4	54.0	91.4
	4	49.1	34.3	83.4
Aug.	1	71.4	25.5	96.9
	2	57.8	34.3	92.1
	3	71.4	25.6	97.0
	4	57.6	32.1	89.7
	5	-	-	-
1969				
Apr.	1	-	-	-
	2	75.8	15.9	91.7
	3	75.1	13.2	88.3
	4	40.4	2.0	42.0
	5	57.3	42.2	99.5
May	1	77.1	22.9	100.0
	2	95.6	4.3	99.9
	3	88.2	11.6	99.8
	4	45.2	43.5	88.7
June	1	90.5	6.0	96.5
	2	68.9	16.2	85.1
	3	93.8	5.0	98.8
	4	58.0	29.7	87.7
July	1	51.7	41.4	93.1
	2	55.3	33.6	88.9
	3	57.3	30.9	88.2
	4	45.7	18.6	64.3
Aug.	1	59.2	10.6	69.8
	2	59.4	13.0	72.4
	3	58.4	11.7	70.1
	4	50.8	24.5	75.3
	5	67.6	26.9	94.5
Sept.	1	-	-	-
	2	-	-	-
	3	-	-	-
	4	-	-	-
Oct.	1	-	-	-
	2	84.6	15.1	99.7
	3	84.4	10.8	95.2
	4	96.6	3.0	99.6
	5	93.6	5.8	99.4
Nov.	1	91.4	8.2	99.6
	2	-	-	-
	3	97.1	1.7	98.8
	4	91.5	7.5	99.0
Dec.	1	-	-	-
	2	85.0	11.5	96.5
	3	87.9	7.8	95.7
	4	89.4	5.2	94.6
	5	88.4	4.4	92.8
1970				
Jan.	1	-	-	-
	2	-	-	-
	3	-	-	-
	4	-	-	-
Feb.	1	62.4	34.4	96.8
	2	-	-	-
	3	-	-	-
	4	55.0	31.7	86.7
Mar.	1	68.2	26.5	94.7
	2	48.8	48.1	96.9
	3	-	-	-
	4	34.2	63.4	97.6

Table 98 (cont.) Percentage of Copepods and Copepod Nauplii in Zooplankton: Control Area, N.E. Tow, 1968-1971

Date	Week	Percent of Copepods Adult	Nauplii	Total
1970				
Apr.	1	-	-	-
	2	-	-	-
	3	77.4	15.9	93.3
	4	85.0	9.4	94.4
	5	87.1	3.8	90.9
May	1	46.2	41.5	87.7
	2	92.5	5.5	98.0
	3	83.9	11.5	95.4
	4	87.2	8.7	95.9
June	1	82.1	6.3	88.4
	2	83.8	9.8	93.6
	3	84.6	5.5	90.1
	4	80.7	18.2	98.9
July	1	81.7	15.4	97.1
	2	55.0	18.1	73.1
	3	68.3	19.3	87.6
	4	49.5	19.3	68.8
Aug.	1	59.7	20.1	79.8
	2	47.0	27.9	74.9
	3	23.1	47.3	70.4
	4	13.1	41.4	54.5
	5	28.4	52.7	81.1
Sept.	1	-	-	-
	2	-	-	-
	3	-	-	-
	4	-	-	-
Oct.	1	-	-	-
	2	31.8	63.1	94.9
	3	58.5	39.1	97.6
	4	77.6	20.0	97.6
	5	93.7	5.6	99.3
Nov.	1	85.9	12.1	98.0
	2	-	-	-
	3	-	-	-
	4	84.4	13.1	97.5
Dec.	1	-	-	-
	2	-	-	-
	3	70.6	29.0	99.6
	4	-	-	-
	5	-	-	-
1971				
Jan.	1	74.7	22.6	97.3
	2	61.2	34.4	95.6
	3	66.7	33.3	100.0
	4	-	-	-
Feb.	1	-	-	-
	2	-	-	-
	3	-	-	-
	4	-	-	-
Mar.	1	0.0	100.0	100.0
	2	-	-	-
	3 1/	0.0	0.0	0.0
	4	-	-	-
Apr.	1	36.7	61.9	98.6
	2	62.0	36.3	98.3
	3	69.3	23.4	92.7
	4	71.5	12.7	84.2
	5	77.6	15.5	93.1
May	1	82.8	16.4	99.2
	2	66.9	31.2	98.1
	3	59.3	38.5	97.8
	4	91.9	5.9	97.8
June	1	92.4	6.0	98.4
	2	72.4	9.1	81.5
	3	72.9	6.0	78.9

1/ No zooplankton taken.

Table 99 Abundance of Fish Eggs and Larvae: Monthly Averages, N. E. and N. W. Tows in Experimental Area and N. E. Tows in Control Area, 1969-1971

Date	Number of Fish Eggs1/ Experimental Area	Number of Fish Eggs1/ Control Area	Number of Fish Larvae1/ Experimental Area	Number of Fish Larvae1/ Control Area
1969				
April	1346	798	4511	1462
May	590	1137	0	0
June	1758	1410	46	54
July	4817	7558	728	664
Aug.	1212	2629	0	27
Sept.	-	-	-	-
Oct.	0	0	0	0
Nov.	10	0	242	2461
Dec.	0	0	5820	2118
1970				
Jan.	-	-	-	-
Feb.	25	0	97	485
Mar.	0	0	33	0
April	0	0	43	49
May	47227	37696	1765	1554
June	4661	5398	1110	2000
July	12162	10299	0	0
Aug.	3080	4334	0	0
Sept.	-	-	-	-
Oct.	276	0	0	0
Nov.	0	0	48	0
Dec.	0	0	874	462
1971				
Jan.	0	0	24	157
Feb.	-	-	-	-
Mar.	0	0	0	0
April	203	714	67	2
May	104334	49321	312	409
June	24749	40436	3322	1832

1/ Number per 1000 cubic meters of water

Table 100 Abundance1/ of Bottom Organisms: Experimental Area, Monthly Averages 1968-1971

Date	Amphipods		Isopods		Polychaetes		Lamellibranchs		Other		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1968												
July	53	72.6	15	20.5	4	5.5	1	1.4	0	0.0	73	100.0
Aug.	84	79.2	14	13.2	5	4.7	3	2.8	0	0.0	106	99.9
Sept.	90	82.6	10	9.2	4	3.7	4	3.7	1	0.9	109	100.1
1969												
Jan.	-	-	-	-	-	-	-	-	-	-	-	-
Feb.	-	-	-	-	-	-	-	-	-	-	-	-
Mar.	-	-	-	-	-	-	-	-	-	-	-	-
Apr.	5	35.7	3	21.4	2	14.3	1	7.1	3	21.4	14	99.9
May	4	28.6	2	14.3	2	14.3	0	0.0	6	42.9	14	100.1
June	3	33.3	0	0.0	3	33.3	1	11.1	2	22.2	9	99.9
July	20	74.1	1	3.7	3	11.1	1	3.7	2	7.4	27	100.0
Aug.	42	72.4	6	10.3	6	10.3	1	1.7	3	5.2	58	99.9
Sept.	104	78.2	2	1.5	3	2.3	20	15.0	4	3.0	133	100.0
Oct.	84	61.3	0	0.0	4	2.9	45	32.8	4	2.9	137	99.9
Nov.	62	63.9	1	1.0	2	2.1	28	28.9	4	4.1	97	100.0
Dec.	29	50.9	0	0.0	2	3.5	23	40.4	3	5.3	57	100.1
1970												
Jan.	-	-	-	-	-	-	-	-	-	-	-	-

1/ Bottom area sampled in each grab of the bottom sampler was 16.5 by 10.0 cm. (165 sq. cm.) to a depth of 10.0 cm. The bottom samples obtained were approximately 1 pint in volume. Data are given in terms of the monthly average number of organisms per 165 sq. cm. (1 pint) of bottom computed from weekly averages.

Table 100 (cont.) Abundance1/ of Bottom Organisms: Experimental Area, Monthly Averages 1968-1971

Date	Amphipods		Isopods		Polychaetes		Lamellibranchs		Other		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1970												
Feb.	3	7.9	0	0.0	0	0.0	35	92.1	0	0.0	38	100.0
Mar.	4	19.0	0	0.0	5	23.8	10	47.6	2	9.5	21	99.9
Apr.	5	23.8	0	0.0	9	42.9	5	23.8	2	9.5	21	100.0
May	7	36.8	0	0.0	1	5.3	9	47.4	2	10.5	19	100.0
June	8	29.6	0	0.0	7	25.9	10	37.0	2	7.4	27	99.9
July	64	66.7	0	0.0	12	12.5	20	20.8	0	0.0	96	100.0
Aug.	67	81.7	2	2.4	3	3.7	9	11.0	1	1.2	82	100.0
Sept.	43	82.7	1	1.9	1	1.9	6	11.5	1	1.9	52	99.9
Oct.	27	75.0	1	2.8	0	0.0	6	16.7	2	5.6	36	100.1
Nov.	12	70.6	1	5.9	0	0.0	3	17.6	1	5.9	17	100.0
Dec.	8	80.0	2	20.0	0	0.0	0	0.0	0	0.0	10	100.0
1971												
Jan.	11	64.7	3	17.6	0	0.0	2	11.8	1	5.9	17	100.0
Feb.	-	-	-	-	-	-	-	-	-	-	-	-
Mar.	10	55.6	5	27.8	0	0.0	3	16.7	0	0.0	18	100.1
Apr.	20	74.1	4	14.8	0	0.0	2	7.4	1	3.7	27	100.0
May	21	80.8	2	7.7	0	0.0	2	7.7	1	3.8	26	100.0
June	13	50.0	8	30.8	0	0.0	2	7.7	3	11.5	26	100.0

1/ Bottom area sampled in each grab of the bottom sampler was 16.5 by 10.0 cm. (165 sq. cm.) to a depth of 10.0 cm. The bottom samples obtained were approximately 1 pint in volume. Data are given in terms of the monthly average number of organisms per 165 sq. cm. (1 pint) of bottom computed from weekly averages.

Table 101 Abundance1/ of Bottom Organisms: Control Area, Monthly Averages 1968-1971

Date	Amphipods		Isopods		Polychaetes		Lamellibranchs		Other		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1968												
July	19	54.3	11	31.4	5	14.3	0	0.0	0	0.0	35	100.0
Aug.	3	15.8	10	52.6	4	21.1	2	10.5	0	0.0	19	100.0
Sept.	14	24.1	14	24.1	25	43.1	4	6.9	1	1.7	58	99.9
1969												
Jan.	-	-	-	-	-	-	-	-	-	-	-	-
Feb.	-	-	-	-	-	-	-	-	-	-	-	-
Mar.	-	-	-	-	-	-	-	-	-	-	-	-
Apr.	10	47.6	4	19.0	1	4.8	3	14.3	3	14.3	21	100.0
May	7	29.2	1	4.2	5	20.8	3	12.5	8	33.3	24	100.0
June	5	27.8	3	16.7	5	27.8	4	22.2	1	5.6	18	100.1
July	18	69.2	2	7.7	2	7.7	1	3.8	3	11.5	26	99.9
Aug.	12	44.4	10	37.0	2	7.4	2	7.4	1	3.7	27	99.9
Sept.	30	35.7	21	25.0	10	11.9	11	13.1	12	14.3	84	100.0
Oct.	44	46.8	7	7.4	1	1.1	40	42.6	2	2.1	94	100.0
Nov.	33	44.6	5	6.8	2	2.7	33	44.6	1	1.4	74	100.1
Dec.	33	57.9	3	5.3	2	3.5	16	28.1	3	5.3	57	100.1
1970												
Jan.	-	-	-	-	-	-	-	-	-	-	-	-

1/ Bottom area sampled in each grab of the bottom sampler was 16.5 by 10.0 cm. (165 sq. cm.) to a depth of 10.0 cm. The bottom samples obtained were approximately 1 pint in volume. Data are given in terms of the monthly average number of organisms per 165 sq. cm. (1 pint) of bottom computed from weekly averages.

Table 101 (cont.) Abundance of Bottom Organisms: Control Area, Monthly Averages 1968-1971

Date	Amphipods		Isopods		Polychaetes		Lamellibranchs		Other		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1970												
Feb.	6	21.4	7	25.0	6	21.4	9	32.1	0	0.0	28	99.9
Mar.	6	25.0	6	25.0	4	16.7	8	33.3	0	0.0	24	100.0
Apr.	10	47.6	4	19.0	2	9.5	4	19.0	1	4.8	21	99.9
May	11	36.7	2	6.7	11	36.7	4	13.3	2	6.7	30	100.1
June	20	50.0	2	5.0	10	25.0	5	12.5	3	7.5	40	100.0
July	57	74.0	3	3.9	8	10.4	9	11.7	0	0.0	77	100.0
Aug.	20	80.0	1	4.0	1	4.0	3	12.0	0	0.0	25	100.0
Sept.	45	67.2	12	17.9	6	9.0	3	4.5	1	1.5	67	100.1
Oct.	14	53.8	5	19.2	3	11.5	4	15.4	0	0.0	26	99.9
Nov.	19	59.4	11	34.4	0	0.0	2	6.2	0	0.0	32	100.0
Dec.	8	80.0	2	20.0	0	0.0	0	0.0	0	0.0	10	100.0
1971												
Jan.	12	66.7	3	16.7	0	0.0	2	11.1	1	5.6	18	100.1
Feb.	-	-	-	-	-	-	-	-	-	-	-	-
Mar.	16	64.0	5	20.0	0	0.0	3	12.0	1	4.0	25	100.0
Apr.	11	39.3	15	53.6	0	0.0	1	3.6	1	3.6	28	100.1
May	17	50.0	13	38.2	0	0.0	1	2.9	3	8.8	34	99.9
June	12	36.4	17	51.5	0	0.0	1	3.0	3	9.1	33	100.0

1/ Bottom area sampled in each grab of the bottom sampler was 16.5 by 10.0 cm. (165 sq. cm.) to a depth of 10.0 cm. The bottom samples obtained were approximately 1 pint in volume. Data are given in terms of the monthly average number of organisms per 165 sq. cm. (1 pint) of bottom computed from weekly averages.

Table 102 Seasonal Relative Abundance of Bottom Organisms Sampled in the Period 1968-1971
1/Experimental Area

Date		Percent Amphipods	Isopods	Polychaetes	Lamellibranchs	Other	Total No.2/
Jan.	1971	64.7	17.6	0.0	11.8	5.9	17
	Aver.	64.7	17.6	0.0	11.8	5.9	17
Feb.	1970	7.9	0.0	0.0	92.1	0.0	38
	Aver.	7.9	0.0	0.0	92.1	0.0	38
Mar.	1970	19.0	0.0	23.8	47.6	9.5	21
	1971	55.6	27.8	0.0	16.7	0.0	18
	Aver.	37.3	13.9	11.9	32.1	4.7	19
Apr.	1969	35.7	21.4	14.3	7.1	21.4	14
	1970	23.8	0.0	42.9	23.8	9.5	21
	1971	74.1	14.8	0.0	7.4	3.7	27
	Aver.	44.5	12.1	19.1	12.8	11.5	21
May	1969	28.6	14.3	14.3	0.0	42.9	14
	1970	36.8	0.0	5.3	47.4	10.5	19
	1971	80.8	7.7	0.0	7.7	3.8	26
	Aver.	48.7	7.3	6.5	18.4	19.1	20
June	1969	33.3	0.0	33.3	11.1	22.2	9
	1970	29.6	0.0	25.9	37.0	7.4	27
	1971	50.0	30.8	0.0	7.7	11.5	26
	Aver.	37.6	10.3	19.7	18.6	13.7	21
July	1968	72.6	20.5	5.5	1.4	0.0	73

1/ Computed from weekly averages.
2/ Number per 165 sq. cm. (depth 10cm.), or approximately 1 pint, of bottom.

