INDIAN POINT GENERATING STATION ENTRAINMENT AND NEAR FIELD RIVER STUDIES

1978 ANNUAL REPORT

Consolidated Edison Company of New York, Inc.

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and

Power Authority of the State of New York

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Prepared for:

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New York, New York 10003

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TABLE OF CONTENTS

	Page
CHAPTER 1: INTRODUCTION	1-1
1.1 Perspective	1-1
1.2 Scope of Report	1-1
1.2.1 Objectives	1-1
1.2.2 Comparison with Previous Years	1-2
1.3 Format	1-3
CHAPTER 2: SUMMARY	2-1
2.1 Near Field River Study	2-1
2.1.1 Microzooplankton	2-1
2.1.2 Macrozooplankton	2-2
2.1.3 Ichthyoplankton	2-3
2.2 Entrainment Abundance Study	2-4
CHAPTER 3: SITE DESCRIPTION	3-1
3.1 The River	3-1
3.2 The Plant	3-1
CHAPTER 4: METHODS	4-1
4.1 Near Field River Study	4-1
4.1.1 Sampling Stations	4-1
4.1.2 Sampling Procedures	4-1
4.1.2.1 Microzooplankton	4-1
4.1.2.2 Macrozooplankton and Ichthyoplankton	4-4
4.1.2.3 Water Quality Measurements	4-5
4.1.3 Analytical Procedures	4-5
4.2 Entrainment Abundance Study	4-7
4.2.1 Sampling Stations	4-7

TABLE OF CONTENTS (CONT.)

	Page
4.2.2 Sampling Procedures	4-7
4.2.2.1 Sample Collection	4-7
4.2.2.2 Sample Sorting and Processing	4-11
4.2.2.3 Water Quality Measurements	4-11
4.2.3 Analytical Procedures	4-11
CHAPTER 5: RESULTS AND DISCUSSION	5-1
5.1 Near Field River Study	5-1
5.1.1 Microzooplankton	5-1
5.1.1.1 Species Composition	5-1
5.1.1.2 Relative Abundance and Distribution	5-1
5.1.1.3 Analysis of Variance for Selected Microzooplankton Taxa	5-10
5.1.2 Macrozooplankton	5-15
5.1.2.1 Species Composition	5-15
5.1.2.2 Relative Abundance and Distribution	5-22
5.1.2.3 Analysis of Variance for Selected Macrozooplankton Taxa	5-28
5.1.3 Ichthyoplankton	5-31
5.1.3.1 Species Composition	5-31
5.1.3.2 Relative Abundance and Distribution	5-33
5.1.3.3 Analysis of Variance for Striped Bass Early Life Stages	5-48
5.2 Entrainment Abundance Study	5-52
5.2.1 Striped Bass	5-53
5.2.1.1 Eggs	5-53
5.2.1.2 Yolk-Sac Larvae	5-60
5.2.1.3 Post Yolk-Sac Larvae	5-60
5.2.1.4 Juveniles	5-63
5.2.2 *Gammarus* spp.	5-64
5.2.3 *Neomysis americana*	5-64
5.2.4 *Monoculodes edwardsi*	5-72
5.2.5 *Chaoborus punctipennis*	5-72
REFERENCES	

TABLE OF CONTENTS (CONT.)

APPENDIX A. ENTRAINMENT SURVIVAL STUDY, INDIAN POINT GENERATING STATION, 1978

APPENDIX B. RIVER TRANSECT STUDY, INDIAN POINT GENERATING STATION, 1978

APPENDIX C. WATER QUALITY DATA, ENTRAINMENT AND NEAR FIELD RIVER STUDIES, INDIAN POINT GENERATING STATION, 1978

APPENDIX D. ABUNDANCE OF SELECTED TAXA COLLECTED AT STANDARD RIVER STATIONS, INDIAN POINT GENERATING STATION, 1978

APPENDIX E. ANALYSIS OF VARIANCE FOR SELECTED TAXA COLLECTED AT STANDARD RIVER STATIONS, INDIAN POINT GENERATING STATION, 1978

APPENDIX F. ENTRAINMENT ABUNDANCE OF STRIPED BASS EARLY DEVELOPMENTAL STAGES, INDIAN POINT GENERATING STATION, 1978

APPENDIX G. ENTRAINMENT ABUNDANCE OF SELECTED MACROZOOPLANKTON TAXA, INDIAN POINT GENERATING STATION, 1978

APPENDIX H. ENTRAINMENT SURVIVAL OF STRIPED BASS EARLY DEVELOPMENTAL STAGES, INDIAN POINT GENERATING STATION, 1978

APPENDIX I. ENTRAINMENT SURVIVAL OF SELECTED MACROZOOPLANKTON TAXA, INDIAN POINT GENERATING STATION, 1978

APPENDIX J. ABUNDANCE OF STRIPED BASS EARLY DEVELOPMENTAL STAGES AT RIVER TRANSECT STATIONS, INDIAN POINT GENERATING STATION, 1978

LIST OF FIGURES

Number	Title
3-1	Location of the Indian Point Generating Station on the Hudson River Estuary.
3-2	Diagram of the Indian Point Generating Station circulating water system.
3-3	Diagrammatic sketch of Indian Point Generating Station discharge structure.
4-1	River standard station locations in the vicinity of the Indian Point Generating Station.
4-2	Diagram of the Indian Point Generating Station circulating water system showing location of sampling stations.
4-3	Stationary net sampling apparatus used to collect samples at Stations I2, I3, and D1 during the entrainment abundance study conducted at the Indian Point Generating Station, 1978.
5-1	Mean densities of total microzooplankton, crustaceans, and rotifers collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-2	Mean densities of copepod nauplii, copepodids, and copepod adults collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-3	Mean densities of *Acartia tonsa* and *Eurytemora affinis* collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-4	Mean densities of total cladocerans, *Bosmina longirostris*, and *Diaphanosoma brachyurum* collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-5	Day and night mean densities of total macrozooplankton collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-6	Mean densities of four major macrozooplankton taxa collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-7	Mean densities of total ichthyoplankton collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.

LIST OF FIGURES (CONT.)

Number	Title
5-8	Mean densities of striped bass early developmental stages collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-9	Mean densities of white perch early developmental stages collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-10	Mean densities of *Alosa* spp. early developmental stages collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-11	Mean densities of bay anchovy early developmental stages collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-12	Mean densities of Atlantic tomcod early developmental stages collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-13	Mean densities of striped bass early developmental stages collected during the entrainment abundance study, Indian Point Generating Station, 1978.
5-14	Mean densities of striped bass early developmental stages collected at each station during the entrainment abundance study, Indian Point Generating Station, 1978.
5-15	Diel distribution of striped bass early developmental stages collected at Stations I2 and D1 during the entrainment abundance study, Indian Point Generating Station, 1978.
5-16	Mean densities of *Gammarus* spp. collected during the day and during the night during the entrainment abundance study, Indian Point Generating Station, 1978.
5-17	Mean densities of *Gammarus* spp. collected at each station during the entrainment abundance study, Indian Point Generating Station, 1978.
5-18	Diel distribution of *Gammarus* spp. collected at Stations I2 and D1 during the entrainment abundance study, Indian Point Generating Station, 1978.
5-19	Mean densities of *Neomysis americana* collected during the day and during the night during the entrainment abundance study, Indian Point Generating Station, 1978.

LIST OF FIGURES (CONT.)

Number	Title
5-20	Mean densities of *Neomysis americana* collected at each station during the entrainment abundance study, Indian Point Generating Station, 1978.
5-21	Diel distribution of *Neomysis americana* collected at Stations I2 and D1 during the entrainment abundance study, Indian Point Generating Station, 1978.
5-22	Mean densities of *Monoculodes edwardsi* collected during the day and during the night during the entrainment abundance study, Indian Point Generating Station, 1978.
5-23	Mean densities of *Monoculodes edwardsi* collected at each station during the entrainment abundance study, Indian Point Generating Station, 1978.
5-24	Diel distribution of *Monoculodes edwardsi* collected at Stations I2 and D1 during the entrainment abundance study, Indian Point Generating Station, 1978.
5-25	Mean densities of *Chaoborus punctipennis* collected during the day and during the night during the entrainment abundance study, Indian Point Generating Station, 1978.
5-26	Mean densities of *Chaoborus punctipennis* collected at each station during the entrainment abundance study, Indian Point Generating Station, 1978.
5-27	Diel distribution of *Chaoborus punctipennis* collected at Stations I2 and D1 during the entrainment abundance study, Indian Point Generating Station, 1978.

LIST OF TABLES

Number	Title
3-1	Average calculated transit times for cooling water during full flow operation of Indian Point Generating Station--Units 1, 2, and 3 operating individually and simultaneously.
3-2	Estimated cross-sectional flow velocities at various locations in the Indian Point condenser cooling water system.
3-3	Circulating water flow at Unit 1, Indian Point Generating Station, 1978.
3-4	Circulating water flow at Unit 2, Indian Point Generating Station, 1978.
3-5	Circulating water flow at Unit 3, Indian Point Generating Station, 1978.
4-1	Sampling schedule for microzooplankton, macrozooplankton, and ichthyoplankton collections at standard stations in the vicinity of the Indian Point Generating Station, 1978.
4-2	Sampling dates, sampling stations, and unit operation during the 1978 entrainment abundance study at the Indian Point Generating Station, 1978.
5-1	Phylogenetic list of microzooplankton collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-2	Microzooplankton taxa collected at standard river stations in the vicinity of the Indian Point Generating Station, 1971-1978.
5-3	Mean densities and percent composition of microzooplankton collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-4	Mean densities of rotifers, copepods, cladocerans, and total microzooplankton collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-5	Results of analysis of variance on densities of selected microzooplankton taxa collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-6	Results of the Student-Newman-Keuls multiple range test of microzooplankton taxa that exhibited significant differences in abundance among standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-7	Phylogenetic list of macrozooplankton collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.

LIST OF TABLES (CONT.)

Number	Title
5-8	Mean densities and percent composition of macrozooplankton collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-9	Macrozooplankton collected at standard river stations in the vicinity of the Indian Point Generating Station, 1971-1978.
5-10	Mean densities of *Gammarus* spp., *Neomysis americana*, *Monoculodes edwardsi*, *Chaoborus punctipennis*, and total macrozooplankton collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-11	Mean densities of *Gammarus* spp. collected at the standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-12	Mean densities of *Neomysis americana* collected at the standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-13	Mean densities of *Monoculodes edwardsi* collected at the standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-14	Mean densities of *Chaoborus punctipennis* collected at the standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-15	Results of analysis of variance on densities of *Gammarus* spp., *Neomysis americana*, *Monoculodes edwardsi*, and *Chaoborus punctipennis* collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-16	Results of the Student-Newman-Keuls multiple range test on macrozooplankton taxa collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-17	Densities of *Neomysis americana* collected during the day at stations C and D in the vicinity of the Indian Point Generating Station, 10 July through 17 October 1978.
5-18	Common and scientific names of ichthyoplankton taxa collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-19	Mean densities and percent composition of ichthyoplankton collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.

LIST OF TABLES (CONT.)

Number	Title
5-20	Ichthyoplankton taxa collected at standard river stations in the vicinity of the Indian Point Generating Station, 1971-1978.
5-21	Mean densities of five selected ichthyoplankton taxa and total ichthyoplankton collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-22	Length frequency of striped bass collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-23a	Results of analysis of variance on densities of striped bass early developmental stages collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-23b	Results of the Student-Newman-Keuls multiple range test on striped bass yolk-sac larvae collected at the standard river stations in the vicinity of the Indian Point Generating Station, 1978.
5-24	Mean densities of striped bass ichthyoplankton collected at the intakes and discharge of the Indian Point Generating Station, 1978.
5-25	Length frequency of striped bass collected during entrainment abundance sampling at the Indian Point Generating Station, 1978.
5-26	Comparison of diel density estimates of striped bass eggs collected at three sampling depths at the Indian Point Generating Station, 1 June 1978.
5-27	Comparison of diel density estimates of striped bass yolk-sac larvae collected at three sampling depths at the Indian Point Generating Station, 8 June 1978.
5-28	Average density of post yolk-sac larvae collected at the Indian Point Generating Station, 8-22 June 1978.
5-29	Mean density of *Gammarus* spp. collected at the intakes and discharge of the Indian Point Generating Station, 1978.
5-30	Mean density of *Neomysis americana* collected at the intakes and discharge of the Indian Point Generating Station, 1978.
5-31	Mean density of *Monoculodes edwardsi* collected at the intakes and discharge of the Indian Point Generating Station, 1978.
5-32	Mean density of *Chaoborus punctipennis* collected at the intakes and discharge of the Indian Point Generating Station, 1978.

CHAPTER 1: INTRODUCTION

1.1 PERSPECTIVE

The 1978 entrainment and near field river studies described herein are part of a larger, continuing program of studies designed to evaluate the effects of operation of the Indian Point Generating Station on aquatic organisms of the Hudson River estuary. Since the initiation of baseline aquatic surveys in the vicinity of Indian Point a decade ago, the research focus has been expanded and refined to examine specific stresses associated with the plant's condenser cooling water systems as well as the influence of these stresses on the near and far field biological communities.

The emphasis of the initial biological survey, conducted in the Indian Point area from June 1969 through 1970, was to monitor water chemistry and to define the species composition and abundance of aquatic organisms in the vicinity of the power plant. Subsequent to 1970, intensive near field studies have been conducted in the vicinity of Indian Point (river miles 40.0 - 43.7) to determine seasonal, spatial, as well as year-to-year differences in the local distribution, abundance, and composition of various trophic levels--including phytoplankton, microzooplankton, macrozooplankton, benthos, and fish--within the aquatic environs.

During the early 1970s, studies were initiated at the Indian Point plant to examine the impact of specific cooling system effects on Hudson River biota. These studies have included the collection and evaluation of data pertaining to impingement (entrapment) of organisms on plant intake screens, and entrainment (i.e., passage of organisms through the condenser cooling water system). Experiments have also been conducted to assess the effects of exposure of organisms to elevated temperatures or chemical additives experienced during entrainment through the plant's cooling water systems.

In addition to site specific research relative to the Indian Point plant, Consolidated Edison Company of New York, Inc. (Con Edison) began a comprehensive, far field study program in 1973 to define the distribution and abundance of various life stages of Hudson River fish species from the George Washington Bridge (river mile 12) to the Troy Dam (river mile 153). This program, which has remained ongoing through 1979 (spanning a period of seven consecutive years to date), was specifically designed to gather the information necessary to evaluate the combined effects of the Indian Point plant and other power plants in the mid-Hudson area on fisheries resources of the estuary.