Table 102 (cont.) Seasonal Relative Abundance of Bottom Organisms Sampled in the Period 1968-1971 1/Experimental Area

Date		Percent Amphipods	Isopods	Polychaetes	Lamellibranchs	Other	Total No.2/
July	1969	74.1	3.7	11.1	3.7	7.4	27
	1970	66.7	0.0	12.5	20.8	0.0	96
	Aver.	71.1	8.1	9.7	8.6	2.5	65
Aug.	1968	79.2	13.2	4.7	2.8	0.0	10[illegible]
	1969	72.4	10.3	10.3	1.7	5.2	58
	1970	81.7	2.4	3.7	11.0	1.2	82
	Aver.	77.8	8.6	6.2	5.2	2.1	82
Sept.	1968	82.6	9.2	3.7	3.7	0.9	109
	1969	78.2	1.5	2.3	15.0	3.0	133
	1970	82.7	1.9	1.9	11.5	1.9	52
	Aver.	81.2	4.2	2.6	10.1	1.9	98
Oct.	1969	61.3	0.0	2.9	32.8	2.9	137
	1970	75.0	2.8	0.0	16.7	5.6	36
	Aver.	68.1	1.4	1.4	24.7	4.2	86
Nov.	1969	64.6	0.0	2.1	29.2	4.2	96
	1970	70.6	5.9	0.0	17.6	5.9	17
	Aver.	67.6	2.9	1.0	23.4	5.0	56
Dec.	1969	50.9	0.0	3.5	40.4	5.3	57
	1970	80.0	20.0	0.0	0.0	0.0	10
	Aver.	65.4	10.0	1.7	20.2	2.6	33

1/ Computed from weekly averages.
2/ Number per 165 sq. cm. (depth 10cm.), or approximately 1 pint, of bottom.

Table 103 Seasonal Relative Abundance of Bottom Organisms Sampled in the Period 1968-1971
1/Control Area

Date		Percent Amphipods	Isopods	Polychaetes	Lamellibranchs	Other	Total No.2/
Jan.	1971	66.7	16.7	0.0	11.1	5.6	18
	Aver.	66.7	16.7	0.0	11.1	5.6	18
Feb.	1970	21.4	25.0	21.4	32.1	0.0	28
	Aver.	21.4	25.0	21.4	32.1	0.0	28
Mar.	1970	25.0	25.0	16.7	33.3	0.0	24
	1971	64.0	20.0	0.0	12.0	4.0	25
	Aver.	44.5	22.5	8.3	22.6	2.0	24
Apr.	1969	47.6	19.0	4.8	14.3	14.3	21
	1970	47.6	19.0	9.5	19.0	4.8	21
	1971	39.3	53.6	0.0	3.6	3.6	28
	Aver.	44.8	30.5	4.8	12.3	7.6	23
May	1969	29.2	4.2	20.8	12.5	33.3	24
	1970	36.7	6.7	36.7	13.3	6.7	30
	1971	50.0	38.2	0.0	2.9	8.8	34
	Aver.	38.6	16.4	19.2	9.6	16.3	29
June	1969	27.8	16.7	27.8	22.2	5.6	18
	1970	50.0	5.0	25.0	12.5	7.5	40
	1971	36.4	51.5	0.0	3.0	9.1	33
	Aver.	38.1	24.4	17.6	12.6	7.4	30
July	1968	54.3	31.4	14.3	0.0	0.0	35

1/ Computed from weekly averages.
2/ Number per 165 sq. cm. (depth 10cm.), or approximately 1 pint, of bottom.

Table 103(cont.) Seasonal Relative Abundance of Bottom Organisms Sampled in the Period 1968-1971 1/Control Area

Date		Percent Amphipods	Isopods	Polychaetes	Lamellibranchs	Other	Total No. 2/
July	1969	69.2	7.7	7.7	3.8	11.5	26
	1970	74.0	3.9	10.4	11.7	0.0	77
	Aver.	65.8	14.3	10.8	5.2	3.8	46
Aug.	1968	15.8	52.6	21.1	10.5	0.0	19
	1969	44.4	37.0	7.4	7.4	3.7	27
	1970	80.0	4.0	4.0	12.0	0.0	25
	Aver.	46.7	31.2	10.8	10.0	1.2	24
Sept.	1968	24.1	24.1	43.1	6.9	1.7	58
	1969	35.7	25.0	11.9	13.1	14.3	84
	1970	67.2	17.9	9.0	4.5	1.5	67
	Aver.	42.3	22.3	21.3	8.2	5.8	70
Oct.	1969	46.8	7.4	1.1	42.6	2.1	94
	1970	53.8	19.2	11.5	15.4	0.0	26
	Aver.	50.3	13.3	6.3	29.0	1.0	60
Nov.	1969	44.6	6.8	2.7	44.6	1.4	74
	1970	59.4	34.4	0.0	6.2	0.0	32
	Aver.	52.0	20.6	1.3	25.4	0.7	53
Dec.	1969	57.9	5.3	3.5	28.1	5.3	57
	1970	80.0	20.0	0.0	0.0	0.0	10
	Aver.	68.9	12.6	1.7	14.0	2.6	33

1/ Computed from weekly averages.
2/ Number per 165 sq. cm. (depth 10cm.), or approximately 1 pint, of bottom.

Table 104 Abundance1/ of Amphipods: Experimental Area, 1968-1971

	Type																			
	A		B		C		D		E		F		G		H		I		Total	
Date	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1968																				
July	5	9.4	0	0.0	0	0.0	34	64.2	11	20.8	0	0.0	0	0.0	3	5.7	0	0.0	53	100.1
Aug.	4	4.8	0	0.0	1	1.2	59	70.2	15	17.9	2	2.4	0	0.0	3	3.6	0	0.0	84	100.1
Sept.	3	3.4	0	0.0	0	0.0	68	75.6	12	13.3	5	5.6	0	0.0	2	2.2	0	0.0	90	100.1
1969																				
Jan.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr.	5	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	5	100.0
May	3	75.0	1	25.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4	100.0
June	3	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	100.0
July	2	10.0	0	0.0	1	5.0	15	75.0	1	5.0	0	0.0	0	0.0	1	5.0	0	0.0	20	100.0
Aug.	1	2.4	0	0.0	1	2.4	38	90.4	1	2.4	1	2.4	0	0.0	0	0.0	0	0.0	42	100.0
Sept.	3	2.9	0	0.0	0	0.0	91	87.5	3	2.9	1	1.0	1	1.0	5	4.8	0	0.0	104	100.1
Oct.	0	0.0	0	0.0	0	0.0	84	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	84	100.0
Nov.	0	0.0	0	0.0	0	0.0	62	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	62	100.0
Dec.	0	0.0	0	0.0	0	0.0	29	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	29	100.0
1970																				
Jan.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1/ Number per 165 sq. cm. (depth 10cm.), or approximately 1 pint, of bottom. Computed from weekly averages.

Table 104(cont.) Abundance1/ of Amphipods: Experimental Area, 1968-1971

Date	Type A No.	A %	B No.	B %	C No.	C %	D No.	D %	E No.	E %	F No.	F %	G No.	G %	H No.	H %	I No.	I %	Total No.	Total %
1970																				
Feb.	1	33.3	0	0.0	0	0.0	2	66.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	100.0
Mar	1	25.0	0	0.0	0	0.0	3	75.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4	100.0
Apr.	2	40.0	1	20.0	0	0.0	2	40.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	5	100.0
May	1	14.3	2	28.6	2	28.6	2	28.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	7	100.1
June	3	37.5	0	0.0	0	0.0	4	50.0	1	12.5	0	0.0	0	0.0	0	0.0	0	0.0	8	100.0
July	3	4.7	0	0.0	3	4.7	36	56.3	21	32.8	1	1.6	0	0.0	0	0.0	0	0.0	64	100.1
Aug.	5	7.5	2	3.0	1	1.5	48	71.6	8	11.9	3	4.5	0	0.0	0	0.0	0	0.0	67	100.0
Sept.	3	7.0	1	2.3	1	2.3	34	79.1	2	4.7	2	4.7	0	0.0	0	0.0	0	0.0	43	100.1
Oct.	4	14.8	0	0.0	1	3.7	22	81.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	27	100.0
Nov.	4	33.3	1	8.3	1	8.3	6	50.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	12	99.9
Dec.	5	62.5	0	0.0	0	0.0	3	37.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	8	100.0
1971																				
Jan.	6	54.5	0	0.0	0	0.0	4	36.4	0	0.0	1	9.1	0	0.0	0	0.0	0	0.0	11	100.0
Feb.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar.	5	50.0	0	0.0	1	10.0	4	40.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	10	100.0
Apr.	6	30.0	0	0.0	1	5.0	11	55.0	0	0.0	2	10.0	0	0.0	0	0.0	0	0.0	20	100.0
May	8	38.1	0	0.0	0	0.0	11	52.4	0	0.0	2	9.5	0	0.0	0	0.0	0	0.0	21	100.0
June	4	30.8	0	0.0	1	7.7	6	46.2	0	0.0	2	15.4	0	0.0	0	0.0	0	0.0	13	100.1

1/ Number per 165 sq. cm. (depth 10cm.), or approximately 1 pint, of bottom. Computed from weekly averages.

Table 105 Abundance1/ of Amphipods: Control Area, 1968-1971

	Type																			
	A		B		C		D		E		F		G		H		I		Total	
Date	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1968																				
July	13	68.4	0	0.0	0	0.0	3	15.8	3	15.8	0	0.0	0	0.0	0	0.0	0	0.0	19	100.0
Aug.	2	66.7	0	0.0	0	0.0	1	33.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	100.0
Sept.	5	35.7	0	0.0	0	0.0	2	14.3	1	7.1	6	42.9	0	0.0	0	0.0	0	0.0	14	100.0
1969																				
Jan.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr.	10	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	10	100.0
May	7	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	7	100.0
June	5	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	5	100.0
July	15	83.3	0	0.0	1	5.6	1	5.6	0	0.0	0	0.0	0	0.0	1	5.6	0	0.0	18	100.1
Aug.	9	75.0	1	8.3	0	0.0	1	8.3	0	0.0	0	0.0	0	0.0	0	0.0	1	8.3	12	99.9
Sept.	16	53.3	1	3.3	0	0.0	1	3.3	0	0.0	3	10.0	0	0.0	9	30.0	0	0.0	30	99.9
Oct.	31	70.5	0	0.0	0	0.0	13	29.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	44	100.0
Nov.	5	15.2	0	0.0	0	0.0	28	84.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	33	100.0
Dec.	3	9.1	0	0.0	0	0.0	30	90.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	33	100.0
1970																				
Jan.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1/ Number per 165 sq. cm. (depth 10cm.), or approximately 1 pint, of bottom. Computed from weekly averages.

Table 105 (cont.) Abundance1/ of Amphipods: Control Area, 1968-1971

	Type																	
	A		B		C		D		E		F		G		H		I		Total	
Date	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1970																				
Feb.	6	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	6	100.0
Mar.	6	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	6	100.0
Apr.	6	60.0	0	0.0	2	20.0	2	20.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	10	100.0
May	8	72.7	0	0.0	0	0.0	3	27.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	11	100.0
June	8	40.0	1	5.0	1	5.0	10	50.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	20	100.0
July	7	12.3	1	1.8	4	7.0	37	64.9	8	14.0	0	0.0	0	0.0	0	0.0	0	0.0	57	100.0
Aug.	8	40.0	0	0.0	1	5.0	10	50.0	1	5.0	0	0.0	0	0.0	0	0.0	0	0.0	20	100.0
Sept.	8	17.8	2	4.4	0	0.0	31	68.9	3	6.7	0	0.0	1	2.2	0	0.0	0	0.0	45	100.0
Oct.	10	71.4	1	7.1	3	21.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	14	99.9
Nov.	8	42.1	3	15.8	0	0.0	8	42.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	19	100.0
Dec.	5	62.5	0	0.0	0	0.0	3	37.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	8	100.0
1971																				
Jan.	6	50.0	0	0.0	1	8.3	5	41.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	12	100.0
Feb.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar.	10	62.5	0	0.0	0	0.0	6	37.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	16	100.0
Apr.	7	63.6	0	0.0	1	9.1	3	27.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	11	100.0
May	12	70.6	0	0.0	0	0.0	5	29.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	17	100.0
June	6	50.0	0	0.0	1	8.3	5	41.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	12	100.0

1/ Number per 165 sq. cm. (depth 10cm.), or approximately 1 pint, of bottom. Computed from weekly averages.

Table 106 Seasonal Relative Abundance of Amphipods Sampled in the Period 1968-1971: 1/Experimental Area

Date		Type A	B	C	D	E	F	G	H	I	Total No. 2/
Jan.	1971	54.5	-	-	36.4	-	9.1	-	-	-	11
	Aver.	54.5	-	-	36.4	-	9.1	-	-	-	11
Feb.	1970	33.3	-	-	66.7	-	-	-	-	-	3
	Aver.	33.3	-	-	66.7	-	-	-	-	-	3
Mar.	1970	25.0	-	-	75.0	-	-	-	-	-	4
	1971	50.0	-	10.0	40.0	-	-	-	-	-	10
	Aver.	37.5	-	5.0	57.5	-	-	-	-	-	7
Apr.	1969	100.0	-	-	-	-	-	-	-	-	5
	1970	40.0	20.0	-	40.0	-	-	-	-	-	5
	1971	30.0	-	5.0	55.0	-	10.0	-	-	-	20
	Aver.	56.7	6.7	1.7	31.7	-	3.3	-	-	-	10
May	1969	75.0	25.0	-	-	-	-	-	-	-	4
	1970	14.3	28.6	28.6	28.6	-	-	-	-	-	7
	1971	38.1	-	-	52.4	-	9.5	-	-	-	21
	Aver.	42.5	17.9	9.5	27.0	-	3.2	-	-	-	7
June	1969	100.0	-	-	-	-	-	-	-	-	3
	1970	37.5	-	-	50.0	12.5	-	-	-	-	8
	1971	30.8	-	7.7	46.2	-	15.4	-	-	-	13
	Aver.	56.1	-	2.6	32.1	4.2	5.1	-	-	-	8
July	1968	9.4	-	-	64.2	20.8	-	-	5.7	-	53

1/ Computed from weekly averages.
2/ Number per 165 sq. cm. (depth 10cm.), or approximately 1 pint, of bottom.

Table 106 (cont.) Seasonal Relative Abundance of Amphipods Sampled in the Period 1968-1971: 1/Experimental Area

Date		Type A	B	C	D	E	F	G	H	I	Total No. 2/
July	1969	10.0	-	5.0	75.0	5.0	-	-	5.0	-	20
	1970	4.7	-	4.7	56.3	32.8	1.6	-	-	-	64
	Aver.	8.0	-	3.2	65.2	19.5	0.5	-	3.6	-	46
Aug.	1968	4.8	-	1.2	70.2	17.9	2.4	-	3.6	-	84
	1969	2.4	-	2.4	90.4	2.4	2.4	-	-	-	42
	1970	7.5	3.0	1.5	71.6	11.9	4.5	-	-	-	67
	Aver.	4.9	1.0	1.7	77.4	10.7	3.1	-	1.2	-	64
Sept.	1968	3.4	-	-	75.6	13.3	5.6	-	2.2	-	90
	1969	2.9	-	-	87.5	2.9	1.0	1.0	4.8	-	104
	1970	7.0	2.3	2.3	79.1	4.7	4.7	-	-	-	43
	Aver.	4.4	0.8	0.8	80.7	6.6	3.8	0.3	2.3	-	79
Oct.	1969	-	-	-	100.0	-	-	-	-	-	84
	1970	14.8	-	3.7	81.5	-	-	-	-	-	27
	Aver.	7.4	-	1.8	90.7	-	-	-	-	-	55
Nov.	1969	-	-	-	100.0	-	-	-	-	-	62
	1970	33.3	8.3	8.3	50.0	-	-	-	-	-	12
	Aver.	16.6	4.1	4.1	75.0	-	-	-	-	-	37
Dec.	1969	-	-	-	100.0	-	-	-	-	-	29
	1970	62.5	-	-	37.5	-	-	-	-	-	8
	Aver.	31.2	-	-	68.7	-	-	-	-	-	18

1/ Computed from weekly averages.
2/ Number per 165 sq. cm. (depth 10cm.), or approximately 1 pint, of bottom.

Table 107 Seasonal Relative Abundance of Amphipods Sampled in the Period 1968-1971: 1/Control Area

Date		Type A	B	C	D	E	F	G	H	I	Total No.2/
Jan.	1971	50.0	-	8.3	37.5	-	-	-	-	-	16
	Aver.	50.0	-	8.3	37.5	-	-	-	-	-	16
Feb.	1970	100.0	-	-	-	-	-	-	-	-	6
	Aver.	100.0	-	-	-	-	-	-	-	-	6
Mar.	1970	100.0	-	-	-	-	-	-	-	-	6
	1971	62.5	-	-	37.5	-	-	-	-	-	16
	Aver.	81.2	-	-	18.7	-	-	-	-	-	11
Apr.	1969	100.0	-	-	-	-	-	-	-	-	10
	1970	60.0	-	20.0	20.0	-	-	-	-	-	10
	1971	63.6	-	9.1	27.3	-	-	-	-	-	11
	Aver.	74.5	-	9.7	15.8	-	-	-	-	-	10
May	1969	100.0	-	-	-	-	-	-	-	-	7
	1970	72.7	-	-	27.3	-	-	-	-	-	11
	1971	70.6	-	-	29.4	-	-	-	-	-	17
	Aver.	81.1	-	-	18.9	-	-	-	-	-	9
June	1969	100.0	-	-	-	-	-	-	-	-	5
	1970	40.0	5.0	5.0	50.0	-	-	-	-	-	20
	1971	50.0	-	8.3	41.7	-	-	-	-	-	12
	Aver.	63.3	1.7	4.4	30.6	-	-	-	-	-	12
July	1968	68.4	-	-	15.8	15.8	-	-	-	-	19

1/ Computed from weekly averages.
2/ Number per 165 sq. cm. (depth 10cm.), or approximately 1 pint, of bottom.

Table 107(cont.) Seasonal Relative Abundance of Amphipods Sampled in the Period 1968-1971
1/Control Area

Date		Type A	B	C	D	E	F	G	H	I	Total No.2/
July	1969	83.3	-	5.6	5.6	-	-	-	5.6	-	18
	1970	12.3	1.8	7.0	64.9	14.0	-	-	-	-	57
	Aver.	54.7	0.6	4.2	28.8	9.9	-	-	1.9	-	31
Aug.	1968	66.7	-	-	33.3	-	-	-	-	-	3
	1969	75.0	8.3	-	8.3	-	-	-	-	8.3	12
	1970	40.0	-	5.0	50.0	5.0	-	-	-	-	20
	Aver.	60.6	2.8	1.7	30.5	1.7	-	-	-	2.8	12
Sept.	1968	35.7	-	-	14.5	7.1	42.9	-	-	-	14
	1969	53.3	3.3	-	3.3	-	10.0	-	30.0	-	30
	1970	17.8	4.4	-	68.9	6.7	-	2.2	-	-	45
	Aver.	35.6	2.6	-	28.8	4.6	17.6	0.7	10.0	-	30
Oct.	1969	70.5	-	-	29.5	-	-	-	-	-	44
	1970	71.4	7.1	21.4	-	-	-	-	-	-	14
	Aver.	70.9	3.5	10.7	14.7	-	-	-	-	-	29
Nov.	1969	15.2	-	-	84.8	-	-	-	-	-	33
	1970	42.1	15.8	-	42.1	-	-	-	-	-	19
	Aver.	28.6	7.9	-	63.4	-	-	-	-	-	26
Dec.	1969	9.1	-	-	90.9	-	-	-	-	-	33
	1970	62.5	-	-	37.5	-	-	-	-	-	8
	Aver.	35.8	-	-	64.2	-	-	-	-	-	20

1/ Computed from weekly averages.
2/ Number per 165 sq. cm. (depth 10cm.). or approximately 1 pint, of bottom.

Table 108 Relative Abundance of Fishes Captured by Seine: 1/Experimental and Control Areas, Monthly Averages 1968-1971

	1968				1969											
	July		August		April		May		June		July		August		October.	
Species	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.
Total	12969	16701	17875	34478	412	634	3990	87082	7383	4113	1983	22514	45283	18044	4693231	5139
Sea Herring	0	0	0	0	0	0	70	200	6269	4195	452	30	0	0	0	0
Hickory Shad	11	0	0	0	0	0	0	0	3	0	1537	0	126	0	0	0
Menhaden	345	243	34	19	0	0	0	0	0	0	2035	2765	365	582	5844	20
Common Anchovy	5	0	0	0	0	0	0	0	2	0	0	0	0	348	4671906	72
Striped Anchovy	0	0	0	0	0	0	0	0	0	0	7	19	0	0	0	0
Brown Trout	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Smelt	0	27	10	5	0	0	0	0	0	0	7	557	27	44	0	0
Eel	1	0	0	0	0	0	0	0	108	0	0	0	3	8	0	0
Common Killifish	13	0	54	0	0	0	0	0	18	0	15	0	1	0	67	0
Striped Killifish	0	0	16	7	0	480	16	308	14	0	116	6	124	0	6908	75
Sheepshead Minnow	0	0	0	0	0	0	0	0	0	0	0	0	0	0	661	0
Tomcod	0	0	0	0	0	0	0	0	57	0	9	0	0	0	0	0
Pollock	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
Spotted Hake	0	0	0	0	0	0	0	0	3	14	0	0	0	0	0	0
Blackback Flounder	18	63	50	78	3	17	197	0	68	25	34	5	103	4	3	25
Daylight Flounder	0	13	5	0	0	0	61	50	10	93	0	0	29	25	0	0
Silverside	12356	15285	17456	34169	407	137	252	8	96	245	14240	10808	43625	15166	7170	4922
Rough Silverside	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
White Mullet	5	0	0	0	0	0	0	0	0	0	0	0	0	0	608	25
Pipefish	52	0	15	20	0	0	22	50	560	20	46	110	8	40	0	0
Mackerel	0	0	0	0	0	0	0	0	1	0	437	131	1	20	0	0
Goggle-eyed Scad	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
Bluefish	100	47	138	19	0	0	0	0	0	3	806	0	772	142	0	0
Porgy	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
Kingfish	0	8	5	103	0	0	7	0	0	0	4	49	16	52	0	0
Sand Perch	0	0	0	0	0	0	0	0	0	0	0	29	0	5	8	0
Grubby Scalpin	12	0	8	0	0	0	5	0	122	68	19	6	11	27	0	0
Longhorn Scalpin	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Common Sea Robin	0	0	0	0	0	0	0	0	0	0	0	22	26	284	0	0
Striped Sea Robin	0	5	0	6	0	0	0	0	0	0	0	0	0	0	0	0
Tautog	5	5	17	0	0	0	0	0	8	0	0	0	0	0	0	0
Cunner	1	0	48	6	0	0	0	0	0	0	0	0	11	0	0	0
Sand Launt	42	74	0	0	0	0	3360	86466	21	50	1	622	0	0	56	0
Puffer	3	931	19	22	0	0	0	0	0	0	86	7455	15	1297	0	0

1/ In terms of number of fish per 100,000 square feet of seining area.

Table 108 (cont.) Relative Abundance of Fishes Captured by Seine: 1/Experimental and Control Areas, Monthly Averages 1968-1971

	1969				1970											
	November		December		February		March		April		May		June		July	
Species	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.
Total	16647	8694	6286	2050	15	0	9	40	3125	307	2165	5650	1802	405	1737	396
Sea Herring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hickory Shad	40	13	30	0	0	0	0	0	27	0	0	0	0	0	0	0
Menhaden	11904	5187	228	60	0	0	0	0	0	0	0	0	0	0	4	27
Common Anchovy	11	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0
Striped Anchovy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brown Trout	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0
Smelt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0
Eel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	118	0
Common Killifish	0	0	40	0	0	0	0	0	0	0	62	0	20	0	0	0
Striped Killifish	493	0	0	0	0	0	0	0	5	67	196	80	150	10	107	0
Sheepshead Minnow	0	0	0	0	0	0	0	0	0	0	75	20	300	0	0	0
Tomcod	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	10
Pollock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotted Hake	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blackback Flounder	11	27	0	0	0	0	0	0	17	0	7	100	80	0	255	82
Daylight Flounder	0	0	0	0	0	0	0	0	0	0	0	20	3	4	0	23
Silverside	3492	3187	5981	1920	15	0	9	40	3076	227	1813	150	1055	383	388	167
Rough Silverside	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0
White Mullet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pipefish	0	0	0	0	0	0	0	0	0	0	0	0	61	0	97	7
Mackerel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goggle-eyed Scad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluefish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	191	46
Porgy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kingfish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Perch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Scalpin	0	13	0	10	0	0	0	0	0	0	0	0	23	0	15	0
Longhorn Scalpin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Common Sea Robin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7
Striped Sea Robin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tautog	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0
Cunner	0	0	0	0	0	0	0	0	0	0	0	0	90	0	515	0
Sand Launt	696	267	0	60	0	0	0	0	0	13	12	5280	0	0	0	0
Puffer	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	27

1/ In terms of number of fish per 100,000 square feet of seining area.

Table 108(cont.) Relative Abundance of Fishes Captured by Seine: 1/Experimental and Control Areas, Monthly Averages 1968-1971

	1970												1971					
	August		October		November		December		January		March		April		May		June	
Species	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.
Total	10577	6376	12365	0	5568	360	783	0	0	0	0	0	88	16	84	10	23	67
Sea Herring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hickory Shad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Menhaden	145	114	25	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0
Common Anchovy	0	0	8750	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
Striped Anchovy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brown Trout	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Smelt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Common Killifish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	8	0
Striped Killifish	23	7	0	0	279	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheepshead Minnow	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tomcod	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pollock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotted Hake	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blackback Flounder	205	40	0	0	0	0	0	0	0	0	0	0	0	0	31	0	4	0
Daylight Flounder	6	5	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	27
Silverside	10079	5863	3590	0	4612	340	783	0	0	0	0	0	88	16	18	0	0	0
Rough Silverside	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
White Mullet	0	0	0	0	637	0	0	0	0	0	0	0	0	0	0	0	0	0
Pipefish	9	7	0	0	0	0	0	0	0	0	0	0	0	0	11	10	7	27
Mackerel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goggle-eyed Scad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bluefish	1028	286	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Porgy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kingfish	59	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Perch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Scalpin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Longhorn Scalpin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Common Sea Robin	8	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
Striped Sea Robin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tautog	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Launt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0
Puffer	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

1/ In terms of number of fish per 100,000 square feet of seining area.

Table 109 Salinity Equivalents1/

Salinity	Specific Gravity 60° F	Chloride Content p.p.m.	"Sea Water" %
0	1.000	0	0
1	1.001	720	4
2	1.002	1440	8
3	1.003	2160	12
4	1.004	2880	16
5	1.005	3600	21
6	1.006	4320	25
7	1.007	5040	29
8	1.008	5760	33
9	1.009	6480	37
10	1.010	7200	41
11	1.011	7920	45
12	1.012	8640	49
13	1.013	9360	53
14	1.014	10080	57
15	1.015	10800	62
16	1.016	11520	66
17	1.017	12240	70
18	1.018	12960	74
19	1.019	13680	78
20	1.020	14400	82
21	1.021	15120	86
22	1.022	15840	90
23	1.023	16560	95
24	1.024	17280	99
24.3	1.0243	17500	100

1/ After Faigenbaum (1939). Chemical Investigations of the South Shore and Eastern Bay Areas of Long Island. A Biological Survey of the Salt Waters of Long Island, 1938, Part 1. State of New York Conservation Dept. Albany: p. 153-162.

Table 110 Common and Scientific Names of Fish Species Taken at Shoreham

Sea Herring, Clupea harengus

Hickory Shad, Clupea mediocris

Menhaden, Brevoortia tyrannus

Common Anchovy, Anchoa mitchilli

Striped Anchovy, Anchoa hepsetus

Brown Trout, Salmo trutta

Smelt, Osmerus mordax

Eel, Anguilla rostrata

Common Killifish, Fundulus heteroclitus

Striped Killifish, Fundulus majalis

Sheepshead Minnow, Cyprinodon variegatus

Pollock, Pollachius virens

Tomcod, Microgadus tomcod

Spotted Hake, Urophycis regius

Blackback Flounder, Pseudopleuronectes americanus

Daylight Flounder, Lophopsetta maculata

Silverside, Menidia menidia

Rough Silverside, Membras vagrans

White Mullet, Mugil curema

Pipefish, Syngnathus fuscus

Mackerel, Scomber scombrus

Goggle-eyed Scad, Trachurops crumenopthalmus

Bluefish, Pomatomus saltatrix

Sea Bass, Centropristes striatus

Porgy, Stenotomus chrysops

Weakfish, Cynoscion regalis

Kingfish, Menticirrhus saxatilis

Silver or Sand Perch, Bairdiella chrysura

Grubby Sculpin, Myoxocephalus aeneus

Longhorn Sculpin, Myoxocephalus octodecimspinosus

Common Sea Robin, Prionotus carolinus

Striped Sea Robin, Prionotus evolans

Tautog, Tautoga onitis

Cunner, Tautogolabrus adspersus

Sand Launt, Ammodytes americanus

Puffer, Sphaeroides maculatus

Figure 1. Monthly Average Surface Water Temperatures, Computed from Months Sampled from 1968-1971: Experimental and Control Areas