1.2 SCOPE OF REPORT

1.2.1 Objectives

Within the broad framework of research described above, this report specifically addresses the results of studies conducted in 1978 by Ecological Analysts, Inc. (EA) to evaluate the effects of the Indian Point plant on Hudson River organisms subject to entrainment. These studies represent the continuation of a research program--conducted from 1971 through 1977 by the New York University Medical Center (NYU)--that has historically utilized plankton nets as the primary collection gear; results for the study years

1971 through 1976 were reported in NYU (1973, 1974, 1976a, 1976b, 1976c, 1977 and 1978). Additional entrainment studies using pump/larval table collection systems were conducted at the Indian Point Plant by Ecological Analysts, Inc. during 1977 and 1978, and are presented in EA 1978a, 1979.

The scope of the 1978 research, as described herein, consisted of two principal study efforts, the near field river study and the entrainment abundance study. The objectives of these study efforts were as follows:

1. The near field river study was conducted to define the species composition, abundance, and distribution of microzooplankton, macrozooplankton, and ichthyoplankton in the vicinity of the Indian Point plant. Plankton tows were conducted at seven standard stations in the Hudson River (river miles 40.0 - 43.7) during the day and at night. Data were analyzed to examine diurnal and seasonal variations in abundance within the near field area, as well as differences in the abundances of selected taxa among stations.

2. The entrainment abundance study was designed to determine diurnal variations in the densities of selected organisms (i.e., striped bass early life stages, and the macrozooplankton taxa Gammarus spp., Neomysis americana, Monoculodes edwardsi and Chaoborus punctipennis) entrained by the Indian Point plant's cooling water systems. Sampling was conducted using stationary plankton nets located at the plant intakes and in the discharge canal, and abundance estimates were compared among intake and discharge stations.

Ancillary studies included determination of the initial and extended survival of selected organisms collected in the sampling nets at the plant intake and discharge stations; and sampling at transect stations to provide abundance information on striped bass early life stages in the immediate vicinity of the Indian Point plant for comparison with striped bass abundance data collected at plant intake and discharge stations.

1.2.2 Comparisons with Previous Years

In order to maintain year-to-year comparability between study efforts, considerable emphasis during the 1978 studies was directed towards applying sampling designs, sampling gear, and collection techniques in a manner consistent with those used by NYU in recent years. Comparisons between the results of the 1978 studies and those of previous years (Chapter 2: Summary) were, nonetheless, limited by year-to-year differences in unit operating conditions at the Indian Point plant as well as variations in the sampling methodologies employed over the study years. No comparisons could be made between the 1978 and 1977 studies because the analysis of 1977 data has not been completed.

The overall duration of entrainment and near field river studies at the Indian Point plant (1971 through 1978) overlays a period of varying unit operation. Only Unit 1 was operational during 1971 and 1972, Unit 2 became operational in October 1973 (but did not begin full commercial operation until June 1974), Unit 1 was taken out of commercial operation in October 1974, and Unit 3 began full commercial operation at the end of August 1976. Adding further complications are the maintenance and unscheduled outages for operational units that

ve often occurred during the peak entrainment season (May through August). ch outages have not occurred at consistent times from year to year.

For the primary study efforts conducted in 1978, greatest comparability among study years, with respect to sampling methodologies, was apparent for the near field river study. Over the eight-year span of the study program (1971 through 1978), sampling has been conducted at standard station locations, using similar methodologies, during all years except 1973. River sampling was modified in 1973 to include only four stations offshore of the Indian Point plant when it became apparent that both Unit 1 and Unit 2 would be offline during much of the sampling season.

Studies to examine the abundance and survival of selected ichthyoplankton and macrozooplankton entrained by the Indian Point plant were initiated in 1972. Subsequently, abundance sampling at plant stations was conducted from 1974 through 1978, whereas survival sampling was conducted from 1974 through 1975, and from 1977 through 1978.* Over the course of these studies, variation in sampling stations, as well as the extent and frequency of sampling, has occurred as the result of differences in unit operating conditions from one year to the next. In addition, flowmeters used to record sample volumes in 1972 were removed from the nets at the plant stations and replaced with velocity-reduction cones during 1974 and 1975 in an attempt to reduce sampling mortality; sample volumes in 1974 and 1975 were estimated on the basis of plant operating capacities at the time of collection. It was subsequently determined that the velocity-reduction cones were not effective in reducing rtality caused by the collection nets (NYU 1978). In light of this, the locity reduction cones were discontinued and flowmeters were again used during the remaining study years (1976 through 1978).

River transect sampling was initiated in 1976 and has continued since that time. However, because of the unavailability of additional sampling vessels in 1976, transect sampling during that year was restricted to only the east transect station, in contrast to the three-station sampling effort conducted in 1977 and 1978.

1.3 FORMAT

Progress reports for previous study years (NYU 1973, 1974, 1976, 1977, 1978) were formatted such that specific chapters were devoted to each major biological group studied (e.g., microzooplankton, macrozooplankton, ichthyoplankton, etc.). This report, however, follows the format of presenting the site description, methods and materials, and results in separate text chapters (Chapters 3, 4, and 5, respectively). Chapter 5 is further divided into two major sections which address the findings of the 1978 studies in relation to the principal study efforts (i.e., Section 5.1--NEAR FIELD RIVER STUDY

*Entrainment sampling was discontinued at plant stations in 1973 because both Units 1 and 2 were offline during most of the year (Unit 3 was under construction). In 1976, Unit 1 was not in commercial operation, Unit 2 operated sporadically as a result of shutdowns for maintenance and repair, and Unit 3 did not begin full commercial operation until 30 August. Consequently, entrainment survival studies were not conducted in 1976, and entrainment abundance sampling was restricted to the Unit 3 intake.

and Section 5.2--ENTRAINMENT ABUNDANCE STUDY). The report summary (Chapter 2) presents a synopsis of the 1978 results for the principal study efforts and compares these results, where appropriate, with those of previous study years. The results of ancillary studies, as well as supportive data relative to all study efforts are presented in the appendixes. Specifically, Appendix A presents the results of entrainment survival determinations for selected taxa collected in sampling nets at the plant intake and discharge stations, and compares the striped bass survival results with survival information obtained during 1978 using pump/larval table collection systems (EA 1979). Appendix B addresses the abundance of striped bass collected during river transect sampling, and compares these data with striped bass abundance estimates based upon concurrent net collections at plant intake and discharge stations. Appendixes C through J provide supportive water chemistry, abundance, and analytical test data for all 1978 study efforts.

CHAPTER 2: SUMMARY

This progress report details the results of studies conducted in 1978 by Ecological Analysts, Inc. (EA) to examine the effects of the Indian Point Generating Station on Hudson River organisms subject to entrainment through the condenser cooling water systems. These studies are a continuation of a research program initiated in 1971 and conducted through 1977 by the New York University Medical Center (NYU). Consistent with previous years of this program, the 1978 studies involved the collection and investigation of entrainable organisms at plant and river stations using plankton nets as the primary collection gear. Following is a summary of the 1978 study results, presented in context with findings reported for previous study years (NYU 1973, 1974, 1976a, 1976b, 1976c, 1977, and 1978).

2.1 NEAR FIELD RIVER STUDY

Sampling was conducted at seven standard river stations located between river miles 40.0 and 43.7. Two of these stations were located upstream of the Indian Point plant, two stations were located downstream of the plant, and three stations were located in the immediate vicinity of the plant. Microzooplankton were sampled from the upper 10 m of the water column during the day and at night, at each station every 2 weeks from May through November 1978. Macrozooplankton and ichthyoplankton were sampled concurrently at three sampling depths per station (i.e., surface, middepth, and bottom). Macrozooplankton samples were collected during the day and at night at each station and depth every 2 weeks from May through November 1978 (coincident with microzooplankton sampling). Day and night ichthyoplankton samples were collected at each station and depth, monthly in March and April, weekly from May through July, and monthly from August through December 1978.

2.1.1 Microzooplankton

River microzooplankton populations were dominated in 1978 by crustaceans and rotifers (Section 5.1.1.2). The most abundant species were (in order of decreasing abundance) the estuarine copepods, *Eurytemora affinis* and *Acartia tonsa*, and the rotifers *Keratella cochlearis*, *Synchaeta* spp., and *Polyarthra* spp. These five species, an unidentifid rotifer, and total copepod nauplii acounted for 90.6 percent of the total microzooplankton catch (Section 5.1.1.2.1).

Microzooplankton were most abundant in the late spring and early summer months (June and July), with peak mean densities exceeding 100 organisms per liter in July (Figure 5-1). Copepods accounted for the majority of microzooplankton taxa collected throughout the year, although rotifers dominated collections on two sampling dates in the spring. The abundance of both dominant and subdominant microzooplankton taxa varied with season, reflecting the seasonal progression of temperature in the river and natural succession characteristic of microzooplankton communities. In addition, microzooplankton densities were typically greater during the day than at night (Section 5.1.1.2.1), as was also observed in study results for 1974 and 1976.

The abundances of microzooplankton taxa in 1978 were similar among most of the seven sampling stations (Section 5.1.1.3). Station-to-station differenc were primarily restricted to differences between the northernmost (upstream) stations and the southernmost (downstream) stations, and were primarily associated with longitudinal variations in salinity within the study area. Densities of microzooplankton taxa at the three sampling stations located closest to the Indian Point plant were similar to densities observed at all other standard river stations with the occasional exception of the most extreme downstream station.

The structure of the microzooplankton community in 1978 was similar to that defined for 1971 through 1976, thus indicating no observable effect of the Indian Point plant on microzooplankton populations in the near field area (Table 5-2). The copepods Acartia tonsa and Eurytemora affinis have consistently dominated microzooplankton collections throughout previous study years, and were also the dominant microzooplankton taxa in 1978. The most abundant cladocerans--both in 1978 and in previous study years--were Bosmina longirostris in May and June and Diaphanosoma brachyurum in July, August, and September. Dominance among the rotifers has shifted since 1971 but this variation was apparently unrelated to plant operations: Brachionus angularis and Notholca acuminata were dominant during the earlier study years (1971 and 1974), whereas Keratella spp. has been the dominant rotifer during recent years (1976 and 1978). Although the total number of microzooplankton taxa found in 1978 was greater than in previous years (see Table 5-2), the species composition of the more abundant forms remained essentially unchanged.

2.1.2 Macrozooplankton

Macrozooplankton collections in 1978 were dominated by (in order of decreasing abundance) Gammarus spp., Neomysis americana, Monoculodes edwardsi, and Chaoborus punctipennis (Table 5-8). These four species constituted 95.7 percent of the average macrozooplankton catch. Gammarus spp., N. americana, and M. edwardsi were also the dominant macrozooplankton species in the vicinity of the Indian Point plant during all previous study years (1971 through 1976).

In 1978, river macrozooplankton were most abundant during late May and early June, and occurred in lowest numbers during late summer and early fall (Section 5.1.2.2.1). The abundances of the major macrozooplankton species were greater at night than during the day, and were also greater at the bottom than at the surface or middepth sampling locations. These patterns of macrozooplankton abundance have remained consistent throughout all study years.

The abundance and distribution of dominant macrozooplankton taxa in the vicinity of Indian Point during 1978 was typically influenced by salinity and/or hydrologic factors related to saltwater intrusion (Section 5.1.2.2). Gammarus spp. and Chaoborus punctipennis were generally most abundant when the water was fresh, or nearly so (i.e., less than about 2 ppt). The occurrence of Neomysis americana, on the other hand, was restricted to periods when the salt front extended into the study area. The abundance of Monoculodes edwardsi also appeared to be related to salinity conditions in the near field area; abundances were highest when salinity ranged from 0.2 to 3 ppt. The association between shifts in species composition within the macrozooplankton

mmunity and salinity pulses in the river has consistently been observed in e vicinity of Indian Point throughout previous study years.

Statistical analyses of macrozooplankton data collected at standard river stations in 1978 revealed significant differences among stations, sampling depths, dates, and day/night collections (Section 5.1.2.3). Station-to-station differences in macrozooplankton abundance have also been observed in previous study years, but no consistent pattern of species shifts or decline in abundance of any dominant species has occurred among the stations over the years, indicating that operation of the Indian Point plant has had no appreciable influence on the macrozooplankton community in the near field area.

2.1.3 Ichthyoplankton

Populations of ichthyoplankton in the vicinity of Indian Point during 1978 (Section 5.1.3.2) were dominated by Alosa spp., striped bass, and white perch during May and June; collections during July consisted almost entirely of bay anchovy. Atlantic tomcod, a winter-spawning species, was the only ichthyoplankton taxon collected in the near field area in March and April. These five species constituted 95.3 percent of the average ichthyoplankton catch throughout the sampling season. Bay anchovy early life stages were most abundant, accounting for 64.5 percent of the average catch. The seasonal occurrences of the various species and life stages were largely associated with temperature and/or salinity, as observed in previous years.

he species composition and abundance of ichthyoplankton at river stations in e vicinity of Indian Point were similar between 1978 and previous study years (1971 through 1976). The four most abundant ichthyoplankton species collected in 1978--bay anchovy, Alosa spp., striped bass, and white perch--were also the most abundant ichthyoplankton species collected each year since 1971. Bay anchovy was consistently the predominant species collected in all years. Overall, the species composition was consistent through the years, although there was considerable fluctuation in the annual presence of the early life stages of many species. Of the 27 ichthyoplankton taxa collected at standard river stations since 1971 (including 1978) 12 taxa were collected during each of the 7 study years, 6 taxa were collected in low abundance in 3 or more years, and 9 taxa were incidental and only occurred during 1 or 2 years. Thus, the ichthyoplankton community in the Indian Point area has remained diverse over the study years, and no substantial change in abundance or species composition has occurred.

Statistical analysis of the abundance of striped bass early life stages collected in 1978 (with the exception of juveniles, which were collected too infrequently for analysis) indicated significant differences among sampling depths, day/night collections, and date for all life stages (Section 5.1.3.3). In general, striped bass ichthyoplankton were concentrated in middepth and bottom samples during the day, but were more evenly distributed throughout the water column at night. Significant differences among stations were observed only for yolk-sac larvae, with highest abundances generally occurring at the northernmost stations and lowest abundances occurring at the southernmost stations. The abundance of yolk-sac larvae in the immediate vicinity of he Indian Point plant was similar to that observed at most other sampling stations in the near field area.

2.2 ENTRAINMENT ABUNDANCE STUDY

Entrainment abundance at the Indian Point plant was examined for striped bass (all early life stages) and four selected macrozooplankton taxa, including Gammarus spp., Neomysis americana, Monoculodes edwardsi, and Chaoborus punctipennis. Sampling was conducted at Intake Station I2 and Discharge Station D1 when Unit 2 was online, and at Intake Station I3 when Unit 3 was online. Samples were collected and analyzed monthly in March and April, weekly from May through July, and monthly from August through December. Samples were taken concurrently at three sampling depths--surface, middepth, and bottom--every 2 hours during a 12-hour sampling effort. Each sampling effort was scheduled such that the fourth collection period occurred approximately at dusk.

Peak entrainment of striped bass in 1978 (Section 5.2.1) occurred during late May and June when the mean density of all early life stages combined during each 12-hour sampling effort typically exceeded 300 per 1,000 m^3 (averaged over all sampling depths, collection periods, and stations). The most abundant life stage collected was post yolk-sac larva, followed by (in order of decreasing abundance) egg, yolk-sac larva, and juvenile life stages. There was no distinct diel trend in the abundance of striped bass yolk-sac larvae or eggs; however, post yolk-sac larvae were generally more abundant at night than during the day or at dusk (Section 5.2.1.3).

The occurrence of striped bass early life stages at the Indian Point plant in 1978 was comparable to that observed in 1974 and 1975. Peak entrainment of striped bass eggs in all three study years occurred in the latter part of May, where peak entrainment of yolk-sac and post yolk-sac larvae was observed at the end of May and early June, respectively. Striped bass juveniles were the least abundant lifestage entrained during all three study years.

The occurrence and abundance of the four major macrozooplankton taxa collected at the intake and discharge stations of the Indian Point plant in 1978 varied according to season and salinity. Gammarus spp. was present throughout the sampling season (March-December), but was most abundant during the spring and early summer (Section 5.2.2). The occurrence of the mysid shrimp, Neomysis americana, and the estuarine amphipod, Monoculodes edwardsi, in entrainment abundance samples generally corresponded to the intrusion of the salt front into the Indian Point area; peak entrainment abundances of these two macrozooplankton taxa were observed during the summer and fall months (Section 5.2.3 and 5.2.4). Aquatic life stages of Chaoborus punctipennis were predominantly collected in entrainment samples during June, July, and August (Section 5.2.5). Gammarus spp. dominated entrainment abundance collections during the spring, where N. americana was predominant during the remainder of the sampling season. Entrainment abundances of macrozooplankton were typically greater at night than during the day. Abundances of all four major taxa were highest during the fifth collection period, approximately 2 hours after dusk.

CHAPTER 3: SITE DESCRIPTION

3.1 THE RIVER

The Indian Point Generating Station is located on the east bank of the Hudson River, between Peekskill and Haverstraw bays, near the town of Buchanan, New York. The plant is 69 river kilometers (43 mi) north of the Battery in New York City (Figure 3-1). In the vicinity of the Indian Point plant, the Hudson River has a surface width of approximately 1,524 m (5,000 ft) and a cross-sectional area of approximately 14,865 m^2 (160,000 ft^2). Within 60 m (200 ft) of the plant, river depths range from about 3 to 12 m (10 to 40 ft) below mean sea level.

Flow rates in this section of the river are controlled predominantly by the tides. Mean tidal flows are on the order of 3,964 m^3 per second (140,000 cfs), whereas freshwater flows typically range from about 156 m^3 per second (5,500 cfs) in August to about 906 m^3 per second (32,000 cfs) in April (Con Edison 1977a, p. 2-1).

Seasonal trends in salinity are controlled primarily by freshwater flow. The salt front (0.01 ppt salinity) generally remains below Indian Point during the months of March, April, and May, when freshwater flows of more than 566 m^3 per second (20,000 cfs) are normally present. During the period of low runoff, (generally July through October [Con Edison 1977a, Table 2-2]), the salinity in the vicinity of Indian Point may fluctuate rapidly as a function of tidal stage and height.

Ambient river temperatures in the Indian Point area typically range from 0 to 27 C over the course of a year (Con Edison 1977a, Table 2-3).

3.2 THE PLANT

The Indian Point Generating Station consists of three nuclear-fueled electric generating units. Unit 1, owned by Con Edison, has not been operated for commercial production since October 1974, although its circulating water and service water pumps are operated occasionally. Unit 2, owned and operated by Con Edison, has been in operation since 28 September 1973 and has a net rated capacity of 873 MWe. Unit 3, owned and operated by the Power Authority of the State of New York, has been in operation since 30 August 1976 and has a net rated capacity of 965 MWe. All three units use Hudson River water for once-through cooling.

Each unit has a separate shoreline intake structure for the withdrawal of water from the Hudson River (Figure 3-2). The intake structure for Unit 1 has four rectangular openings that extend 8.0 m (26 ft) below mean low water. The intake structures for Units 2 and 3 each have six intake openings extending 8.2 m (27 ft) below mean low water. The intakes to Units 1 and 2 are equipped with fixed screens at the entrance to the intake bays and vertical traveling screens located behind the fixed screens, whereas the intake to Unit 3 has only vertical traveling screens at the entrance to the intake bays. All screens are 9.5 mm (0.375 in.) square mesh, with the exception of an experimental fine-mesh (2.5 mm) traveling screen located at Unit 1 intake.

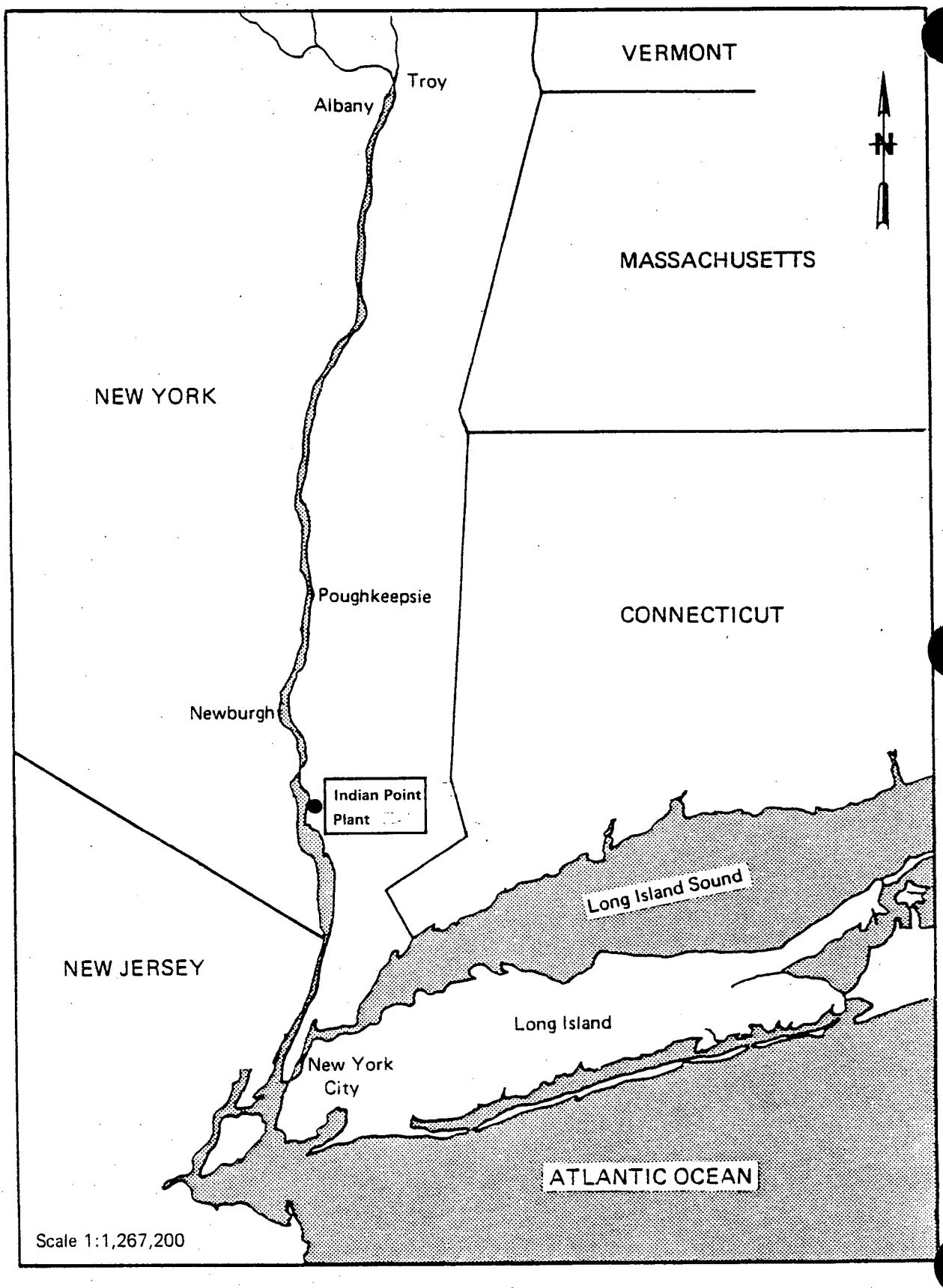

Figure 3-1. Location of the Indian Point Generating Station on the Hudson River Estuary.

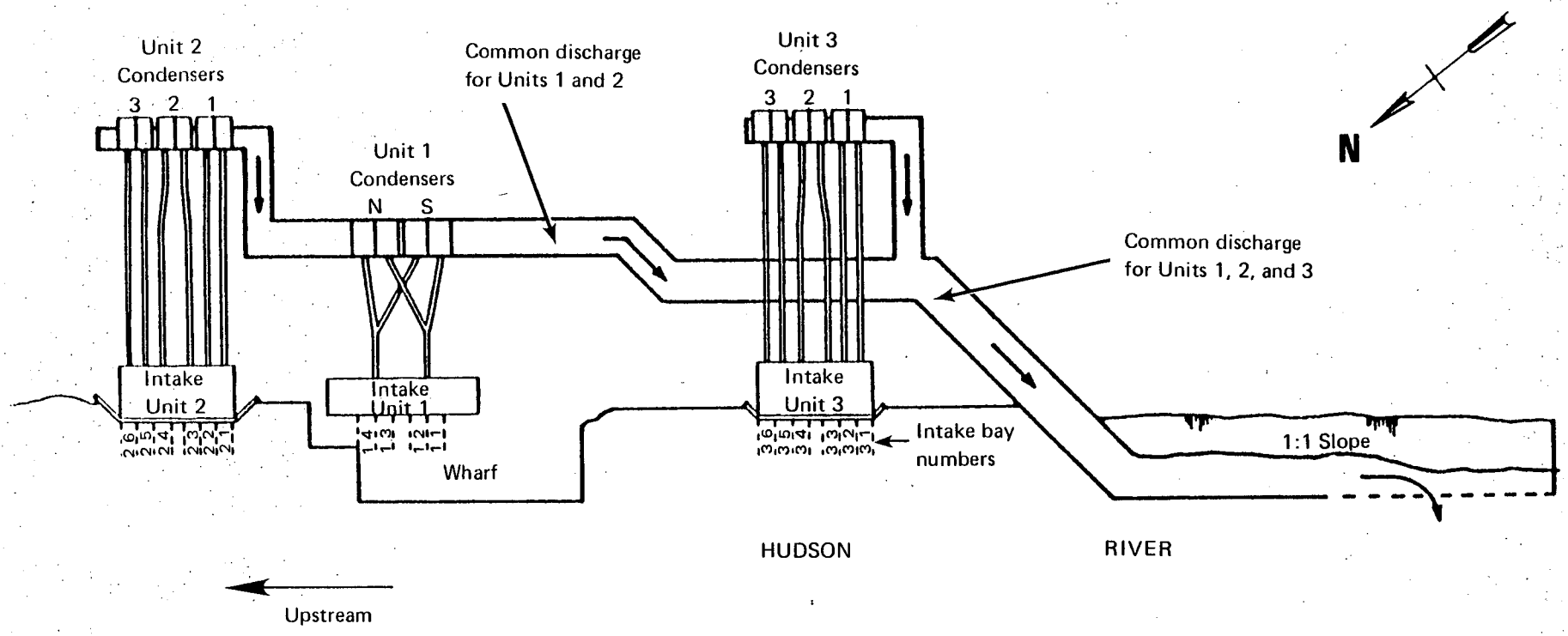

Figure 3-2. Diagram of the Indian Point Generating Station circulating water system (adapted from Con Edison 1977b).

Circulating water pumps with rated capacities of 530 m^3 per minute (140,000 gpm) are used to pump Hudson River water through the condenser cooling system of each unit. Unit 1 has two circulating water pumps with a total rated capacity of 1,060 m^3 per minute (280,000 gpm), and two service water pumps with a combined rated capacity of 144 m^3 per minute (38,000 gpm). Units 2 and 3 each have six circulating water pumps that withdraw water from separate intake bays (Figure 3-2). The circulating water systems for Units 2 and 3 are designed to operate at either 100 or 60 percent flow. When the ambient water temperature is above 4.4 C (40 F) (spring through fall), the circulating pumps are operated so that the rated maximum cooling water flow for each unit is 3,178 m^3 per minute (840,000 gpm). During the winter, 40 percent of the cooling water is returned to the circulating pumps without passing through the condenser, reducing the rated maximum intake flow for each unit to 1,908 m^3 per minute (504,000 gpm). Service water for Units 2 and 3 is drawn through a separate intake forebay located at the center of each intake; the rated maximum total service water flow for Units 2 and 3 is 114 m^3 per minute (30,000 gpm).

The cooling water and service water from all three units flow into a common discharge canal. The combined discharge is returned to the Hudson River via an outfall structure (Figure 3-3) located downstream of Unit 3. The outfall structure consists of 12 ports submerged to a depth of 3.6 m (12 ft from center of port to water surface) at mean low water.

Calculated transit times of cooling water traveling from intake to river outfall for Units 2 and 3, when operating at full pumping capacity is 9.7 minutes for Unit 2 and 5.6 minutes for Unit 3. The calculated transit time from the intake to the condensers is about 1.5 minutes, and the calculated transit time through the condensers is 0.14 minutes for both units. Thus, much of the total transit time through the cooling water systems of Unit 2 and Unit 3 occurs in the discharge canal. Because the discharge canal receives cooling water from all three units, transit times through the canal are dependent upon the total circulating water flow through all units combined. Calculated transit times from the intake to the common discharge ports for various unit operational conditions are summarized in Table 3-1.

Estimated cross-sectional velocities of the river cooling water vary at different locations within the Indian Point plant condenser cooling water system (Table 3-2). Estimated flow velocities are lowest at the intakes, ranging from 0.57 ft/sec at Unit 1 (when circulating water pumps are operating), to 0.84 ft/sec at the intakes of Units 2 and 3. Estimated water velocities at various locations along the common discharge canal are consistently higher than velocities at the intakes, and vary according to the number of circulating pumps operating at each unit. At the submerged discharge ports, however, the estimated velocity of cooling water is 10.0 ft/sec, regardless of the number of units operating.