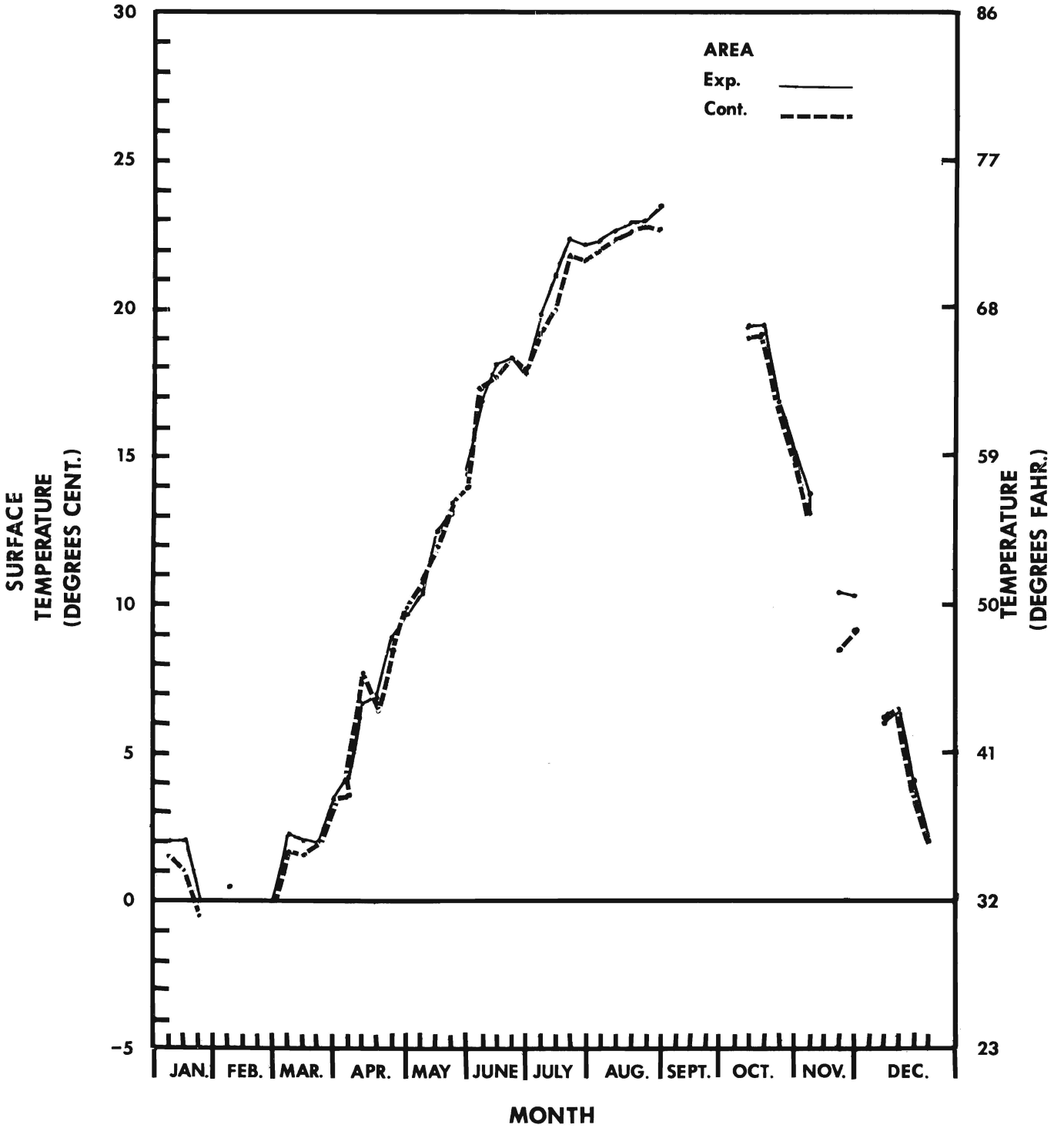

AREA
Exp.
Cont.
SURFACE TEMPERATURE (DEGREES CENT.)
TEMPERATURE (DEGREES FAHR.)
30
25
20
15
10
5
0
-5
86
77
68
59
50
41
32
23
JAN.
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
MONTH

Figure 2. Monthly Average Bottom Water Temperatures, Computed from Months Sampled from 1968-1971: Experimental and Control Areas

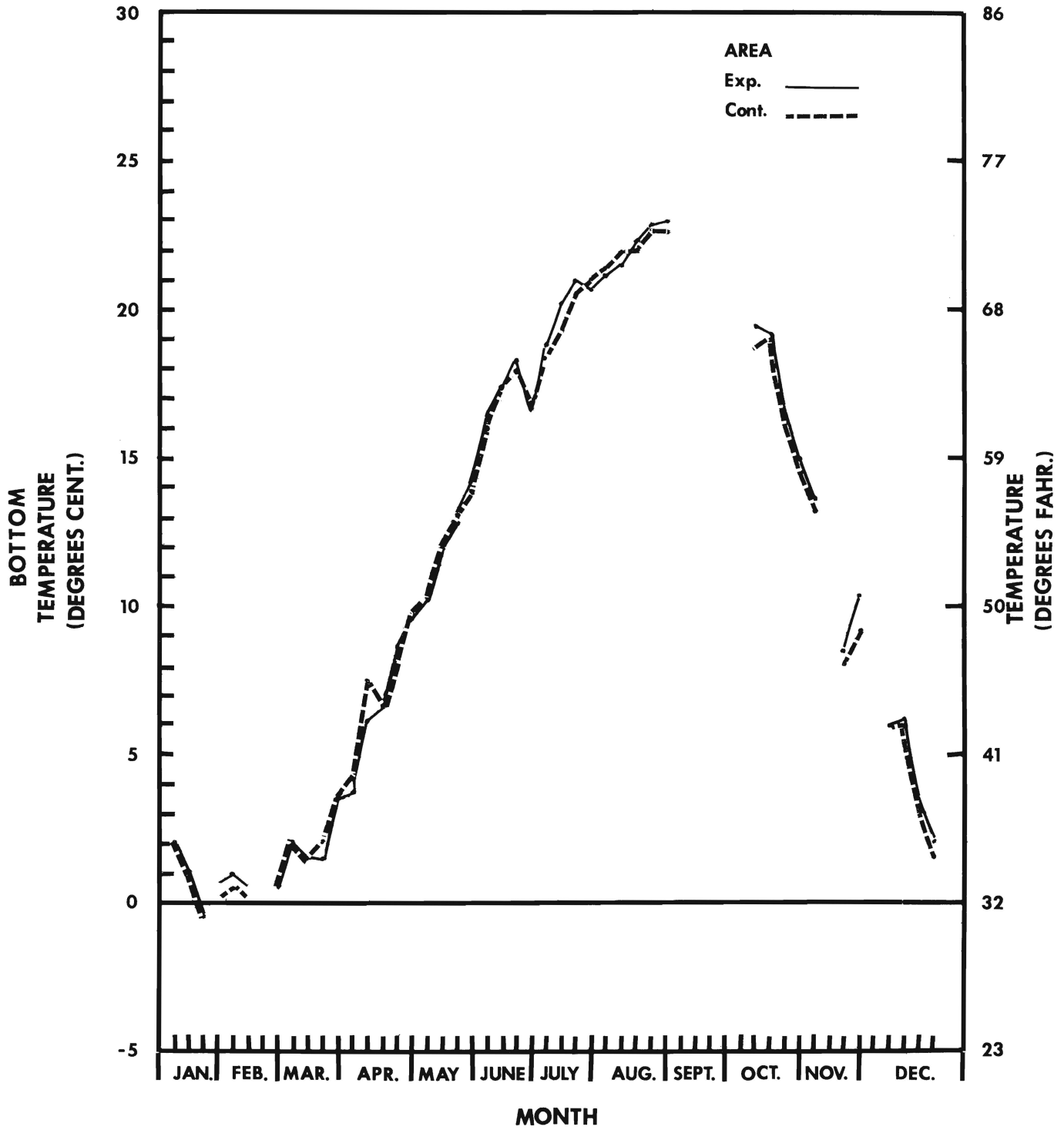

AREA
Exp.
Cont.
30
25
20
15
10
5
0
-5
86
77
68
59
50
41
32
23
BOTTOM TEMPERATURE (DEGREES CENT.)
TEMPERATURE (DEGREES FAHR.)
JAN.
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
MONTH

Figure 3. Monthly Average Dissolved Oxygen in Bottom Water, Computed from Months Sampled from 1968-1971: Experimental and Control Areas

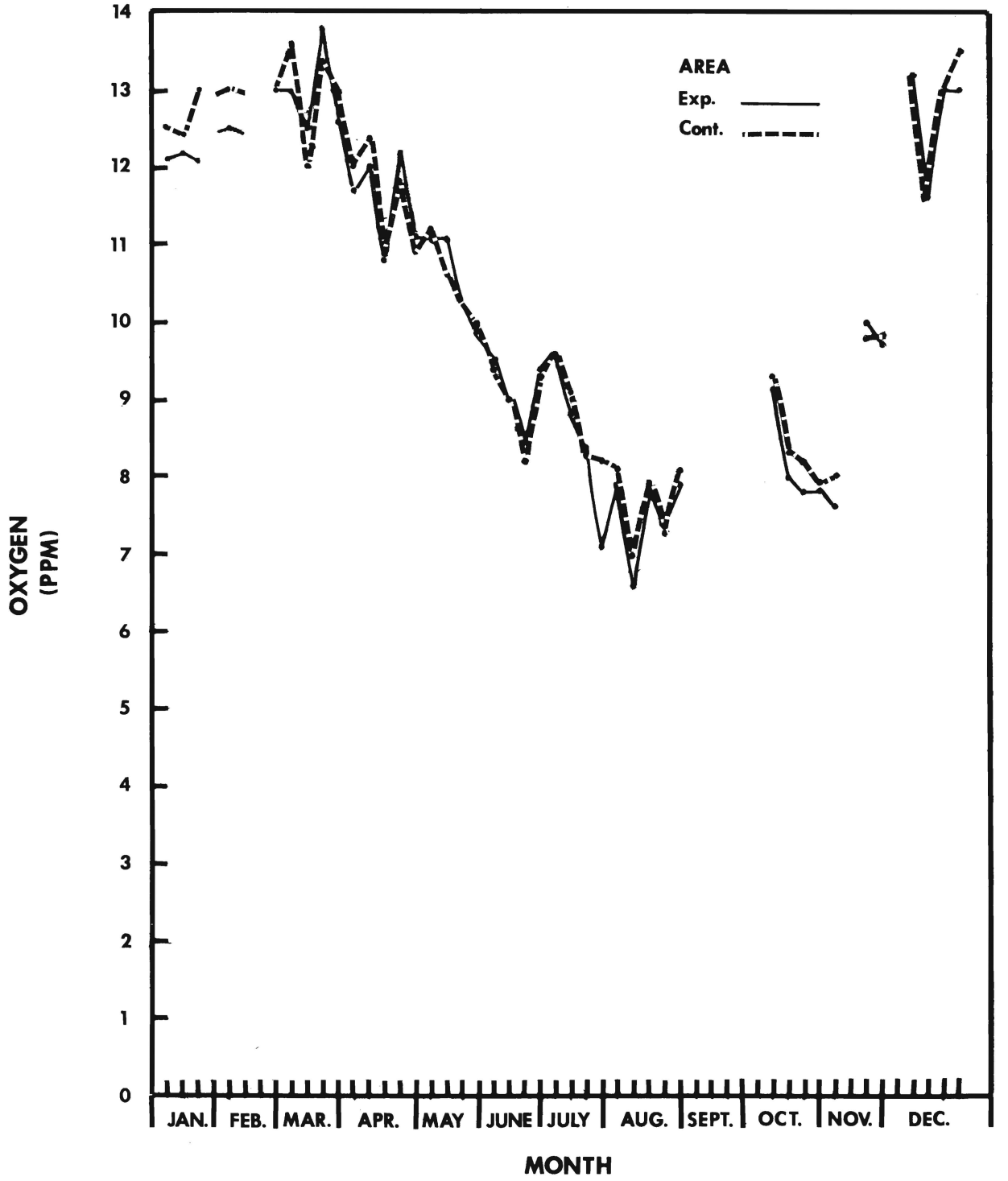

AREA
Exp.
Cont.
OXYGEN (PPM)
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
JAN.
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
MONTH

Figure 4. Weekly Averages of Total Plankton Concentration for Weeks Sampled from 1968-1971: Experimental and Control Areas

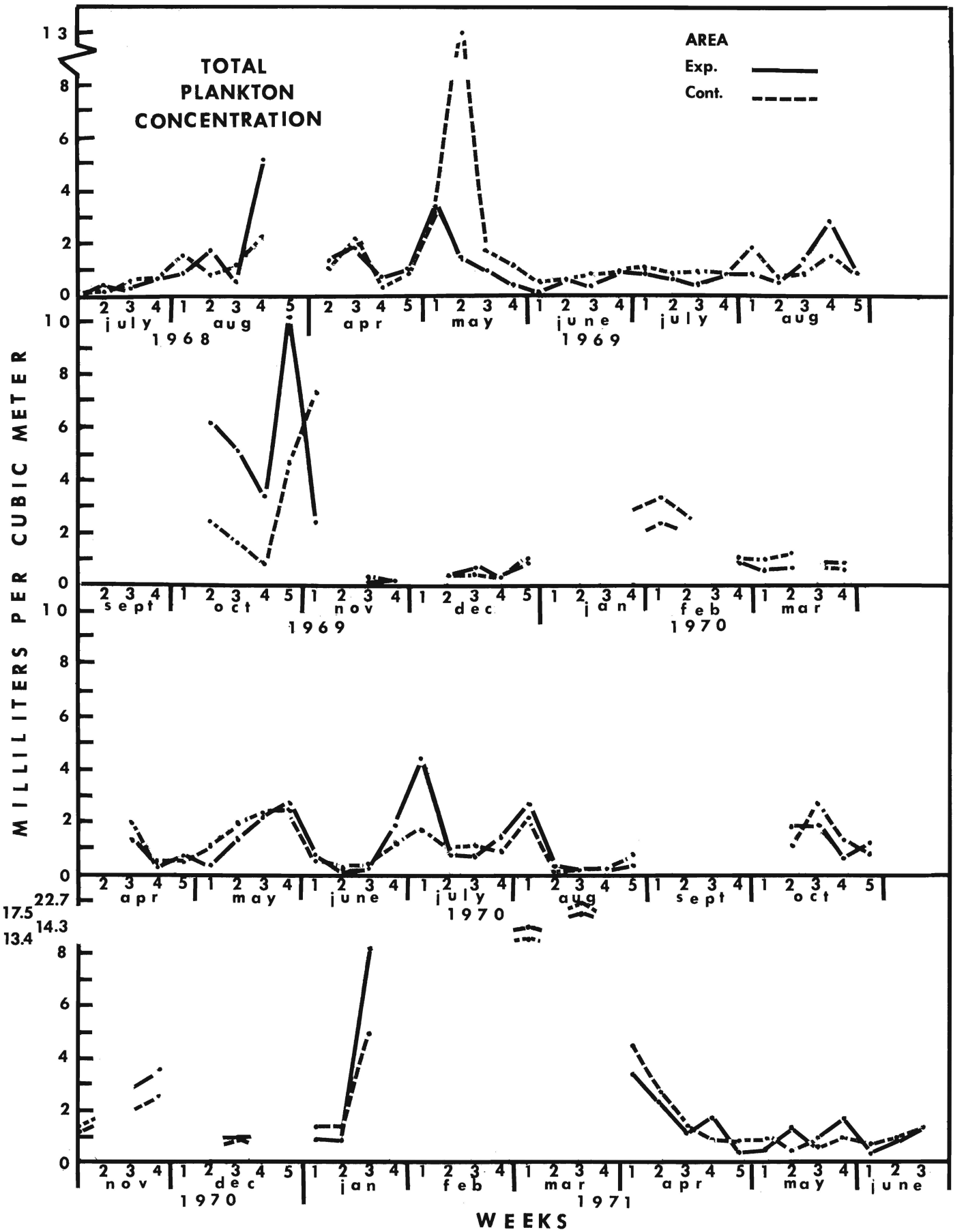

TOTAL
PLANKTON
CONCENTRATION
AREA
Exp.
Cont.
MILLILITERS PER CUBIC METER
WEEKS
july aug 1968
apr may june july aug 1969
sept oct nov dec 1969
jan feb mar 1970
apr may june july aug sept oct 1970
nov dec 1970
jan feb mar apr may june 1971
22.7
17.5
14.3
13.4

Figure 5. Monthly Averages of Number of Zooplankton Per Cubic Meter, for Months Sampled from 1968-1971: Experimental and Control Areas

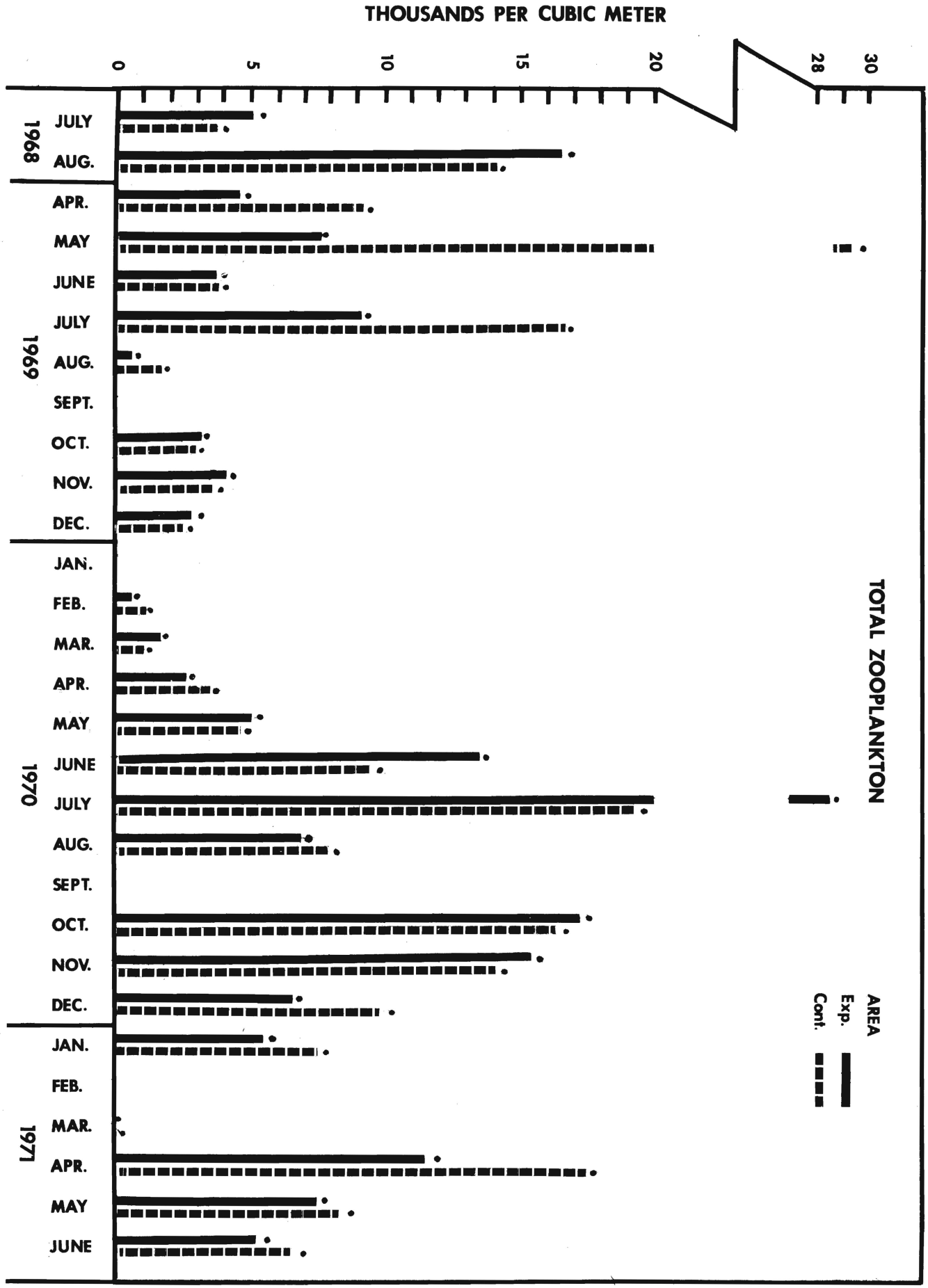

THOUSANDS PER CUBIC METER
0
5
10
15
20
28
30
1968
JULY
AUG.
1969
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
1970
JAN.
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
1971
JAN.
FEB.
MAR.
APR.
MAY
JUNE
TOTAL ZOOPLANKTON
AREA
Exp.
Cont.

Figure 6.Weekly Averages of Percentage of Copepods and Copepod Nauplii in the Zooplankton, for Weeks Sampled from July 1968-August 1969: Experimental and Control Areas

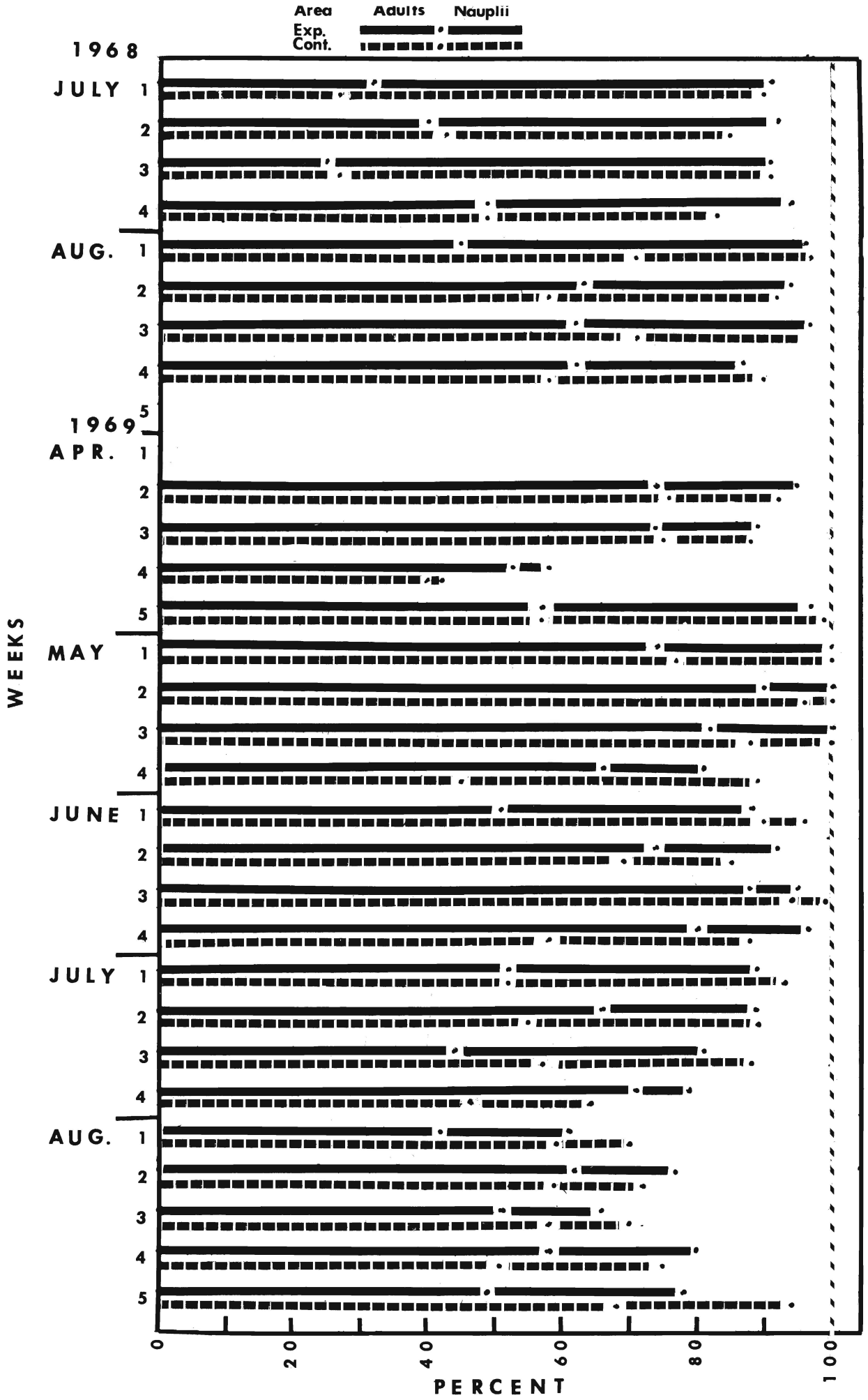

Area
Adults
Nauplii
Exp.
Cont.
1968
JULY
1
2
3
4
AUG.
1
2
3
4
5
1969
APR.
1
2
3
4
5
MAY
1
2
3
4
JUNE
1
2
3
4
JULY
1
2
3
4
AUG.
1
2
3
4
5
WEEKS
0
20
40
60
80
100
PERCENT

Figure 7. Weekly Averages of Percentage of Copepods and Copepod Nauplii in the Zooplankton, for Weeks Sampled from Sept. 1969 - March 1970: Experimental and Control Areas

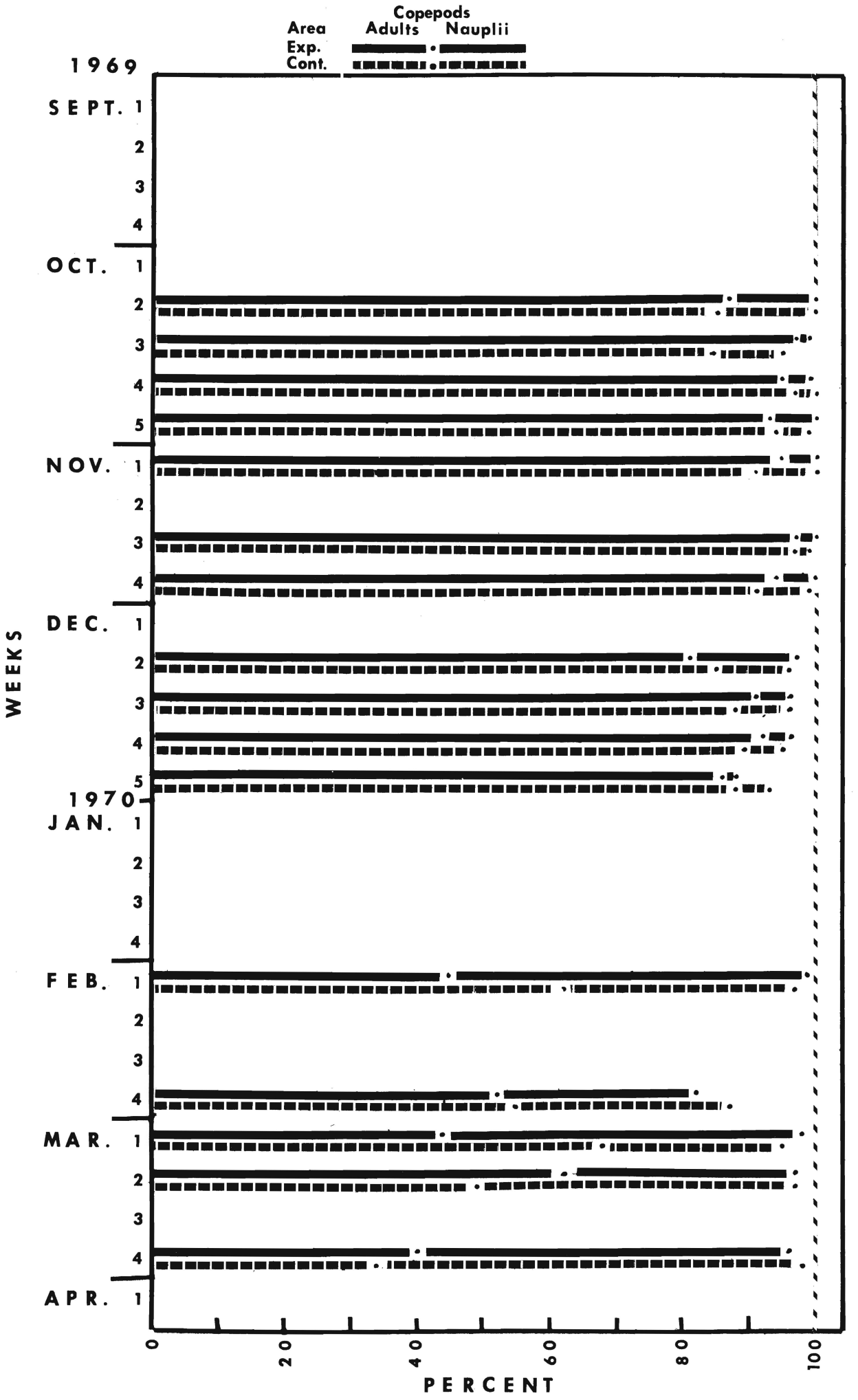

Copepods
Area
Adults
Nauplii
Exp.
Cont.
1969
SEPT.
OCT.
NOV.
DEC.
1970
JAN.
FEB.
MAR.
APR.
1
2
3
4
5
WEEKS
0
20
40
60
80
100
PERCENT

Figure 8. Weekly Averages of Percentage of Copepods and Copepod Nauplii in the Zooplankton, for Weeks Sampled from April 1970 - November 1970: Experimental and Control Areas

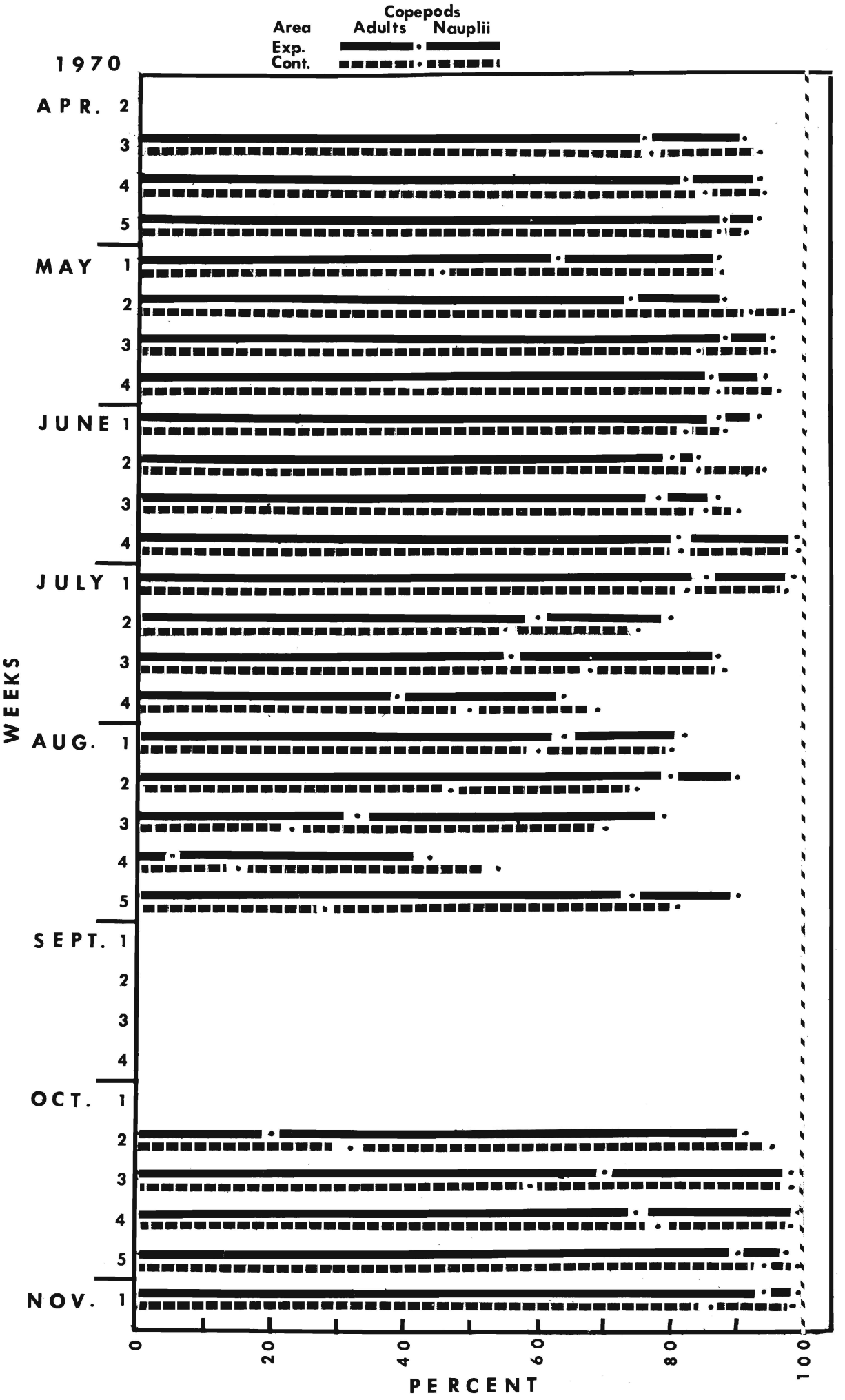

Copepods
Area
Adults
Nauplii
Exp.
Cont.
1970
APR. 2
3
4
5
MAY 1
2
3
4
JUNE 1
2
3
4
JULY 1
2
3
4
AUG. 1
2
3
4
5
SEPT. 1
2
3
4
OCT. 1
2
3
4
5
NOV. 1
WEEKS
0
20
40
60
80
100
PERCENT