The temperature rise (delta-T) encountered by organisms passing through the condenser cooling systems of the Indian Point plant depends on the cooling water flow rates and levels of power output (Con Edison 1977a, Tables 1-13 and 1-14). At Unit 2, with six pumps operating at full flow and the unit at 100 percent capacity, the predicted condenser temperature rise ranges from 8.8 to 8.9 C (15.8-16.1 F), depending upon river temperature. During full capacity winter operation, with Unit 2 circulating pumps operating at 60

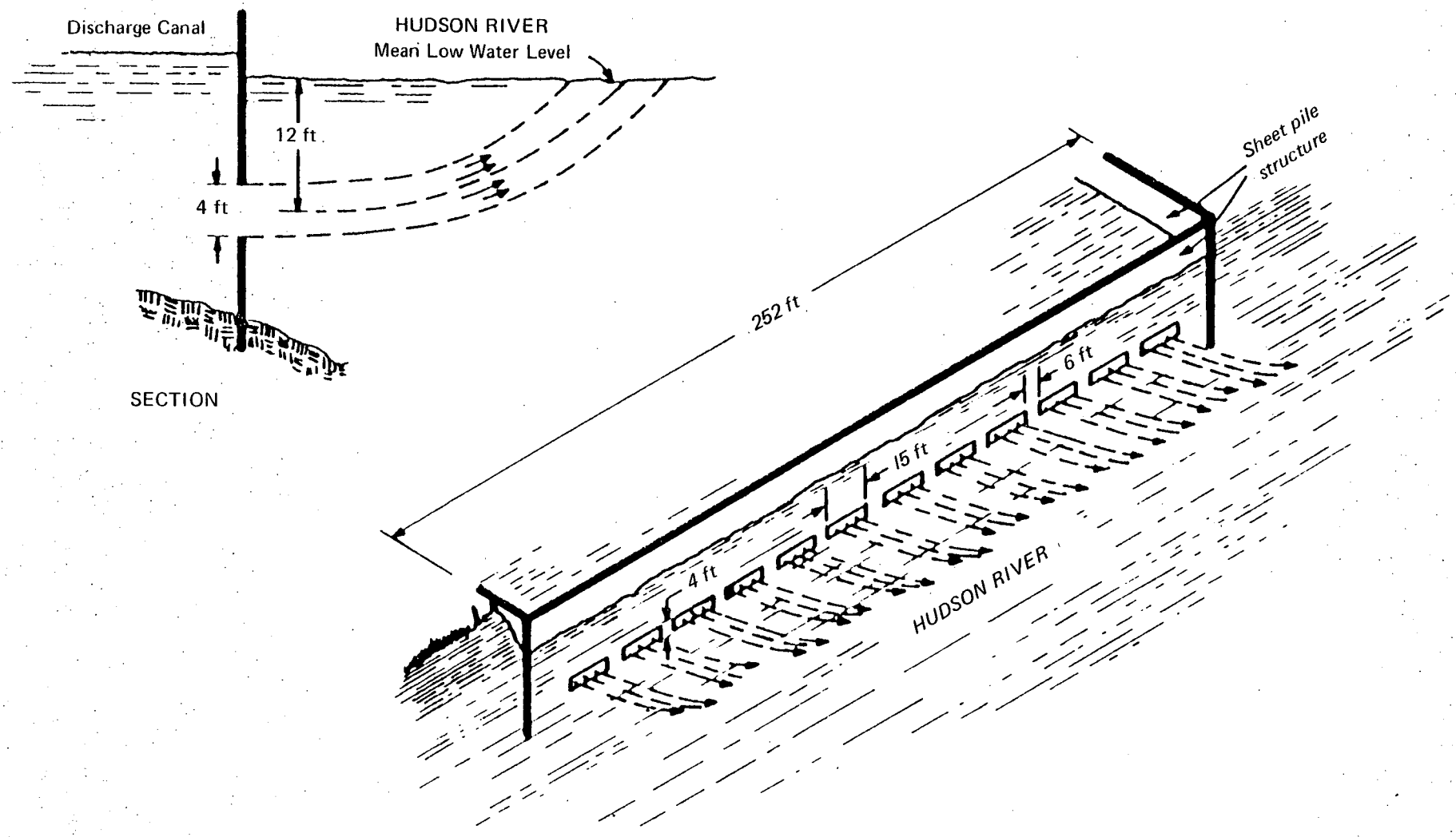

Figure 3-3. Diagrammatic sketch of Indian Point Generating Station discharge structure (adapted from Con Edison 1974).

TABLE 3-1 AVERAGE CALCULATED TRANSIT TIMES FOR COOLING WATER DURING FULL FLOW OPERATION OF INDIAN POINT GENERATING STATION--UNITS 1, 2 AND 3 OPERATING INDIVIDUALLY AND SIMULTANEOUSLY

Individual Operation (time in minutes)[a]

	Unit 1	Unit 2	Unit 3
Intake to Common Discharge Ports	33.23	12.85	8.77

Simultaneous Operation of Units 2 and 3[b]
(Unit 1 not operating)

Unit 2 Intake to Common Discharge Ports (time in minutes)

Circulating Pumps Operating at Unit 3	Circulating Pumps Operating at Unit 2			
	3	4	5	6
3	17.7	14.4	12.3	10.8
4	16.8	13.7	11.7	10.3
5	16.2	13.2	11.3	10.0
6	15.6	12.8	11.0	9.7

Unit 3 Intake to Common Discharge Ports (time in minutes)

Circulating Pumps Operating at Unit 3	Circulating Pumps Operating at Unit 2			
	3	4	5	6
3	9.6	8.3	7.4	6.7
4	8.7	7.6	6.8	6.3
5	8.0	7.1	6.4	5.9
6	7.5	6.7	6.1	5.6

(a) Source: NYU 1978, Table 1-1.
(b) Source: Personal Communication; Consolidated Edison Company of New York, Inc., 10 January 1980.

Note: Calculated transit times are based on pumps operating at 100 percent flow (312 cfs); calculated transit time through condenser: 0.14 minutes.

percent flow capacity (i.e., 40 percent recirculation), the predicted condenser temperature rise is approximately 14.7 C (26.5 F). At Unit 3, the predicted condenser temperature rise ranges from 9.5 to 9.7 C (17.1-17.4 F) for 100 percent capacity with six pumps operating at full flow; during winter operation, the predicted temperature rise is approximately 16.1 C (29 F). The higher predicted condenser temperature rise for Unit 3, compared to that for Unit 2, is due to the fact that Unit 3 has a higher rated generated capacity than Unit 2, but uses the same volume of cooling water.

During the 1978 sampling season (March through December), Unit 2 was not in operation from 1 March to 27 May, and Unit 3 did not operate from 8 June to 17 August or from 8 to 13 December. Although Unit 1 was not in operation during the sampling season, the circulating pumps were operated periodically. A summary of the total estimated water flow (service and cooling water) through all three units during the 1978 sampling season is presented in Tables 3-3, 3-4, and 3-5.

TABLE 3-2 ESTIMATED CROSS-SECTIONAL FLOW VELOCITIES AT VARIOUS LOCATIONS IN THE INDIAN POINT CONDENSER COOLING WATER SYSTEM[a]

Location	Flow Velocity (feet per second)						
	Generating Units Operational						
	1	2	3	1+2	1+3	2+3	1+2+3
Intakes							
Unit 1	0.57	--	--	--	--	--	--
Unit 2	--	0.84	--	--	--	--	--
Unit 3	--	--	0.84	--	--	--	--
Discharge Canal							
Discharge of Units 1 and 2[b]	1.03	2.82	--	3.85	--	--	--
Discharge of Units 1, 2, and 3[b]	0.79	2.17	2.17	2.97	2.97	4.35	5.14
Discharge Ports[c]	10.0	10.0	10.0	10.0	10.0	10.0	10.0

(a) Flow velocities presented are based on unit operation at 100 percent of design flow at mean tide level in the Hudson River. Velocities decrease by 40 percent when the units are operating at 60 percent of design flow.
(b) See Figure 3-2 for discharge locations.
(c) Passage of water through the submerged discharge ports during various plant operational modes is regulated to maintain a constant velocity.

Source: NYU (1978).

TABLE 3-3 CIRCULATING WATER FLOW (INCLUDING SERVICE WATER) AT UNIT 1, INDIAN POINT GENERATING STATION, 1978

	Estimated Circulating Water Flow (Million Gallons per Day)											
Day	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	184	27	0	27	25	25	27	229	324	229	27	27
2	184	27	0	27	25	25	27	229	229	229	58	27
3	79	27	0	27	25	25	27	229	229	229	98	27
4	27	27	0	27	25	25	27	229	229	229	27	27
5	27	27	0	27	25	25	158	229	229	229	27	32
6	27	27	0	27	25	223	229	229	229	229	27	50
7	27	27	0	26	25	154	120	162	289	229	16	50
8	27	27	0	25	25	25	27	27	431	229	4	50
9	27	27	0	25	25	25	27	221	431	229	27	50
10	27	27	0	25	25	25	27	229	431	229	148	50
11	27	27	0	25	25	122	27	229	431	229	199	50
12	27	27	0	25	27	32	27	229	431	229	27	40
13	27	27	0	100	27	27	66	229	431	229	27	59
14	27	27	0	181	27	118	27	229	431	229	27	27
15	27	27	0	181	27	213	27	229	431	229	27	27
16	27	27	0	181	27	27	27	229	308	361	27	27
17	27	27	0	181	27	27	86	229	27	431	27	27
18	27	27	0	181	27	27	229	229	140	431	27	27
19	27	27	0	181	46	27	229	229	229	431	27	27
20	27	27	0	181	27	27	229	229	229	431	27	27
21	27	27	0	181	27	27	231	229	229	431	27	27
22	27	27	0	181	25	27	233	229	229	431	27	27
23	27	27	0	181	25	27	229	229	229	431	27	27
24	27	27	0	91	25	27	229	229	229	431	27	27
25	27	27	0	25	25	27	229	229	229	431	27	27
26	27	27	0	25	25	27	229	229	229	431	27	27
27	27	27	0	25	25	27	229	229	229	431	27	27
28	27	27	0	25	25	27	174	346	229	431	27	27
29	27		0	25	25	27	27	431	229	431	27	27
30	27		0	25	25	27	27	431	229	431	27	27
31	27		0		25		102	431		293		27

Source: Con Edison 1979.

TABLE 3-4 CIRCULATING WATER FLOW (INCLUDING SERVICE WATER) AT UNIT 2, INDIAN POINT GENERATING STATION, 1978

	Estimated Circulating Water Flow (Million Gallons per Day)											
Day	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	747	626	0	14	14	1,246	1,253	1,253	1,158	614	1,238	262
2	747	626	0	14	14	1,246	1,253	1,253	1,253	850	1,181	641
3	747	626	0	14	14	1,246	1,253	1,253	1,253	717	1,094	936
4	747	626	0	14	14	1,246	1,253	1,253	1,253	588	1,238	1,060
5	747	626	0	14	14	1,246	1,253	1,253	1,253	346	1,195	1,151
6	747	634	0	14	14	1,246	1,253	1,196	1,253	628	835	1,030
7	747	634	0	14	16	1,246	1,253	1,253	1,253	1,049	778	1,151
8	747	634	0	14	26	1,246	1,253	1,251	1,253	1,051	850	1,201
9	752	634	0	14	29	1,246	1,253	1,253	1,151	1,051	1,238	1,231
10	728	634	0	14	24	1,246	1,253	1,253	1,253	1,136	1,238	1,237
11	755	634	0	14	22	1,246	1,253	1,253	1,102	1,253	1,238	1,238
12	677	634	0	14	22	1,246	1,253	1,253	959	1,253	1,238	1,238
13	634	496	0	14	22	1,246	1,253	1,253	960	1,252	1,238	1,238
14	634	194	0	14	22	1,246	1,200	1,253	982	1,251	1,238	1,238
15	634	150	0	14	28	1,246	1,051	1,253	1,051	1,253	1,238	1,224
16	634	150	0	14	22	1,246	1,229	1,229	744	1,182	1,238	1,233
17	634	101	0	14	22	1,246	1,253	1,186	346	1,253	1,195	[illegible]
18	634	29	0	14	22	1,246	1,253	1,239	245	1,253	979	[illegible]
19	634	29	0	14	22	1,246	1,253	1,225	245	1,248	907	[illegible]
20	633	29	0	14	34	1,246	1,251	1,253	245	1,250	1,238	674
21	619	29	0	14	227	1,246	1,250	1,253	245	1,253	1,238	667
22	619	29	0	14	230	1,246	1,253	1,253	245	1,250	1,238	652
23	626	29	0	14	509	1,246	1,253	1,253	239	1,246	1,138	755
24	633	29	0	14	1,044	1,246	1,224	1,253	238	1,247	446	755
25	634	29	0	14	973	1,246	1,253	1,253	238	1,253	446	755
26	634	29	0	14	1,044	1,248	1,253	1,253	238	1,253	288	759
27	626	29	0	14	1,185	1,241	1,253	1,253	240	1,249	245	706
28	626	29	0	14	1,246	1,250	1,245	1,253	245	1,247	245	675
29	626		0	14	1,246	1,253	1,134	1,154	253	1,253	230	661
30	626		0	14	1,246	1,253	1,071	1,253	442	1,249	230	747
31	629		0		1,246		1,104	1,182		1,246		747

Source: Con Edison 1979.

TABLE 3-5 CIRCULATING WATER FLOW (INCLUDING SERVICE WATER) AT UNIT 3, INDIAN POINT GENERATING STATION, 1978

	Estimated Circulating Water Flow (Million Gallons per Day)											
Day	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	755	755	755	634	1,038	1,044	14	14	901	1,260	1,253	1,238
2	755	755	755	634	1,037	1,044	14	14	850	1,260	1,224	1,238
3	755	548	755	634	1,037	1,044	14	14	850	1,177	1,080	1,238
4	755	387	755	634	1,037	1,044	14	14	936	1,073	1,138	1,238
5	755	379	755	634	1,037	1,004	14	14	985	1,260	1,224	1,238
6	755	332	755	640	1,037	990	14	14	1,051	1,260	994	1,238
7	755	264	755	641	1,037	929	14	14	926	1,260	850	1,212
8	755	424	755	641	1,041	675	14	14	919	1,260	994	481
9	755	683	755	641	1,044	648	14	14	1,051	1,260	1,267	441
10	755	755	755	641	1,044	442	14	14	1,051	1,260	1,267	209
11	752	755	755	641	1,044	245	14	12	1,051	1,260	1,267	88
12	755	755	755	641	1,044	245	14	19	1,051	1,260	1,267	238
13	755	755	755	641	1,044	245	14	49	1,140	1,260	1,253	238
14	755	755	755	641	1,044	245	14	236	1,110	1,117	1,253	595
15	755	755	755	641	1,044	245	14	328	1,130	1,204	1,238	858
16	755	755	755	641	1,014	245	14	446	1,253	1,143	1,238	999
17	755	755	755	641	1,010	245	21	315	1,189	1,103	1,181	1,044
18	755	755	755	641	1,044	235	22	241	1,053	1,058	965	943
19	755	755	729	641	1,044	230	22	238	932	1,031	979	612
20	744	755	755	641	1,044	230	22	238	1,051	1,022	1,238	672
21	720	755	755	641	1,044	230	22	219	1,138	1,053	1,195	641
22	755	755	755	641	1,044	230	22	245	1,257	1,253	1,037	641
23	755	755	755	641	1,044	230	22	245	1,260	1,253	1,224	641
24	706	755	755	641	1,044	230	22	402	1,260	1,253	1,238	641
25	742	755	755	641	1,044	203	22	803	1,221	1,253	1,238	641
26	755	755	751	617	1,044	14	22	850	1,116	1,166	1,238	641
27	755	755	634	697	1,044	14	22	1,014	1,058	1,178	1,238	641
28	755	755	634	770	1,044	14	22	1,058	1,058	1,253	1,238	641
29	755		634	958	1,044	14	22	1,058	1,058	1,253	1,238	641
30	755		634	1,044	1,044	14	19	1,058	1,240	1,253	1,238	641
31	755		634		1,044		14	1,003		1,253		641

Source: Con Edison 1979.

CHAPTER 4: METHODS

4.1 NEAR FIELD RIVER STUDY

4.1.1 Sampling Stations

The near field river study was designed to determine the temporal and spatial distribution of entrainable organisms (ichthyoplankton, macrozooplankton, and microzooplankton) in the vicinity of the Indian Point Generating Station. Sampling was conducted at seven standard river stations located between river miles 40.0 and 43.7 (64.4-70.3 km), as shown in Figure 4-1. Station locations were similar to those sampled by New York University Medical Center during studies conducted from 1971 through 1976 (NYU 1978). Samples were collected at Stations A and B to monitor the abundance of planktonic organisms entering or leaving the near field area north of the plant, whereas samples were collected at Stations F and G to monitor the abundance of planktonic organisms entering or leaving the near field area south of the plant. Samples collected at Stations C, D, and E provided information on planktonic organisms in the area offshore of the plant. Each station was defined by specific north and south limits and upriver and downriver bearing axes. The depth at all station locations was approximately 15.2 m (50 ft).

4.1.2 Sampling Procedures

4.1.2.1 Microzooplankton

Microzooplankton samples were collected at each sampling station once every 2 weeks from May through November 1978 (Table 4-1). Samples were collected at each station both during the day and at night on most sampling days; however, it was occasionally necessary to collect either the day sample or the night sample later during the sampling week because of inclement weather.

Microzooplankton samples were collected by vertically towing a 75 µm mesh (Number 20) conical plankton net (0.5 m diameter opening, 1.8 m long) through the upper 10 m of the water column at each station.* After collection, organisms and detritus were washed into a sample container and preserved in 10 percent formalin.

The preserved samples were transported to Ecological Analysts' Central Laboratory for processing. At the laboratory, two 1 ml aliquots from each sample were placed in a Ward's plankton disk. Microzooplankton within each aliquot were counted and identified at 40X magnification (higher magnifications were used for identification when necessary).

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* Replicate ("A" and "B" series) microzooplankton samples were collected at each station during all standard station sampling efforts to provide a contingency in the event that samples were voided or lost in the field. Generally, only "A" series samples were processed in the laboratory. In the case of a voided "A" series sample, however, the corresponding "B" series replicate sample was processed in its place.

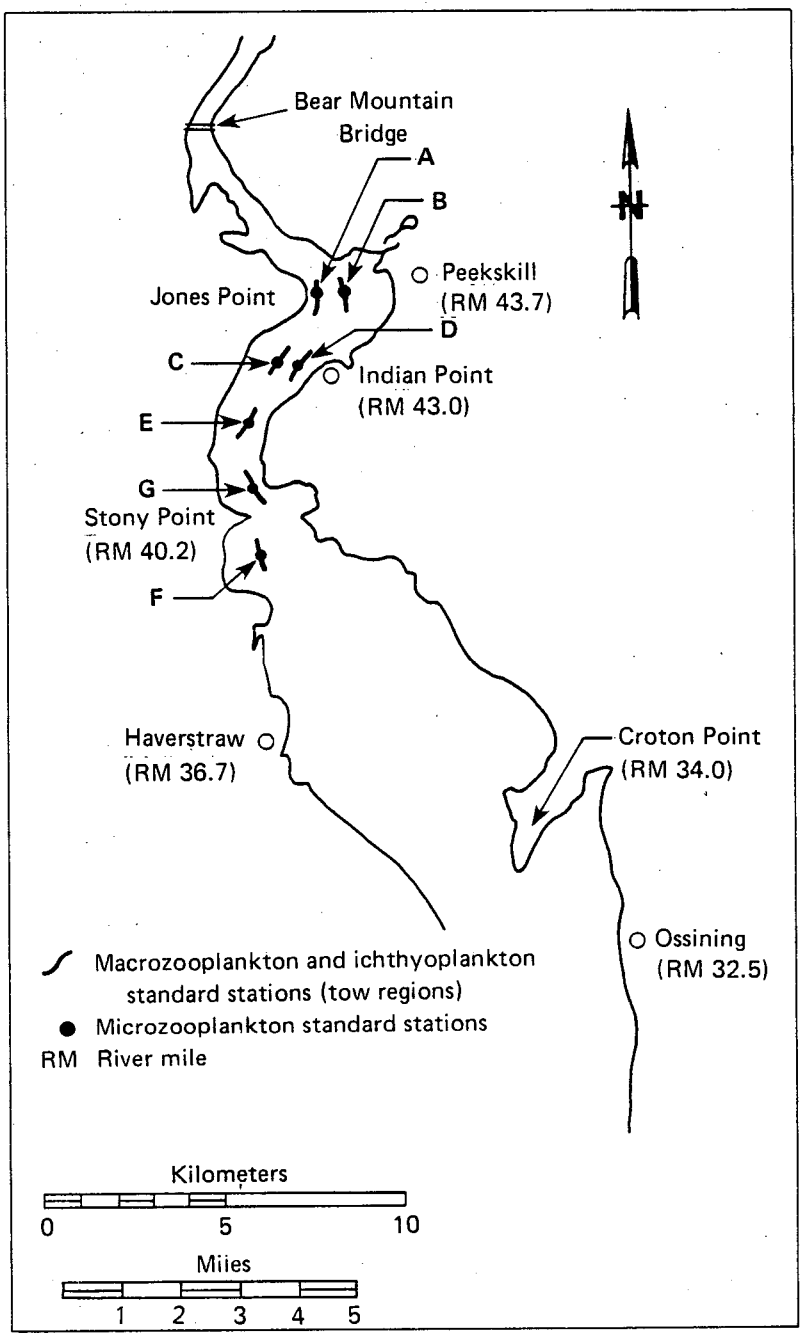

Figure 4-1. River standard station sampling locations in the vicinity of the Indian Point Generating Station.

TABLE 4-1 SAMPLING SCHEDULE FOR MICROZOOPLANKTON, MACROZOOPLANKTON, AND ICHTHYOPLANKTON COLLECTIONS AT STANDARD STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

Sampling Week	Microzooplankton	Macrozooplankton	Ichthyoplankton
21 MAR[a]			X
18 APR[a]			X
3 MAY[a]	X	X[b]	X[b]
10 MAY[a]			X
17 MAY	X	X[b]	X[b]
24 MAY			X
30 MAY	X	X[b]	X[b]
5 JUN			X
14 JUN	X	X[b]	X[b]
21 JUN			X
26 JUN	X	X[b]	X[b]
6 JUL			X
10 JUL	X	X[b]	X[b]
18 JUL			X
25 JUL	X	X[b]	X[b]
8 AUG	X	X	
20 AUG[a]	X	X[b]	X[b]
5 SEP[a]	X	X	
18 SEP[a]	X	X[b]	X[b]
4 OCT	X	X	
17 OCT[a]	X	X[b]	X[b]
31 OCT	X	X	
14 NOV	X	X[b]	X[b]
28 NOV	X	X	
4 DEC			X

(a) Day and night collections conducted during these sampling weeks were not within 24 hours of each other because of inclement weather.

(b) Samples were analyzed for both macrozooplankton and ichthyoplankton on these sampling dates.

4.1.2.2 Macrozooplankton and Ichthyoplankton

Sampling schedules for standard station macrozooplankton and ichthyoplankton collections varied through the sampling season (Table 4-1). Macrozooplankton samples were collected at each standard station once every 2 weeks from May through November 1978 (coincident with microzooplankton sampling). Ichthyoplankton samples were collected at each station monthly in March and April, weekly from May through July, and monthly from August through December 1978. When the sampling schedules for macrozooplankton and ichthyoplankton coincided, organisms in both groups were analyzed from the same samples. Samples were collected both during the day and at night at each station on most sampling days; however, when severe weather conditions occurred, it was necessary to collect either the day sample or the night sample later during the same sampling week.

Macrozooplankton and ichthyoplankton were collected using 571 µm mesh (Number 0) plankton nets (0.5 m diameter opening, 3.7 m long). Ten-minute tows were made simultaneously at the surface, middepth, and bottom, towing into the prevailing current.* During a slack tidal condition, tows were conducted upstream. During all tows, boat engine speed was adjusted to approximately 2,000 rpm. At the end of each tow, organisms and detritus were washed into a removable codend and preserved in 10 percent formalin.

Each sampling net was equipped with a standard vane General Oceanics digital flowmeter (Model 2030) to determine the volume of water sampled. Individual flowmeters were calibrated at the beginning and end of the sampling season at known velocities generated within a test flume located at Johns Hopkins University. Initial and final test values varied by less than 10 percent for each flowmeter used.

Preserved samples were transported to the laboratory contractor (Lawler, Matusky & Skelly Engineers [LMS]) for sample processing. At the LMS laboratory, macrozooplankton and ichthyoplankton were sorted from the sample debris, identified, and counted. During periods of high abundance, macrozooplankton samples and ichthyoplankton samples containing a large number of bay anchovy eggs (more than about 4,000) were subsampled using a Folsom plankton splitter. Sample splits did not exceed 1/8 of the initial sample, and a minimum of 250 macrozooplankton or fish eggs were enumerated and identified per sample. Subsampling was not conducted on ichthyoplankton larvae or juveniles. In addition, the total lengths of up to 30 striped bass larvae and juveniles collected per sample were determined to the nearest 0.1 mm. All laboratory processing information was then transmitted to Ecological Analysts for data analysis.

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* Replicate ("A" and "B" series) macrozooplankton and ichthyoplankton samples were collected at each depth location per station during all standard station sampling efforts to provide a contingency in the event that samples were voided or lost in the field. Generally, only "A" series samples were processed in the laboratory. In the case of a voided "A" series sample, however, the corresponding "B" series replicate sample was processed in its place.

4.1.2.3 Water Quality Measurements

Upon completion of plankton collections at each standard station, water quality measurements were made at each sampling depth (i.e., surface, middepth, and bottom). Water temperature, dissolved oxygen, conductivity, and pH were measured using a Martek water quality analyzer. Secchi disk transparencies were measured during the day collections with a standard 20 cm Secchi disk.

4.1.3 Analytical Procedures

The abundance of selected microzooplankton, macrozooplankton, and ichthyoplankton taxa in the vicinity of the Indian Point plant was determined as the ratio of the number of organisms in a sample to the total volume of river water sampled (density). Because the microzooplankton samples were subsampled to obtain counts, densities of microzooplankton taxa were determined according to the following formula (modified from APHA 1975):

$$\text{river density (number/liter)} = \frac{N \times S}{C \times V}$$

where

N = number of organisms counted
S = volume of concentrated sample (ml)
C = volume of aliquots counted (ml)
V = volume of sample collected (liters).

For macrozooplankton and ichthyoplankton samples that were subsampled during processing, densities of macrozooplankton and fish eggs were determined according to the formula:

$$\text{density (number/1,000 m}^3\text{)} = \frac{N/P}{V} \times 1{,}000$$

where

N = number of organisms counted
P = proportion of sample that was processed
V = volume of sample collected (m^3).

Before density estimates were calculated, total volume estimates of water sampled for each collection were examined to identify possible aberrant flowmeter readings, as indicated by extremely high or low volume measurements. For this analysis, all volume estimates for macrozooplankton and ichthyoplankton samples collected at the seven standard river stations and samples collected at the three river transect stations (see Appendix B) were combined and grouped by depth (surface, middepth, or bottom samples). Samples with volume estimates more than 3.09 standard deviations from the mean (corresponding to an alpha level of 0.002) were identified and excluded from subsequent data analysis. It was necessary to analyze each depth group separately because sample volumes varied consistently according to depth (middepth < bottom < surface). For macrozooplankton and ichthyoplankton standard station

data, a total of three samples were excluded from the surface group, one sample was excluded from the middepth group, and two samples were excluded from the bottom group.

The mean density of each taxon of microzooplankton, macrozooplankton, and ichthyoplankton collected at standard river stations was calculated after averaging density estimates for all stations, all depths (where applicable), all sampling dates, and sampling times (day and night), as follows:

$$\text{average density} = \frac{\sum^{abcd}\sum\sum\sum Y}{n}$$

where

Y = density value determined for a given depth (a), sampling date (b), sampling time (day or night) (c), and station (d)
n = total number of samples collected (excluding macrozooplankton and ichthyoplankton collections with extremely high or low sample volumes).

The mean density of total microzooplankton, total macrozooplankton, or total ichthyoplankton was determined as the sum of the average densities of all taxa collected within each group. The percentage composition for each taxon was then determined as shown below:

$$\text{percentage composition} = \frac{\text{mean density for a given taxon}}{\text{mean density for the total group}} \times 100$$

In addition, the relative abundances of selected taxa were examined for all sampling dates through the sampling season. For this purpose, density values were averaged over all stations, depths (where applicable), and times (day and night).

Analysis of variance (ANOVA) was conducted for selected taxa to determine if the densities of organisms differed significantly among stations ($\alpha = 0.05$). Prior to analysis, all data were transformed using log $(x + 1)$, where x equals the density value in order to stabilize variance among treatments and, thereby, increase the tenability of the homogenous variance assumptions of the ANOVA. Sampling dates during which specimens of the selected taxon were not collected at any station were not included in the ANOVA. For microzooplankton, a three-way ANOVA was conducted with station, date, and day/night as the main factors. For macrozooplankton and ichthyoplankton, depth was also included as a main factor, resulting in a four-way ANOVA. In cases where a station effect was significant ($P \leq 0.05$), the Student-Newman-Keuls (SNK) multiple range test was used to locate specific station differences at the 5 percent level of significance (Zar 1974, Section 15.5). Although station effect was the main factor of principal interest, the significance of other main factor effects and of all two-way interactions was also determined. The sums of the squares for three-way and four-way interactions were used to calculate the error mean square (Walpole and Myers 1972).