Figure 9. Weekly Averages of Percentage of Copepods and Copepod Nauplii in the Zooplankton, for Weeks Sampled from November 1970 - June 1971: Experimental and Control Areas

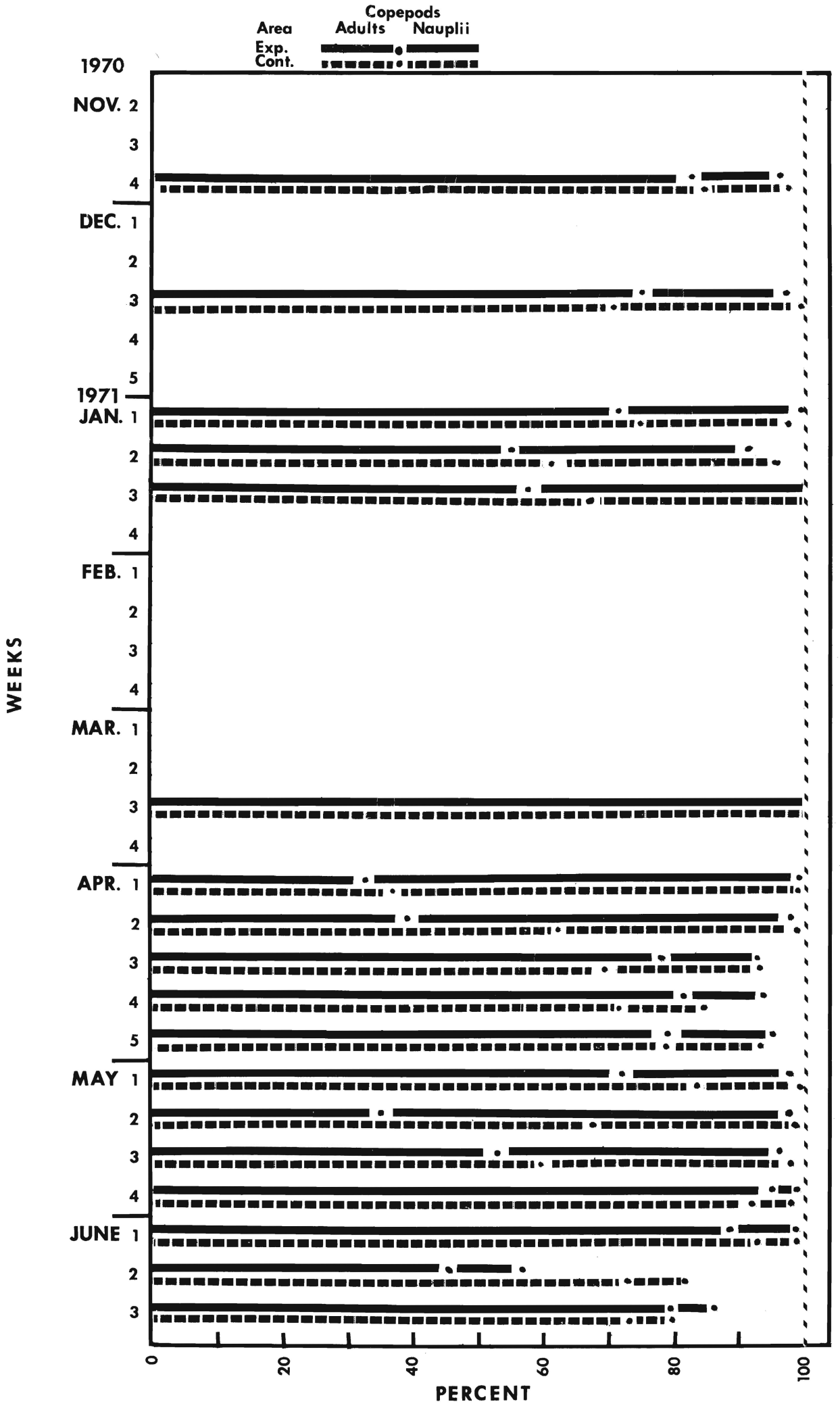

Copepods
Area
Adults
Nauplii
Exp.
Cont.
1970
NOV. 2
3
4
DEC. 1
2
3
4
5
1971
JAN. 1
2
3
4
FEB. 1
2
3
4
MAR. 1
2
3
4
APR. 1
2
3
4
5
MAY 1
2
3
4
JUNE 1
2
3
WEEKS
0
20
40
60
80
100
PERCENT

Figure 10. Monthly Averages of Number of Copepod Adults and Nauplii Per Cubic Meter, for Months Sampled from 1968 - 1971: Experimental and Control Areas

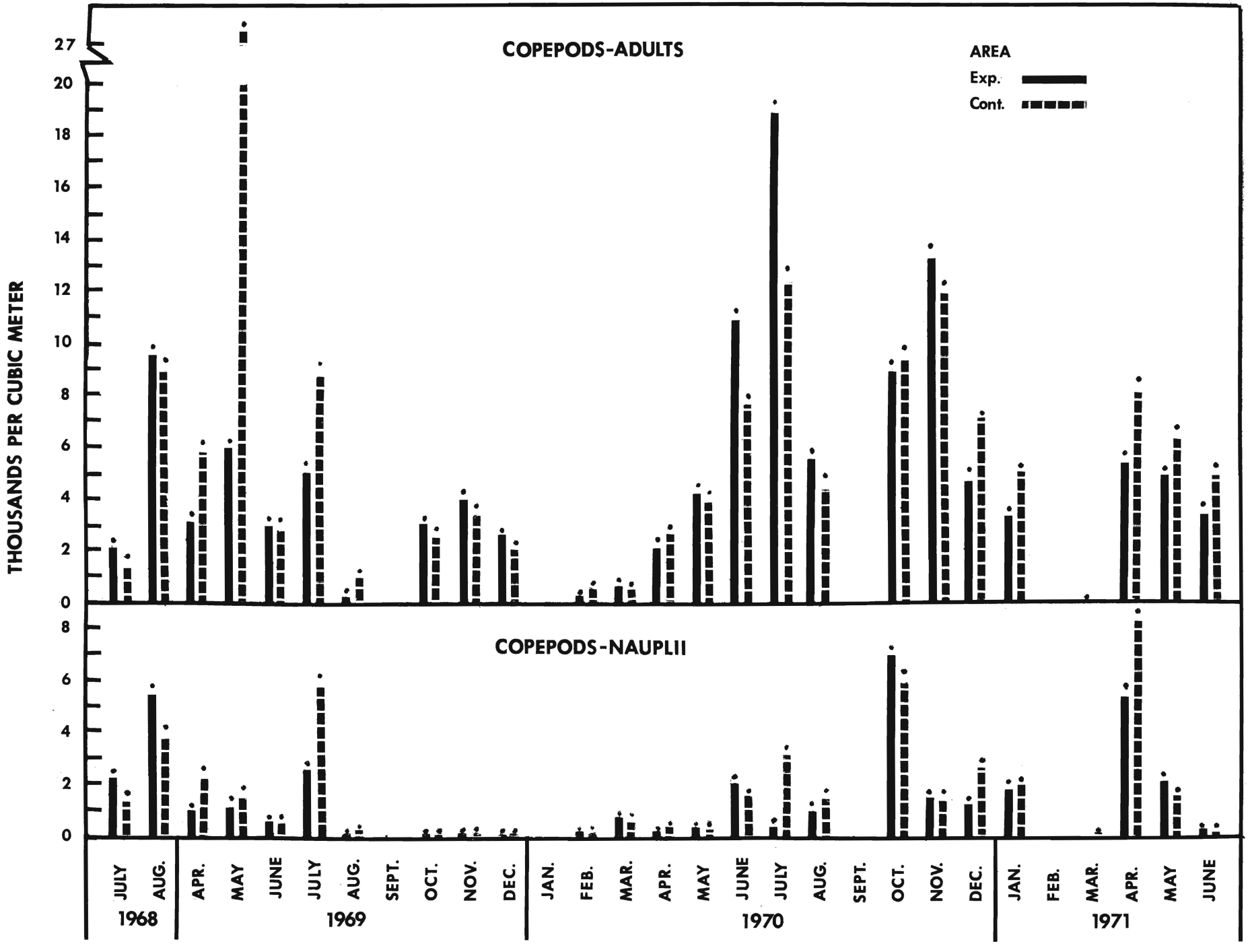

COPEPODS-ADULTS
AREA
Exp.
Cont.
THOUSANDS PER CUBIC METER
27
20
18
16
14
12
10
8
6
4
2
0
COPEPODS-NAUPLII
8
6
4
2
0
JULY
AUG.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN.
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN.
FEB.
MAR.
APR.
MAY
JUNE
1968
1969
1970
1971

Figure 11. Monthly Averages of Number of Barnacle Larvae, Cladocerans and Phytoplankton Per Cubic Meter, for Months Sampled from 1968 - 1971: Experimental and Control Areas

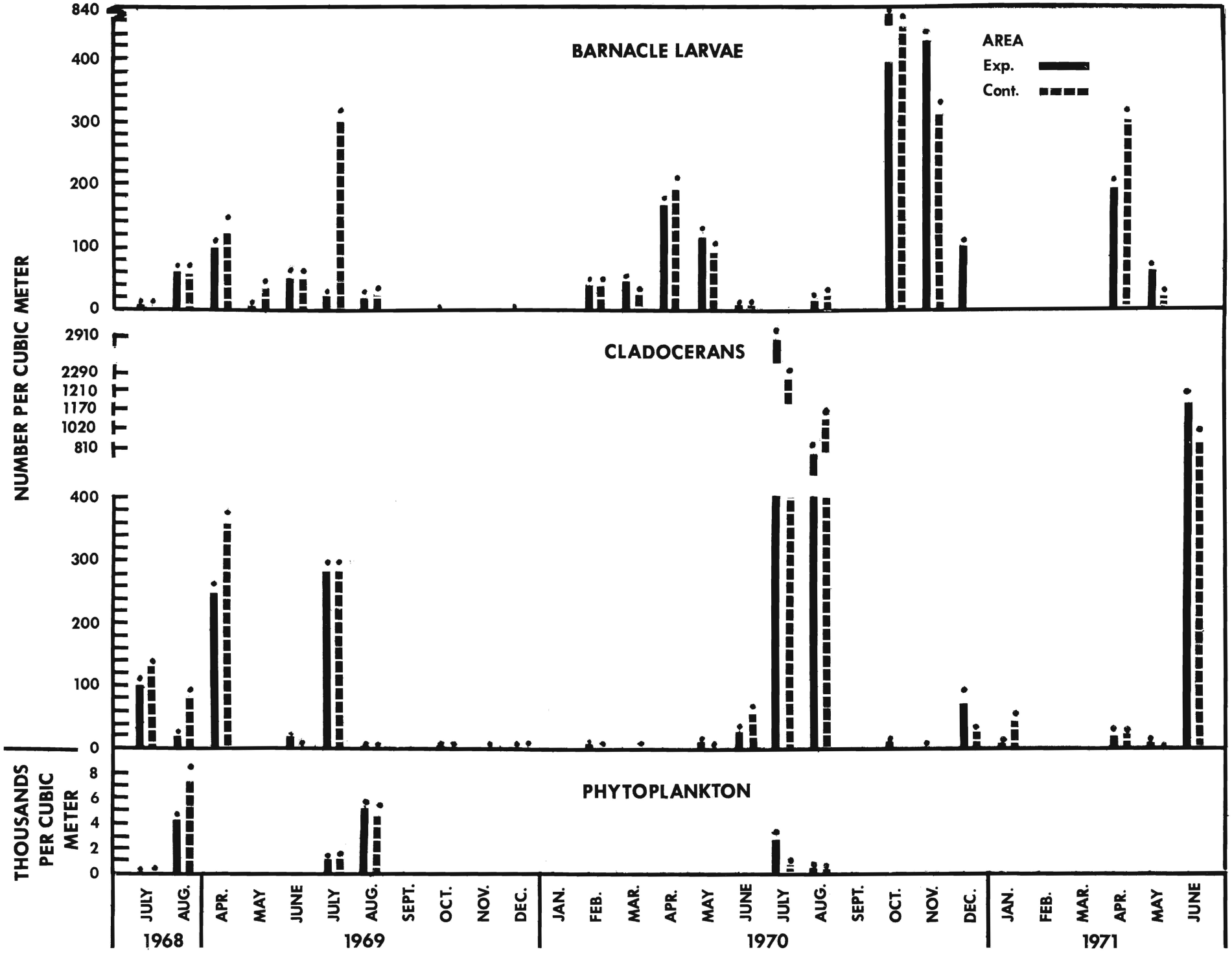

BARNACLE LARVAE
AREA
Exp.
Cont.
840
400
300
200
100
0
CLADOCERANS
2910
2290
1210
1170
1020
810
400
300
200
100
0
NUMBER PER CUBIC METER
PHYTOPLANKTON
THOUSANDS PER CUBIC METER
8
6
4
2
0
JULY
AUG.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN.
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN.
FEB.
MAR.
APR.
MAY
JUNE
1968
1969
1970
1971

Figure 12. Monthly Averages of Number of Gastropods, Lamellibranchs and Polychaetes Per Cubic Meter, for Months Sampled from 1968 - 1971: Experimental and Control Areas

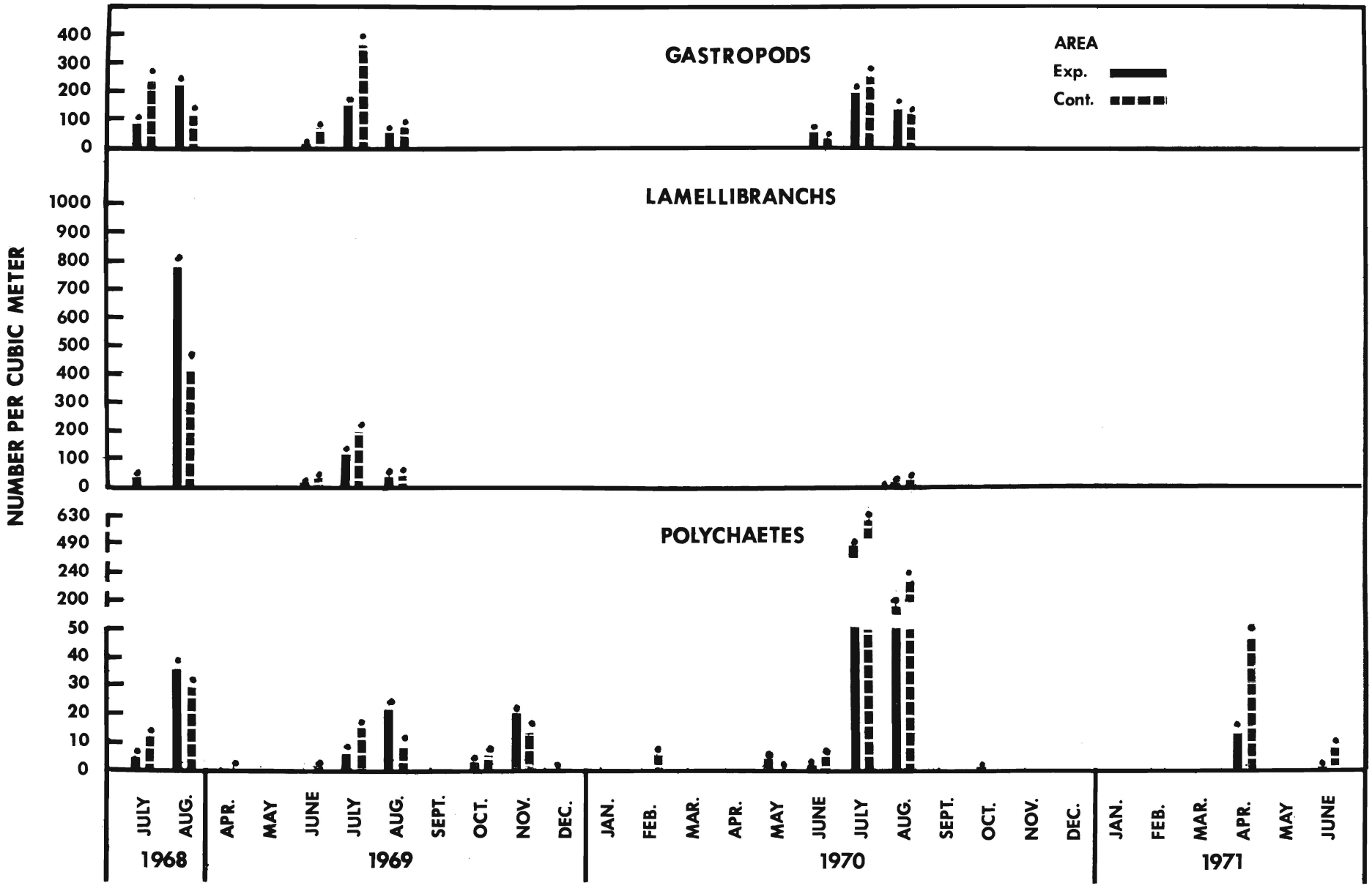

GASTROPODS
LAMELLIBRANCHS
POLYCHAETES
AREA
Exp.
Cont.
NUMBER PER CUBIC METER
400
300
200
100
0
1000
900
800
700
600
500
400
300
200
100
0
630
490
240
200
50
40
30
20
10
0
JULY
AUG.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN.
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN.
FEB.
MAR.
APR.
MAY
JUNE
1968
1969
1970
1971

Figure 13. Monthly Averages of Number of Fish Eggs Per Thousand Cubic Meters, for Months Sampled from 1968 - 1971: Experimental and Control Areas

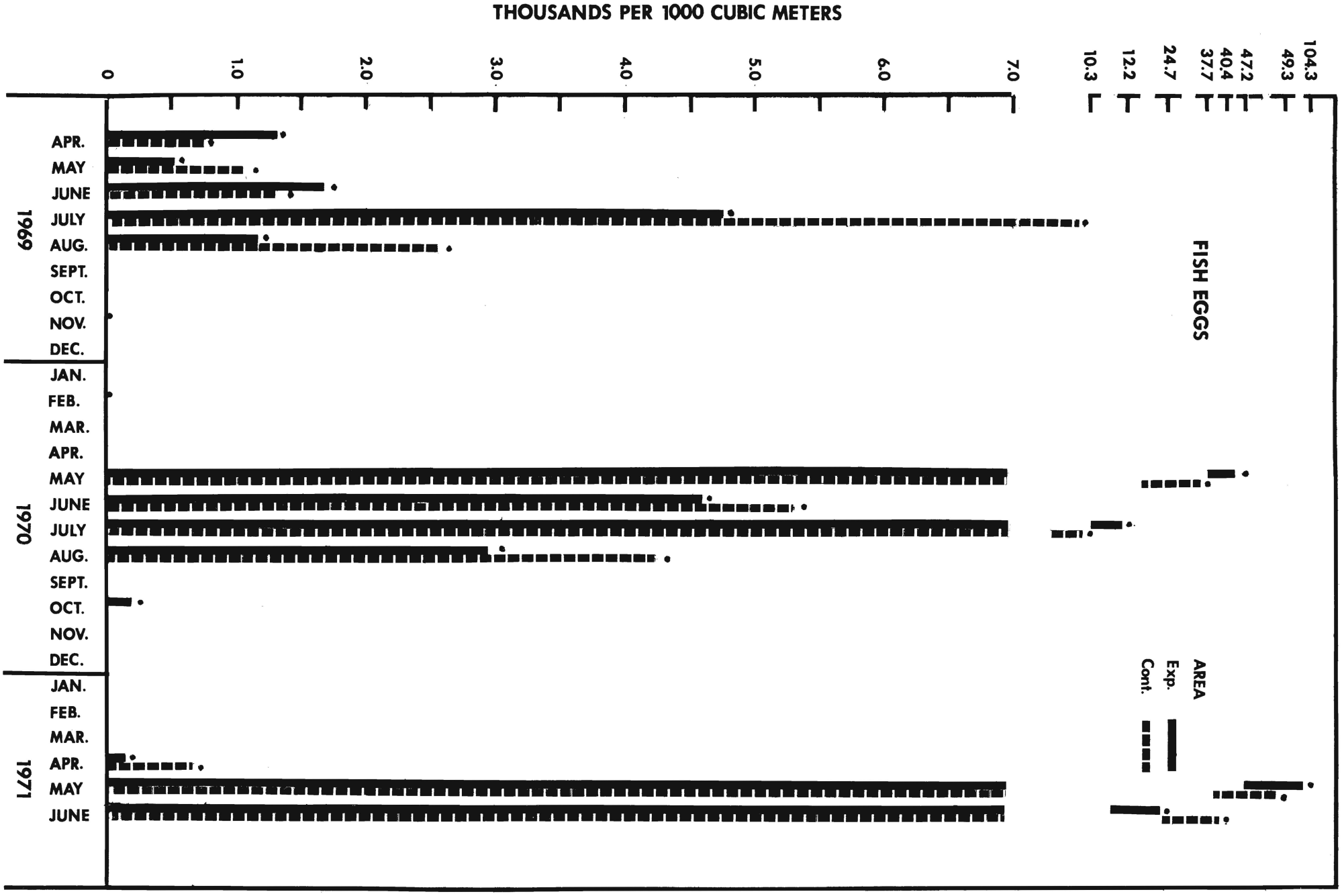

THOUSANDS PER 1000 CUBIC METERS
0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
10.3
12.2
24.7
37.7
40.4
47.2
49.3
104.3
1969
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
1970
JAN.
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
1971
JAN.
FEB.
MAR.
APR.
MAY
JUNE
FISH EGGS
AREA
Exp.
Cont.

Figure 14. Monthly Averages of Fish Larvae Per Thousand Cubic Meters, for Months Sampled from 1968 - 1971: Experimental and Control Areas

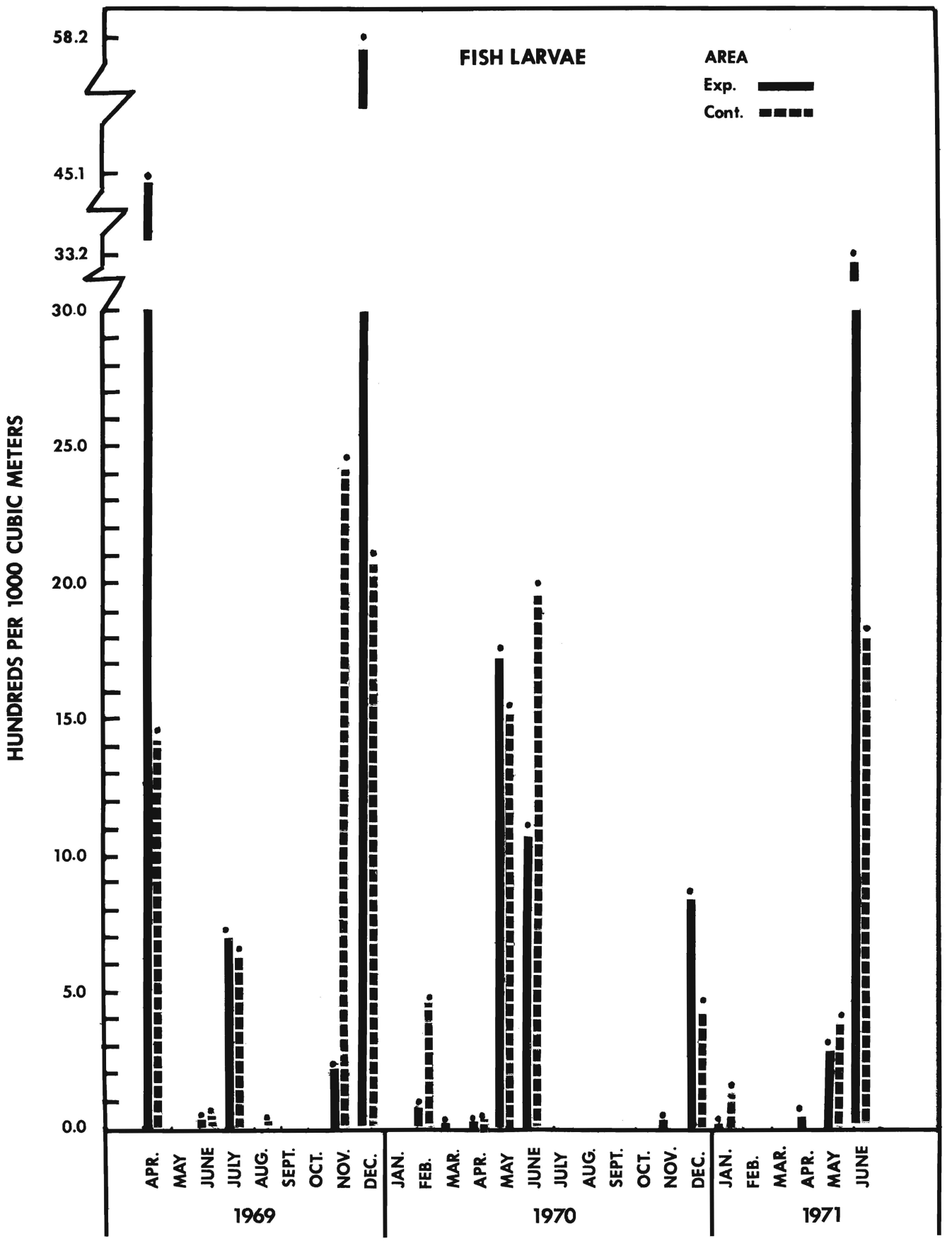

FISH LARVAE
AREA
Exp.
Cont.
HUNDREDS PER 1000 CUBIC METERS
58.2
45.1
33.2
30.0
25.0
20.0
15.0
10.0
5.0
0.0
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
1969
JAN.
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
1970
JAN.
FEB.
MAR.
APR.
MAY
JUNE
1971

Figure 15. Monthly Averages of the Number of Bottom Organisms Per 165 sq.cm. (one pint), for Months Sampled from 1968 -1971: Experimental and Control Areas

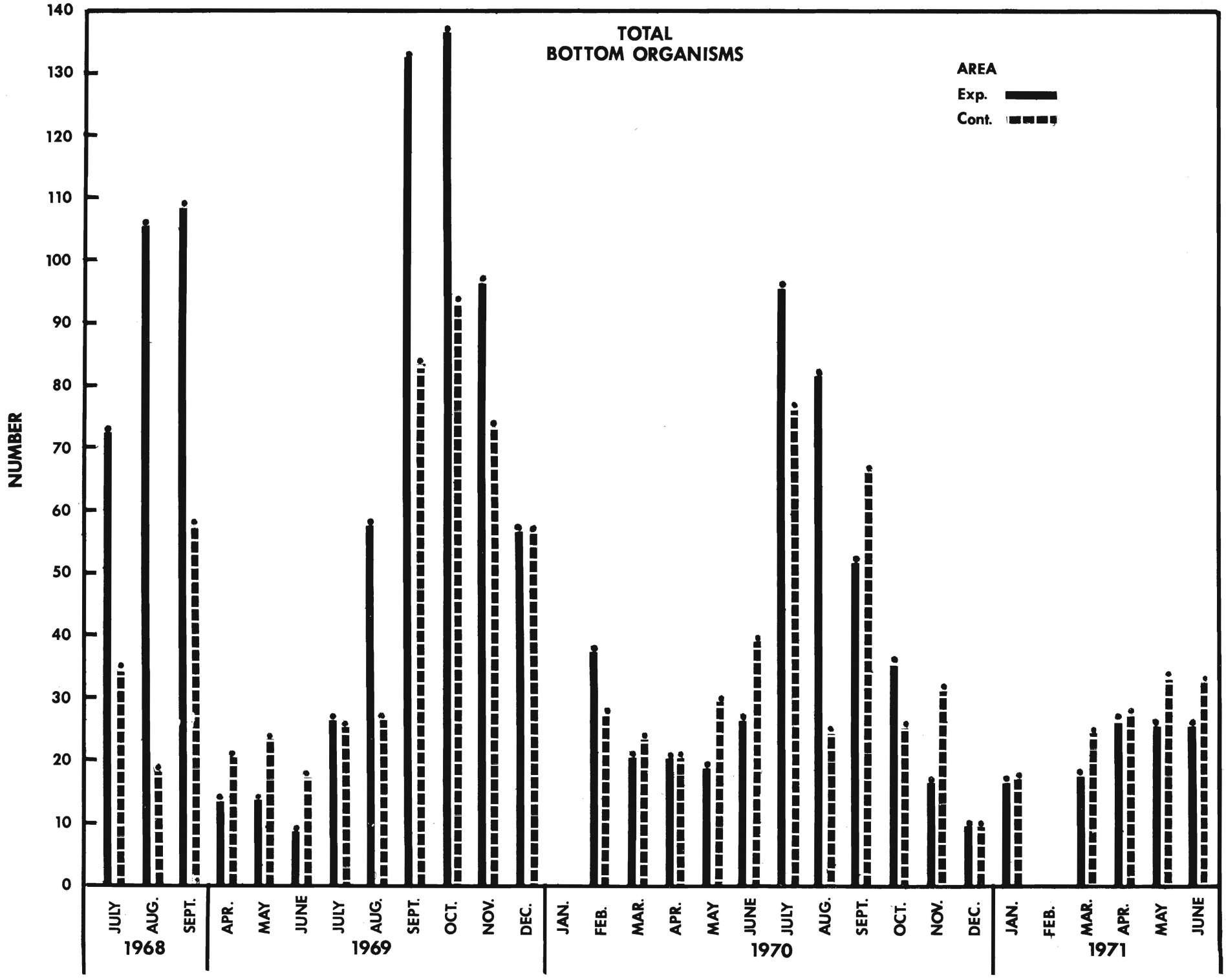

TOTAL
BOTTOM ORGANISMS
AREA
Exp.
Cont.
NUMBER
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
JULY
AUG.
SEPT.
1968
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
1969
JAN.
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
1970
JAN.
FEB.
MAR.
APR.
MAY
JUNE
1971

Figure 16. Monthly Average Percentages of the Total Bottom Fauna of Groups of Major Bottom Organisms, Computed from Months Sampled from 1968 - 1971: Experimental and Control Areas