4.2 ENTRAINMENT ABUNDANCE STUDY

4.2.1 Sampling Stations

Ichthyoplankton and macrozooplankton were collected at two intake stations and at one discharge station at the Indian Point plant (Figure 4-2) to determine the abundance of selected ichthyoplankton and macrozooplankton taxa. Stations I2 and I3 were located at the intakes to Unit 2 and Unit 3, respectively; Station I2 was located in forebay 25 between the trash racks and the traveling screen, whereas Station I3 was located approximately 3 m in front of the Unit 3 intake structure at forebay 34. Station D1 was located upstream of the point where discharge water from Unit 3 enters the common discharge canal; samples collected at this location provided information on organisms entrained through Unit 2 and Unit 1 (when Unit 1 circulating pumps were in operation). Sampling was not conducted in the Unit 3 discharge canal because of high water velocities and the consequent inability to maintain sampling frames at this location.

4.2.2 Sampling Procedures

4.2.2.1 Sample Collection

Entrainment abundance samples were collected monthly in March and April, weekly from May through July, and monthly from August through December. Samples were collected at Stations I2 and D1 when Unit 2 was online. When Unit 3 was online, samples were collected only at Station I3. Dates on which sampling was conducted at each station, together with unit operation information for those dates, are presented in Table 4-2.

Samples were collected from the surface, middepth, and bottom at intake and discharge stations using 571 µm mesh (Number 0) conical plankton nets (0.5 m diameter opening). Because of space limitations, plankton nets used at the intakes were 1.2 m long, whereas nets used at the discharge station were 1.8 m long. The nets at each station were mounted on a vertical frame that was raised and lowered by a pulley mounted on the top of the frame (Figure 4-3). Each net was equipped with a TSK flowmeter* mounted in the center of the net mouth to determine the volume of water sampled. Individual flowmeters were calibrated at the beginning and end of the sampling season at known velocities generated within a test flume located at Johns Hopkins University. Initial and final test values varied by less than 10 percent for each flowmeter used.

Five-minute samples were collected simultaneously at each station with each net once every 2 hours throughout a 12-hour sampling effort, resulting in a total of 21 samples per station (7 collection periods, 3 sampling depths). Each 12-hour sampling effort was scheduled so that the fourth collection period occurred approximately at dusk.

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*Duplicate samples were collected at each depth location per station as a contingency in the event of sample loss. The nets used to collect the contingency samples were equipped with General Oceanics (GO) flowmeters.

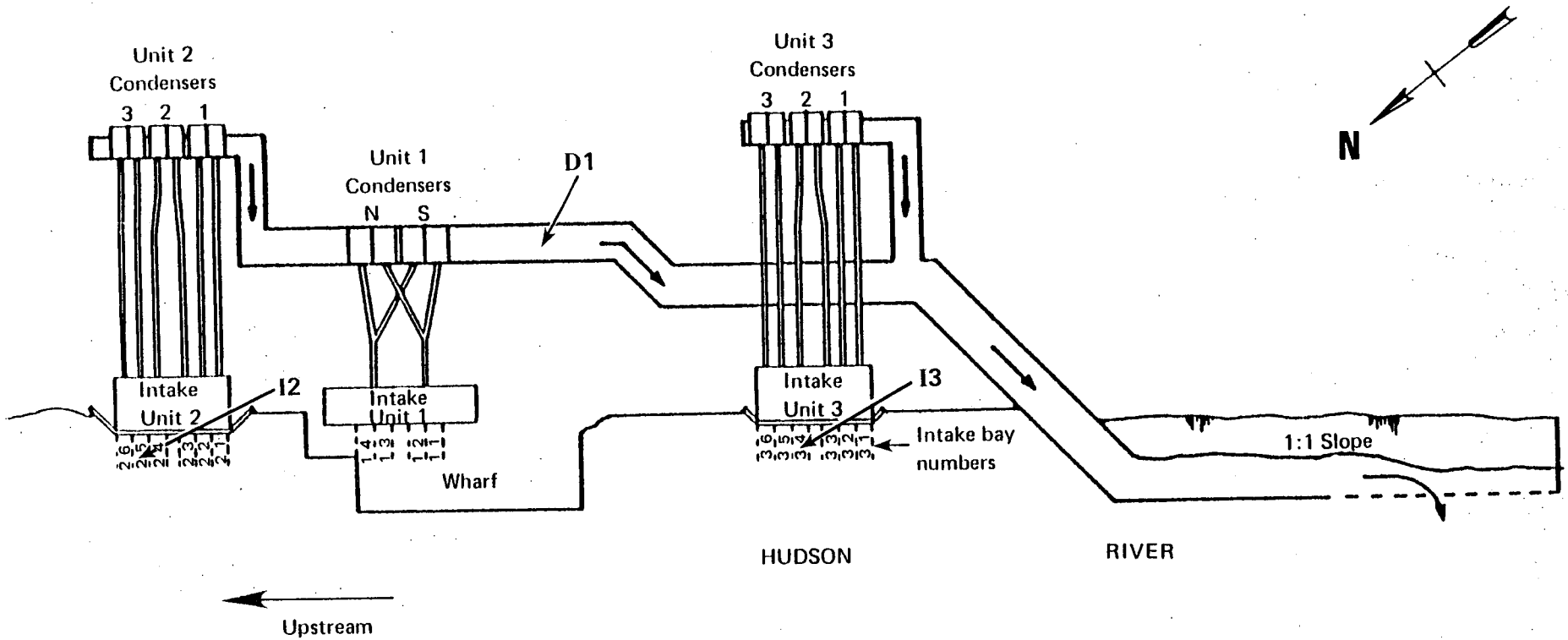

Figure 4-2. Diagram of the Indian Point Generating Station circulating water system showing location of sampling stations (adapted from Con Edison 1977b).

TABLE 4-2 SAMPLING DATES, SAMPLING STATIONS, AND UNIT OPERATION DURING THE 1978 ENTRAINMENT ABUNDANCE STUDY AT THE INDIAN POINT GENERATING STATION, 1978

Sampling Date	Units Operating	Sampling Stations
16 MAR	Unit 3	I3
17 APR	Unit 3[a]	I3
4 MAY	Unit 3	I3
11 MAY	Unit 3	I3
18 MAY	Unit 3	I3
25 MAY	Unit 3	I3
1 JUN	Unit 2 and Unit 3	I2, I3, D1
8 JUN	Unit 2	I2, D1
15 JUN	Unit 2[a]	I2, D1
22 JUN	Unit 2	I2, D1
29 JUN	Unit 2	I2, D1
5 JUL	Unit 2[a]	I2, D1
13 JUL	Unit 2	I2, D1
17 JUL	Unit 2[a]	I2, D1
24 JUL	Unit 2[a]	I2, D1
7 AUG	Unit 2[a]	I2, D1
11 SEP	Unit 2 and Unit 3[a]	I2, I3, D1
10 OCT	Unit 2 and Unit 3[a]	I2, I3, D1
6 NOV	Unit 2 and Unit 3	I2, I3, D1
11 DEC	Unit 2	I2, D1

(a) One or more circulating pumps at Unit 1 were in operation during sampling (from Con Edison 1979).

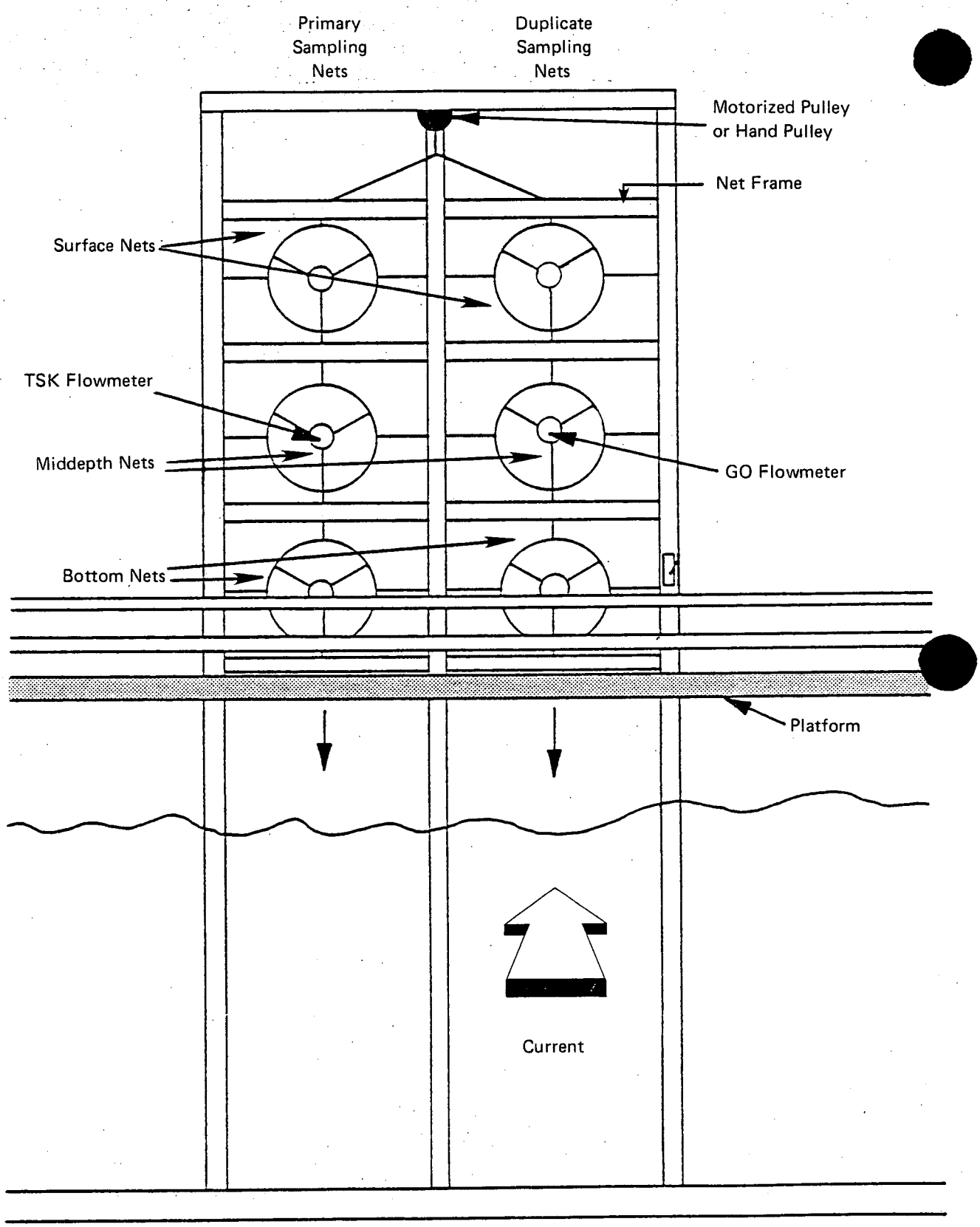

Figure 4-3. Stationary net sampling apparatus used to collect samples at Stations I2, I3, and D1 during the entrainment abundance study conducted at the Indian Point Generating Station, 1978.

After collection, organisms and detritus were carefully washed from the nets into removable codend collection cups. The collection cups were then removed from the nets and transported to the onsite laboratory for sample sorting.

4.2.2.2 Sample Sorting and Processing

At the onsite laboratory, live and stunned macrozooplankton (*Gammarus* spp., *Neomysis americana*, *Monoculodes edwardsi*, and *Chaoborus punctipennis*) and ichthyoplankton were removed from the samples for survival determinations (see Appendix A). The remaining sample residual, including dead organisms, was preserved in 10 percent formalin.

All preserved samples were transported to the laboratory contractor, LMS, for sample processing. At the LMS laboratory, macrozooplankton and ichthyoplankton were sorted from the preserved samples, identified, and counted. During periods of high abundance, macrozooplankton samples and ichthyoplankton samples containing large numbers of bay anchovy eggs (more than about 4,000) were subsampled using a Folsom plankton splitter. Sample splits did not exceed 1/8 of the initial sample, and a minimum of 250 macrozooplankton or fish eggs were enumerated and identified per sample. In addition, the total lengths of up to 30 initially dead striped bass per sample, and all striped bass used for latent survival testing (see Appendix A) were determined to the nearest 0.1 mm. All laboratory processing information was then transmitted to Ecological Analysts for data analysis.

4.2.2.3 Water Quality Measurements

Measurements of water quality were conducted in conjunction with all sample collections. Temperature, conductivity, pH, and dissolved oxygen were measured using a Martek water quality analyzer. Separate water quality measurements were obtained at all three depths at plant intake stations. At the discharge station, where the water is well-mixed, water quality measurements were taken only at the surface.

4.2.3 Analytical Procedures

Entrainment abundance was examined for five selected taxa: striped bass (all early developmental stages), *Gammarus* spp., *Neomysis americana*, *Monoculodes edwardsi*, and *Chaoborus punctipennis*. The abundances of these organisms collected at each station were determined as the ratio of the number of organisms in each sample to the volume of water sampled (number per 1,000 m^3). For samples that were subsampled during processing, abundance was determined by calculating densities according to the formula:

$$\text{density (number/1,000 m}^3) = \frac{N/P}{V} \times 1{,}000$$

where

N = number of organisms counted
P = proportion of sample that was processed
V = volume of sample collected (m^3).

Before densities were calculated, estimates of the volumes of water sampl were examined to identify possible aberrant flowmeter readings, as indicat by extremely high or low volume measurements. At the intake stations, separate analyses were conducted for each sampling depth because sample volumes varied consistently according to depth. At the discharge station, sample volumes for all sampling depths were combined before analysis because the higher velocities and uniform flow of the water in the discharge canal produced nearly equivalent sample volumes at all depths (see Appendix F, Table F.3-1 for actual sample volumes). Samples with volume estimates more than 3.09 standard deviations from the mean were identified for each group and excluded from subsequent data analysis. In addition, samples with volumes less than 1.77 m^3 (corresponding to a velocity of 0.1 ft per sec) were excluded to eliminate density estimates based on potentially inaccurate flowmeter readings at low velocities. A total of 18 samples (9 percent) were excluded from the Station I3 collections, 25 samples (9 percent) were excluded from the Station I2 collections, and 3 samples (1 percent) were excluded from the Station D1 collections as a result of this analysis.

Entrainment abundance of each of the five selected taxa was examined with respect to seasonal fluctuations, diurnal fluctuations, and differences among the three sampling stations (I2, I3, and D1). For these purposes, average densities were determined by summing the density values for given depths, sampling dates, and/or collection periods (depending on the analysis), and dividing by the number of samples being averaged. Mean densities for all stations combined were calculated from average densities determined for each station, giving equal weight to each station. Where densities were determined separately for day and night collections, the fourth sample (collect at dusk) in each 12-hour sampling effort was included with the night data.