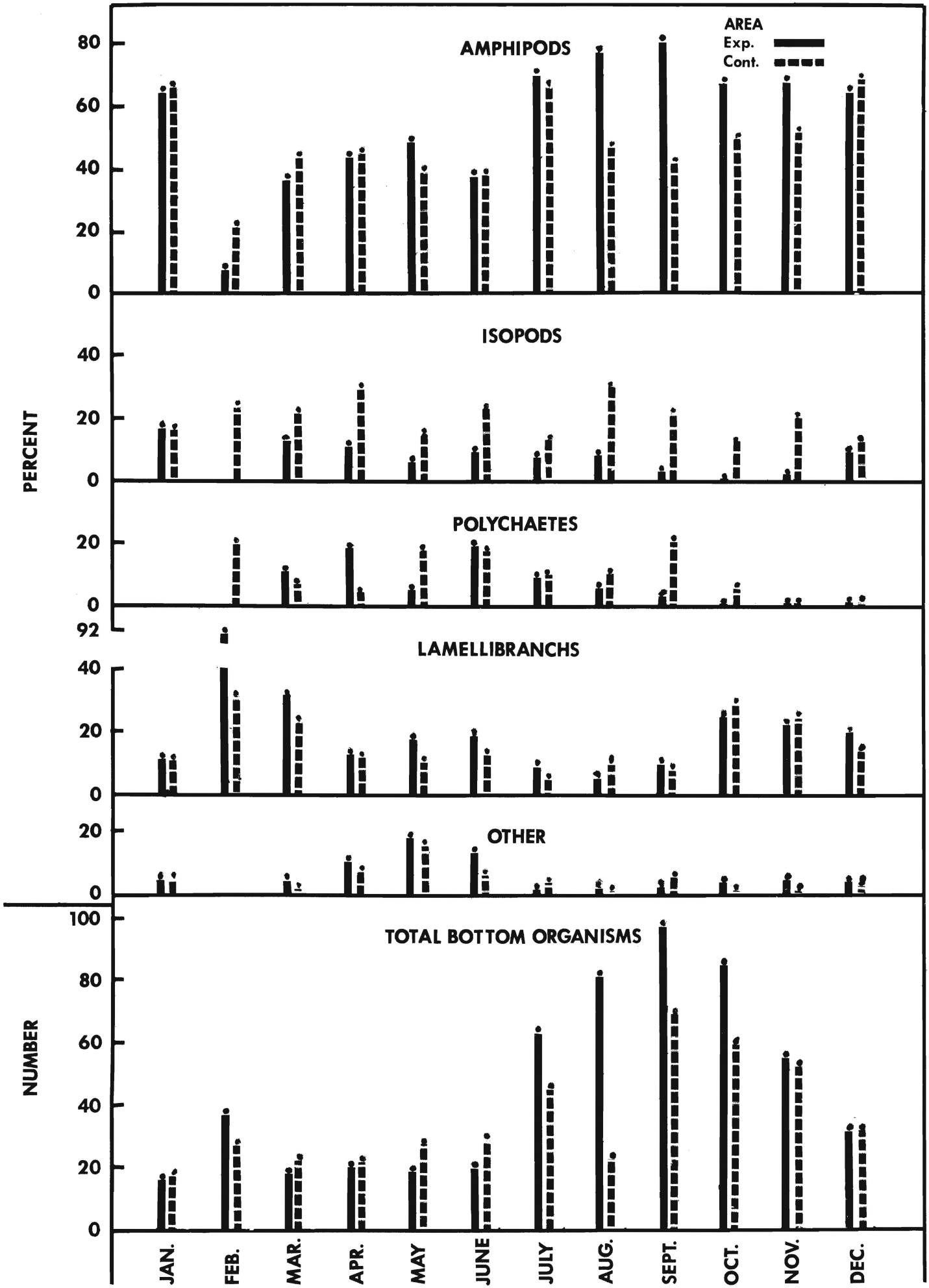

AREA
Exp.
Cont.
AMPHIPODS
ISOPODS
POLYCHAETES
LAMELLIBRANCHS
OTHER
TOTAL BOTTOM ORGANISMS
PERCENT
NUMBER
80
60
40
20
0
40
20
0
20
0
92
40
20
0
20
0
100
80
60
40
20
0
JAN.
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.

Figure 17. Monthly Averages of the Number of Isopods, Polychaetes, Lamellibranchs and Other Per 165 sq. cm. (one pint), Experimental and Control Areas

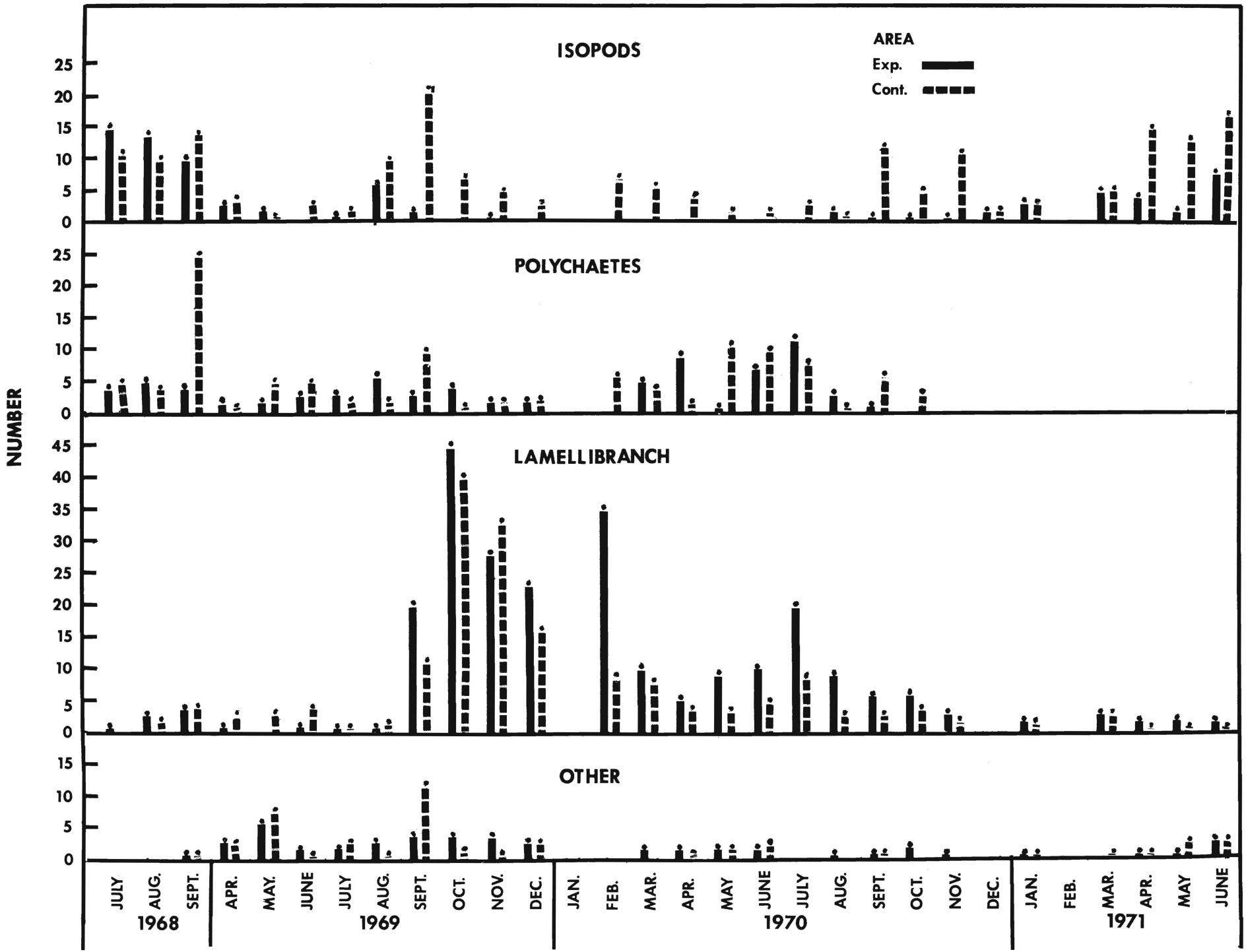

ISOPODS
AREA
Exp.
Cont.
POLYCHAETES
LAMELLIBRANCH
OTHER
NUMBER
JULY
AUG.
SEPT.
APR.
MAY.
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN.
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN.
FEB.
MAR.
APR.
MAY
JUNE
1968
1969
1970
1971

Figure 18. Monthly Averages of the Number of Amphipods Per 165 sq.cm. (one pint), for Months Sampled from 1968 - 1971, and the Monthly Average Percentage of These Comprising Major Amphipod Types A, D and E

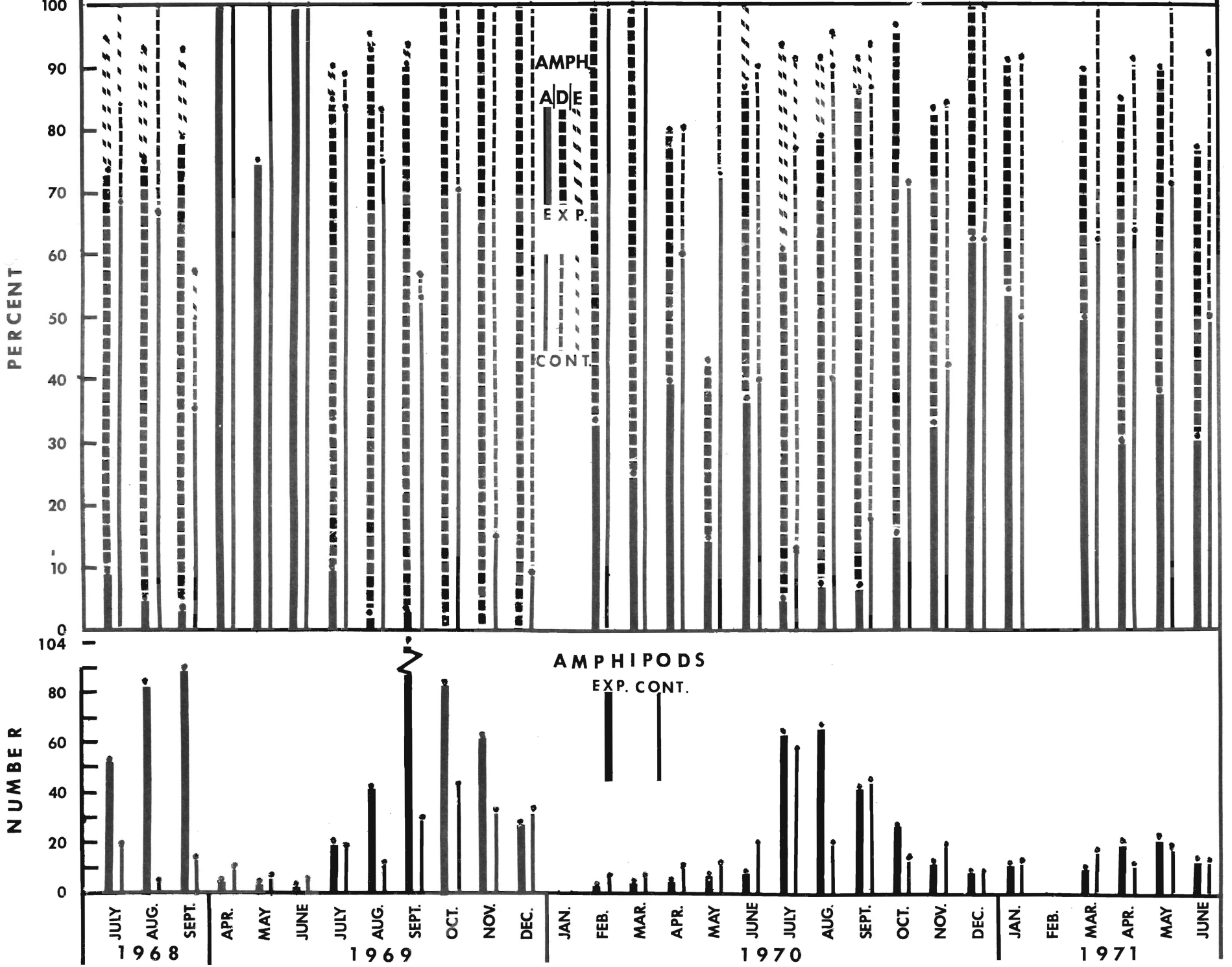
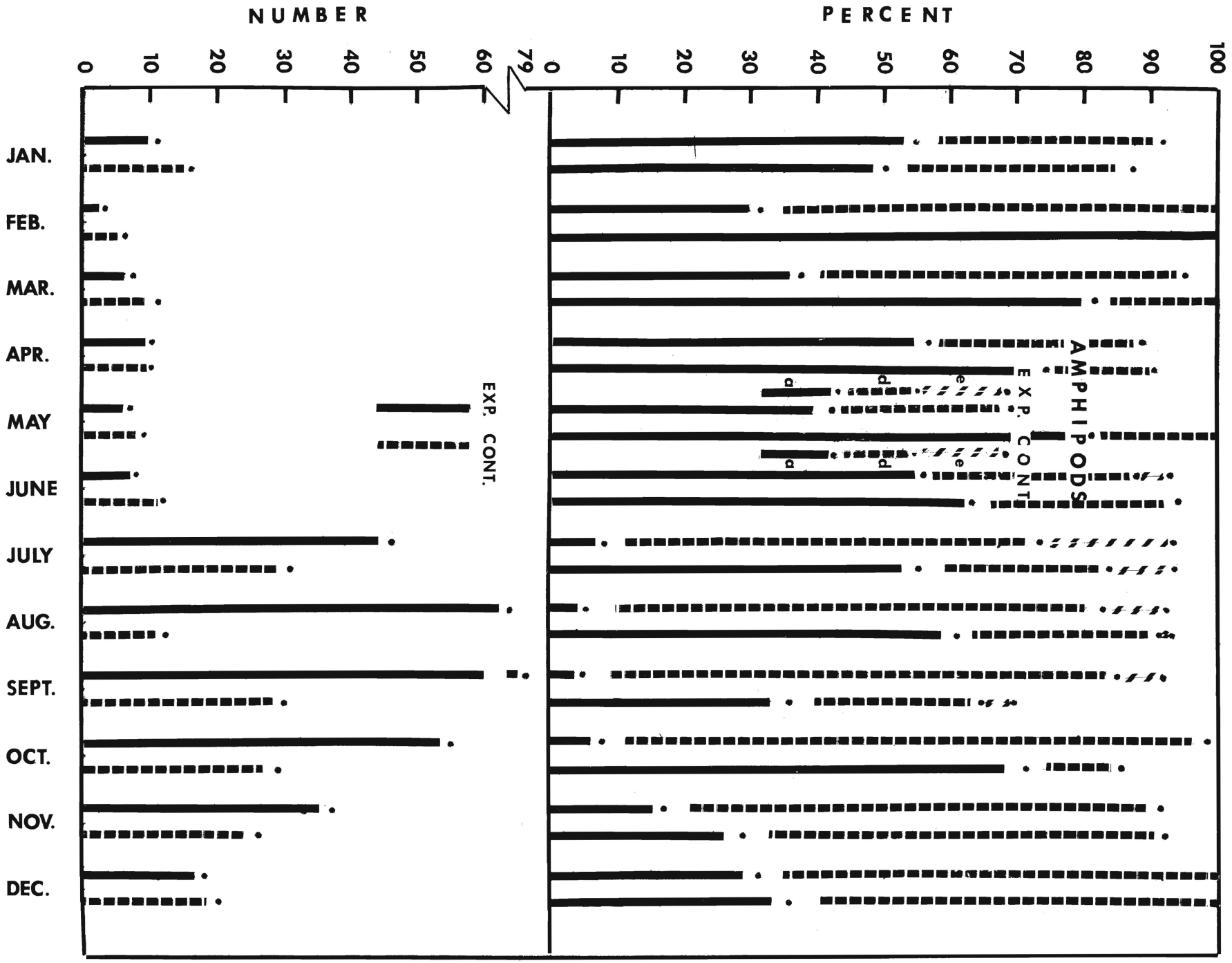

PERCENT
100
90
80
70
60
50
40
30
20
10
0
AMPH
A D E
EXP.
CONT.
NUMBER
104
80
60
40
20
0
AMPHIPODS
EXP. CONT.
JULY
AUG.
SEPT.
1968
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
1969
JAN.
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
1970
JAN.
FEB.
MAR.
APR.
MAY
JUNE
1971

Figure 19. Monthly Average Number of Amphipods Per 165 sq.cm. (one pint), Computed from Months Sampled from 1968 - 1971, and the Monthly Average Percentage of These Comprising Major Amphipod Types A, D and E


NUMBER
PERCENT
0
10
20
30
40
50
60
79
0
10
20
30
40
50
60
70
80
90
100
JAN.
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
EXP. CONT.
AMPHIPODS
EXP. CONT
a
d
e
a
d
e