CHAPTER 5: RESULTS AND DISCUSSION

5.1 NEAR FIELD RIVER STUDY

5.1.1 Microzooplankton

5.1.1.1 Species Composition

A total of 69 microzooplankton taxa, representing six phyla, were collected at standard river stations in the vicinity of the Indian Point Generating Station during the 1978 sampling season (Table 5-1). The most diverse groups of microzooplankton were crustaceans (34 taxa) and rotifers (28 taxa). Other microzooplankton collected included nematodes, annelids, gastropod and pelecypod veligers, tardigrads, and dipteran larvae.

A larger number of microzooplankton taxa were identified from samples collected in 1978 than were found during near field studies conducted from 1971 through 1976 (Table 5-2). Of the 45 taxa identified in collections from previous years (NYU 1978), 36 taxa also occurred in 1978 collections. A total of 32 taxa found in 1978 collections were not identified in collections from previous years, but the combined abundance of these 32 taxa was less than 1.5 percent of the average microzooplankton catch per unit volume. Of the taxa not reported in near field river collections prior to 1978, the most abundant were polychaete larvae (0.363 percent of the average catch), Bosmina regoni (0.281 percent of catch), Asplanchna pridonta (0.180 percent of the erage catch), and Cyclops vernalis (0.170 percent of the average catch).

5.1.1.2 Relative Abundance and Distribution

5.1.1.2.1 Total Microzooplankton

Crustaceans (predominantly copepods) and rotifers were the most abundant microzooplankton collected, constituting 79 and 18 percent of the average microzooplankton catch per unit volume, respectively (Table 5-3). The five most abundant species were (in order of decreasing abundance) Eurytemora affinis (copepod), Acartia tonsa (copepod), Keratella cochlearis (rotifer), Synchaeta spp. (rotifer), and Polyarthra spp. (rotifer). These five species, an unidentified rotifer, and total copepod nauplii accounted for over 90 percent of the total microzooplankton catch.

Microzooplankton were most abundant during late spring and summer, peak den sities occurring in July (Figure 5-1); abundances were generally greater during the day than at night (Table 5-4). The mean densities of total microzooplankton for all stations combined ranged from 6.1 to 138.0 per liter during the day and from 8.1 to 96.3 per liter during the night through the sampling period. Rotifers dominated collections on only two sampling dates during the spring, whereas crustaceans dominated collections during the remainder of the sampling period (Figure 5-1).

5.1.1.2.2 Copepods

Copepoda was the dominant group of crustaceans collected, constituting 78 percent of the average microzooplankton catch. Sixteen species of copepods,

TABLE 5-1 PHYLOGENETIC LIST OF MICROZOOPLANKTON COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

- Phylum Rotifera
  - Order Ploima
    - Family Brachionidae
      - *Brachionus angularis*
      - *B. calyciflorus*
      - *B. plicatilis*
      - *B. quadridentata*
      - *Diplois daviesiae*
      - *Euchlanis* spp.
      - *Kellicottia bostoniensis*
      - *K. longispina*
      - *Keratella cochlearis*
      - *K. quadrata*
      - *K. valga*
      - *Notholca acuminata*
      - *Platyias patulus*
      - *Trichotria* spp.
    - Family Lecanidae
      - *Monostyla* spp.
    - Family Trichoceridae
      - *Elosa woralli*
      - *Trichocerca cylindrica*
      - *T. longiseta*
      - *T. similis*
    - Family Asplanchnidae
      - *Asplanchna priodonta*
      - *Asplanchna* spp.
    - Family Synchaetidae
      - *Ploesoma truncatum*
      - *Ploesoma* spp.
      - *Polyarthra* spp.
      - *Synchaeta* spp.
  - Order Flosculariaceae
    - Family Testudinellidae
      - *Filinia longiseta*
    - Family Conochilidae
      - *Conochiloides* spp.
  - Unidentified Rotifera
- Phylum Nematoda
- Phylum Annelida
  - Class Polychaeta (larvae)
- Phylum Mollusca
  - Class Gastropoda (veliger)
  - Class Pelecypoda (veliger)

(a) Does not include protozoans.

TABLE 5-1 (CONT.)

Phylum Arthropoda
- Class Crustacea
  - Subclass Branchiopoda
    - Order Cladocera
      - Family Leptodoridae
        - *Leptodora kindtii*
      - Family Sididae
        - *Diaphanosoma brachyurum*
        - *Diaphanosoma* spp.
      - Family Daphnidae
        - *Ceriodaphnia lacustris*
        - *Daphnia longispina*
        - *D. pulex*
        - *Daphnia* spp.
      - Family Bosminidae
        - *Bosmina coregoni*
        - *B. longirostris*
      - Family Chydoridae
        - *Alona guttata*
        - *Alona* spp.
        - *Chydorus sphaericus*
        - *Chydorus* spp.
        - *Leydigia quadrangularis*
        - Unidentified Chydoridae
  - Subclass Ostracoda
  - Subclass Copepoda
    - Order Calanoida
      - Family Temoridae
        - *Epischura lacustris*
        - *Eurytemora affinis*
      - Family Diaptomidae
        - *Diaptomus* spp.
      - Family Acartiidae
        - *Acartia tonsa*
    - Order Cyclopoida
      - Family Cyclopoidae
        - *Cyclops bicuspidatus thomasi*
        - *C. vernalis*
        - *Cyclops* spp.
        - *Halicyclops fosteri*
        - *Mesocyclops edax*
        - *Paracyclops poppei*
      - Unidentified Cyclopoida adult
      - Cyclopoida copepodid
    - Order Harpacticoida
      - Family Laophontidae
        - *Onychocamptus mohammed*
      - Family Ectinosomidae
        - *Ectinosoma cuticorne*

TABLE 5-1 (CONT.)

- Family Canuellidae
  - *Canuella canadensis*
- Family Canthocamptidae
  - *Canthocamptus staphylinoides*
- Unidentified Harpacticoida adult
- Harpacticoida copepodid
- Copepoda nauplius
- Subclass Cirripedia (nauplius)
- Subclass Malacostraca
  - Order Decapoda (zoea)
- Class Insecta
  - Order Diptera (larvae)
- Phylum Tardigrada

TABLE 5-2 MICROZOOPLANKTON TAXA COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1971-1978[a]

Taxa	1971	1974	1975	1976	1978
Rotifera					
Asplanchna priodonta					X
Asplanchna spp.	X	X	X	X	X
Brachionus angularis	X	X	X	X	X
B. calyciflorus	X	X	X	X	X
B. plicatilis					X
B. quadridentata		X	X	X	X
Callotheca spp.	X				
Conochiloides spp.					X
Diplois daviesiae					X
Elosa woralli					X
Euchlanis spp.					X
Filinia longiseta	X	X	X	X	X
Kellicottia bostoniensis					X
K. longispina	X	X	X	X	X
Keratella cochlearis	X	X	X	X	X
K. quadrata	X	X	X	X	X
K. serrulata		X	X		
K. taurocephla	X				
K. valga					X
Lecane spp.		X	X		
Monostyla spp.	X				X
Notholca acuminata	X	X	X	X	X
Philodina spp.	X	X	X	X	
Platyias patulus		X	X	X	X
P. quadricornis		X	X		
Ploesoma truncatum	X	X	X	X	X
Ploesoma spp.					X
Polyarthra spp.	X	X	X	X	X
Synchaeta spp.		X	X		X
Trichocerca spp.[b]	X	X	X	X	X
Trichotria spp.					X
Unidentified rotifers	X	X	X	X	X
Nematoda	X	X	X	X	X
Annelida larvae	X	X	X	X	X
Gastropod veliger	X	X	X	X	X
Pelecypod veliger	X	X	X	X	X
Polychaeta, unidentified					X

(a) The occurrence of microzooplankton taxa from 1971 through 1976 was reported by NYU (1978); analysis of 1977 data has not been completed.
(b) Includes *Trichocerca cylindrica*, *T. longiseta*, and *T. similis* for 1978 collections.

TABLE 5-2 (CONT.)

Taxa	1971	1974	1975	1976	1978
Crustacea					
Copepoda					
Acartia tonsa	X	X	X	X	X
Canthocamptidal	X	X	X	X	X
Canuellidae	X	X	X	X	X
Cyclops bicuspidatus	X	X	X	X	X
C. vernalis					X
Cyclops spp.					X
Diaptomus spp.					X
Ectinosoma cuticorne	X	X	X	X	X
Epischura spp.	X	X	X		X
Ergasilus spp.	X	X	X	X	
Eurytemora affinis	X	X	X	X	X
Halicyclops fosteri	X	X	X	X	X
Mesocyclops edax	X			X	X
Onychocamptus mohammed					X
Paracyclops poppei					X
Unidentified cyclopoid					X
Unidentified harpacticoid					X
Unidentified nauplius	X	X	X	X	X
Unidentified copepodids	X	X	X	X	X
Cladocera					
Alona guttata					X
Alona spp.					X
Bosmina coregoni					X
B. longirostris	X	X	X	X	X
Ceriodaphnia lacustris					X
Unidentified Chydorid	X	X	X	X	X
Chydorus sphaericus					X
Chydorus spp.					X
Daphnia longispina					X
D. pulex	X	X	X	X	X
Daphnia spp.					X
Diaphanosoma brachyurum	X	X	X	X	X
Diaphanosoma spp.					X
Leptodora kindtii	X	X	X	X	X
Leydigia quadrangularis					X
Moina spp.	X	X	X		
Cirripedia nauplius	X	X	X	X	X
Ostracoda	X	X	X	X	X
Decapoda zoea					X
Diptera larvae					X
Tardigrada	X	X	X	X	X

TABLE 5-3 MEAN DENSITIES AND PERCENT COMPOSITION OF MICROZOOPLANKTON COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Taxa	Mean Density (No./liter)	Percent Composition
Copepoda nauplius	30.081	65.864
Eurytemora affinis	2.280	4.991
Acartia tonsa	2.207	4.834
Unidentified Rotifera	2.014	4.409
Keratella cochlearis	2.004	4.389
Synchaeta spp.	1.422	3.114
Polyarthra spp.	1.359	2.975
Notholca acuminata	0.804	1.760
Halicyclops fosteri	0.551	1.207
Gastropoda veliger	0.530	1.160
Ectinosoma cuticorne	0.330	0.722
Cyclopoida copepodid	0.223	0.489
Canuella canadensis	0.209	0.457
Cirripedia nauplius	0.173	0.379
Polychaeta larvae	0.166	0.363
Bosmina longirostris	0.162	0.354
Bosmina coregoni	0.128	0.281
Diaphanosoma brachyurum	0.128	0.280
Brachionus calyciflorus	0.108	0.236
Keratella quadrata	0.102	0.224
Asplanchna priodonta	0.082	0.180
Cyclops vernalis	0.078	0.170
Pelecypoda veliger	0.067	0.146
Filinia longiseta	0.056	0.122
Daphnia longispina	0.054	0.118
Cyclops bicuspidatus thomasi	0.052	0.114
Harpacticoida copepodid	0.042	0.092
Kellicottia longispina	0.041	0.090
Onychocamptus mohammed	0.034	0.075
Ploesoma truncatum	0.019	0.042
Trichocerca cylindrica	0.018	0.040
Brachionus angularis	0.017	0.038
Daphnia pulex	0.014	0.032
Leptodora kindtii	0.014	0.030
Mesocyclops edax	0.011	0.025
Harpacticoida adult	0.008	0.017
Ceriodaphnia lacustris	0.007	0.015
Daphnia spp.	0.007	0.015
Others	0.068	0.155

a) Based on samples collected every two weeks from May through November.

TABLE 5-4 MEAN DENSITIES OF ROTIFERS, COPEPODS, CLADOCERANS, AND TOTAL MICROZOOPLANKTON COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Sampling Week	Mean Density (No./liter)[b]							
	Rotifers		Copepods		Cladocerans		Total Microzooplankton	
	Day	Night	Day	Night	Day	Night	Day	Night
5 MAY	1.2	1.3	4.9	6.7	0	0	6.1	8.1
17 MAY	22.0	23.2	8.8	14.7	0.1	0.4	31.0	38.3
31 MAY	64.0	63.3	27.2	27.0	1.4	0.9	92.6	91.2
14 JUN	5.4	5.4	63.3	47.8	4.3	3.9	73.0	57.0
26 JUN	0.4	0.1	64.8	28.8	0.7	0.5	66.1	29.8
10 JUL	15.7	7.1	111.3	83.1	0.1	0.2	129.4	96.3
25 JUL	11.6	3.5	123.7	59.5	0.1	1.1	138.0	66.3
8 AUG	1.6	0.1	43.9	16.2	0.1	0.5	48.6	18.9
22 AUG	0.7	0.6	23.3	25.6	0.9	1.3	25.8	28.9
5 SEP	3.3	1.4	63.6	28.8	0	0.1	69.3	31.4
18 SEP	8.1	0.9	29.0	19.2	0	0.2	38.9	21.0
5 OCT	3.9	1.8	61.2	36.4	0	0	65.7	38.8
17 OCT	1.5	0.4	27.6	13.6	0	0	29.8	14.4
31 OCT	1.8	3.5	20.0	18.3	0	0	22.0	21.9
14 NOV	1.4	3.1	26.5	8.3	0	0	28.0	11.4
28 NOV	0.1	0.2	11.2	11.5	0	0	11.7	11.7
MEAN	8.9	7.2	44.4	27.9	0.5	0.6	54.7	36.6

(a) See Appendix Tables D.1-1 to D.1-14 for densities of selected microzooplankton taxa collected at each station.

(b) Mean density = $\frac{\sum^{a} Y}{n}$

where

Y = density at a given station (a),
n = number of samples collected during a given sampling time (day or night) in a given sampling week.

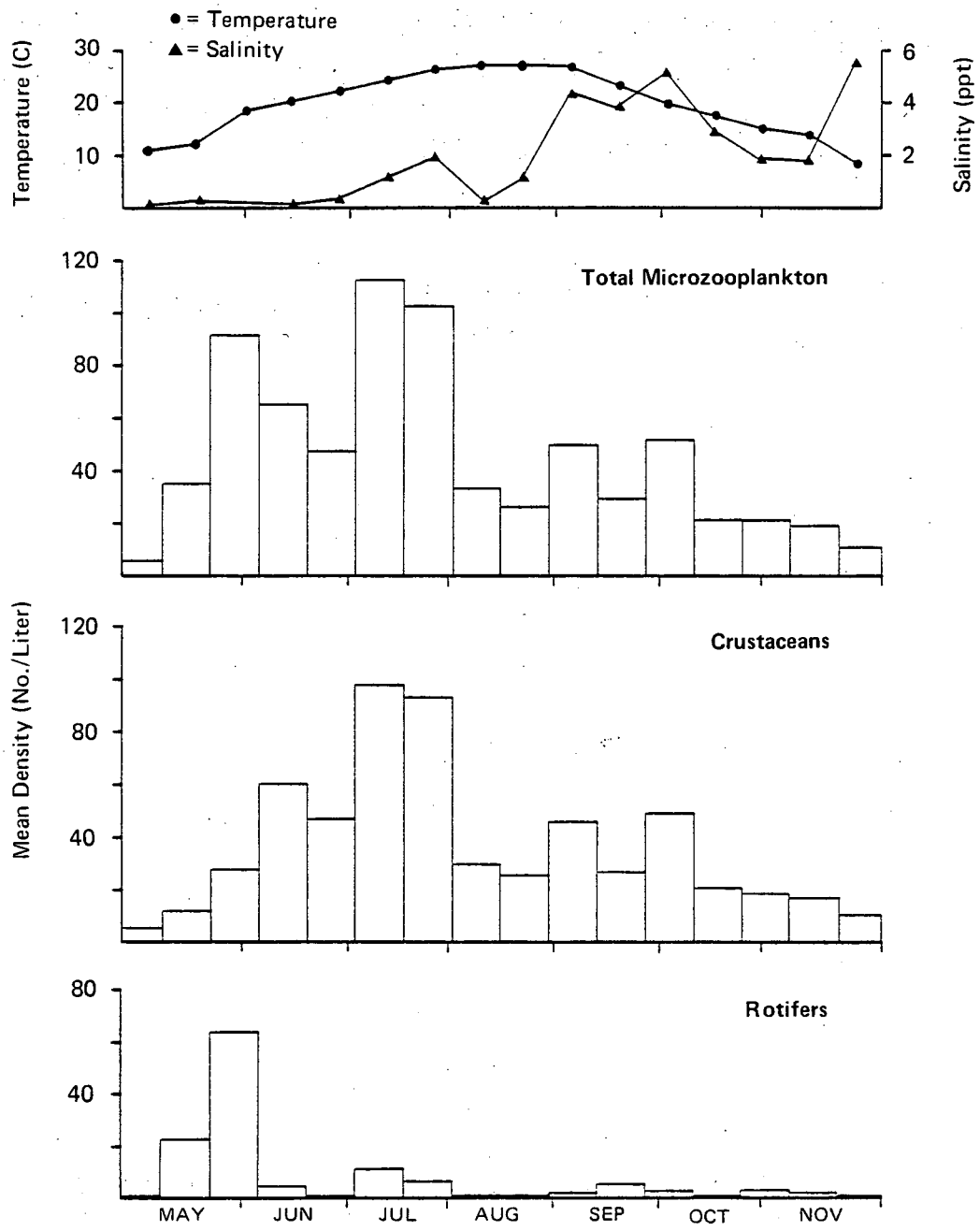

Figure 5-1. Mean densities (No./liter) of total microzooplankton, crustaceans, and rotifers collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978. (See Appendix C for water quality data.)

representing eight identified families, were collected during the study (Table 5-1). Adult copepods were most abundant from June through August, copepodids were most abundant from September through November (Figure 5-2). Copepod nauplii, constituting 66 percent of the average microzooplankton catch per unit volume, were abundant through most of the sampling period.

Calanoid copepods were the most abundant group of copepods collected, averaging 9.8 adults and copepodids per liter for all collections combined. Calanoida included the two most abundant species of copepods collected--Eurytemora affinis and Acartia tonsa. Acartia tonsa was first collected in July (Figure 5-3). The peak abundance of A. tonsa occurred in late July, followed by a decline in abundance to less than 0.1 per liter by late November. In contrast, the abundance of Eurytemora affinis gradually increased during May and June to a peak density of 5.4 per liter (averaged for all stations and both day and night collections) in early July and then decreased to a mean density of about 2 per liter through August and September, followed by a gradual increase in abundance to a mean density of 4.8 per liter in late November. The majority of adult E. affinis were collected during the spring and summer, whereas the fall population of E. affinis were predominantly copepodids.

Cyclopoid and harpacticoid copepods (not including nauplii) constituted 2.0 and 1.4 percent of the average microzooplankton catch per unit volume, respectively. The most abundant cyclopoid copepod was Halicyclops fosteri, and the most abundant harpacticoid copepod was Ectinosoma cuticorne; H. fosteri and E. cuticorne were the third and fourth most abundant copepods collected, respectively.

5.1.1.2.3 Cladocerans

Cladocerans (branchiopod crustaceans) constituted 1.2 percent of the average microzooplankton catch per unit volume. Fifteen species of cladocerans, representing five families, were collected during the study (Table 5-1). The majority of cladocerans were collected during late May and June (Figure 5-4). Peak abundance was observed in mid-June, following the peak abundance of rotifers observed in late May (Table 5-4). The principal cladocerans collected during this peak abundance period were (in order of decreasing abundance) Bosmina longirostris, Bosmina coregoni, and Daphnia longispina. Diaphanosoma brachyurum was the dominant cladoceran collected during July, August, and September (Figure 5-4). No cladocerans were collected during October or November.

5.1.1.3 Analysis of Variance for Selected Microzooplankton Taxa

Analysis of variance was conducted on selected microzooplankton taxa to determine if the abundance of organisms differed significantly from station to station ($\alpha = 0.05$). In addition to station effects, date and day/night were included in the analysis as main factors. Significant differences in abundance among stations ($P < 0.05$) were observed for total crustaceans, total copepods, Acartia tonsa (copepod), Diaphanosoma brachyurum (cladoceran), and total rotifers (Table 5-5). Abundance also varied significantly according to date for all taxa examined. Mean densities were significantly greater

TABLE 5-5 RESULTS OF ANALYSIS OF VARIANCE (X INDICATES SIGNIFICANCE AT $\alpha = 0.05$) ON DENSITIES OF SELECTED MICROZOOPLANKTON TAXA COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a].

Taxa	Main Factors			Interactions		
	Date (A)	Station (B)	Day/Night (C)	AxB	AxC	BxC
Crustacea	X	X	X	--	--	--
Copepoda	X	X	X	--	--	--
Eurytemora affinis[b]	X	--	--	--	X	--
Acartia tonsa[b]	X	X	X	--	--	--
Halicyclops fosteri	X	--	--	X	X	--
Cyclops bicuspidatus	X	--	--	--	--	--
Cladocera	X	--	X	X	X	--
Diaphanosoma brachyurum	X	X	X	X	X	--
Bosmina longirostris	X	--	--	--	--	--
Rotifers	X	X	X	X	X	--

(a) See Appendix Tables E.1-1 through E.1-11 for analysis of variance.
(b) Analysis included adult and copepodid life stages.

Note: Dashes (--) indicate nonsignificance (i.e., $P > 0.05$).

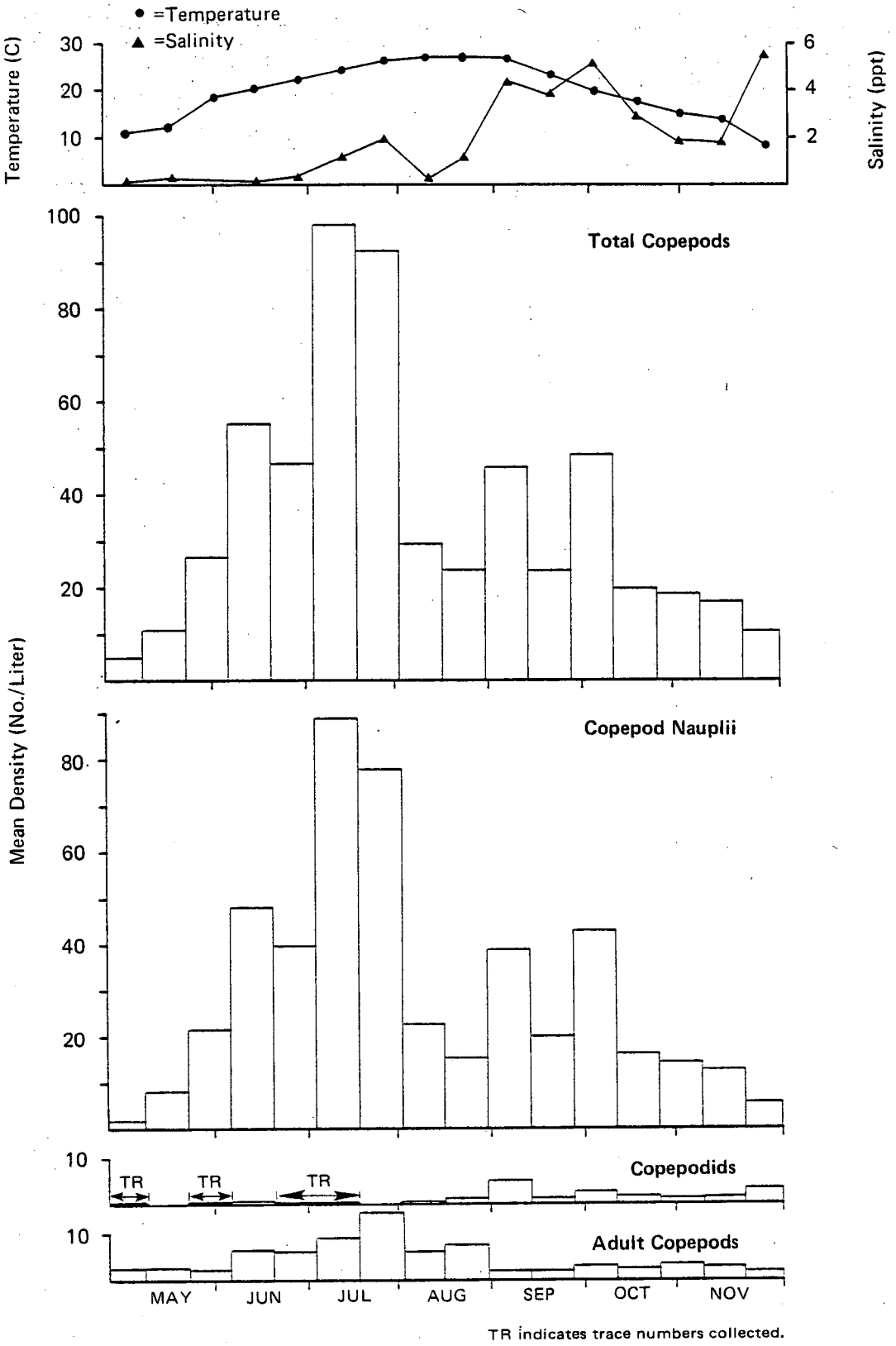

Figure 5-2. Mean densities (No./liter) of copepod nauplii, copepodids, and copepod adults collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978. (See Appendix C for water quality data.)

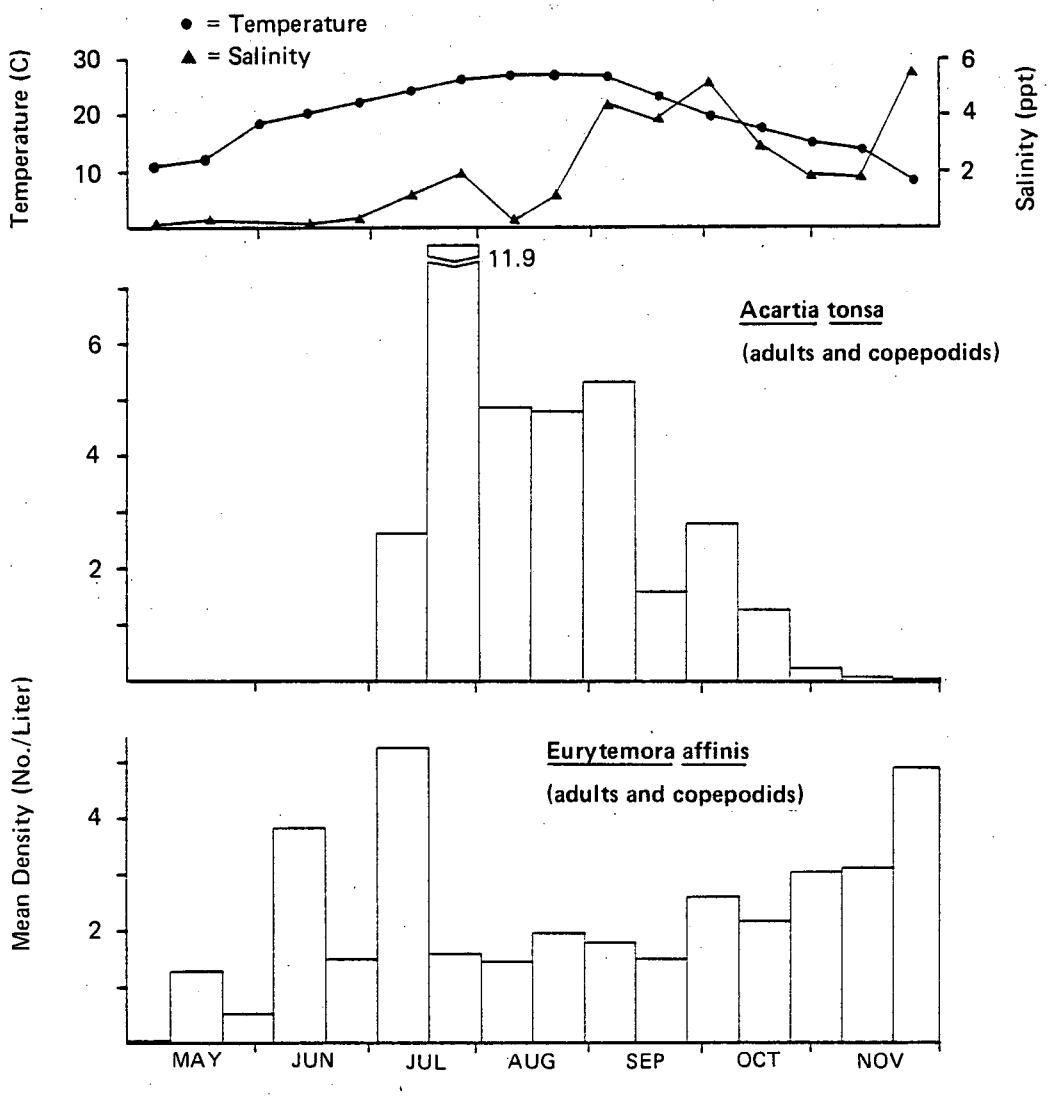

Figure 5-3. Mean densities (No./liter) of Acartia tonsa and Eurytemora affinis collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978. (See Appendix C for water quality data.)

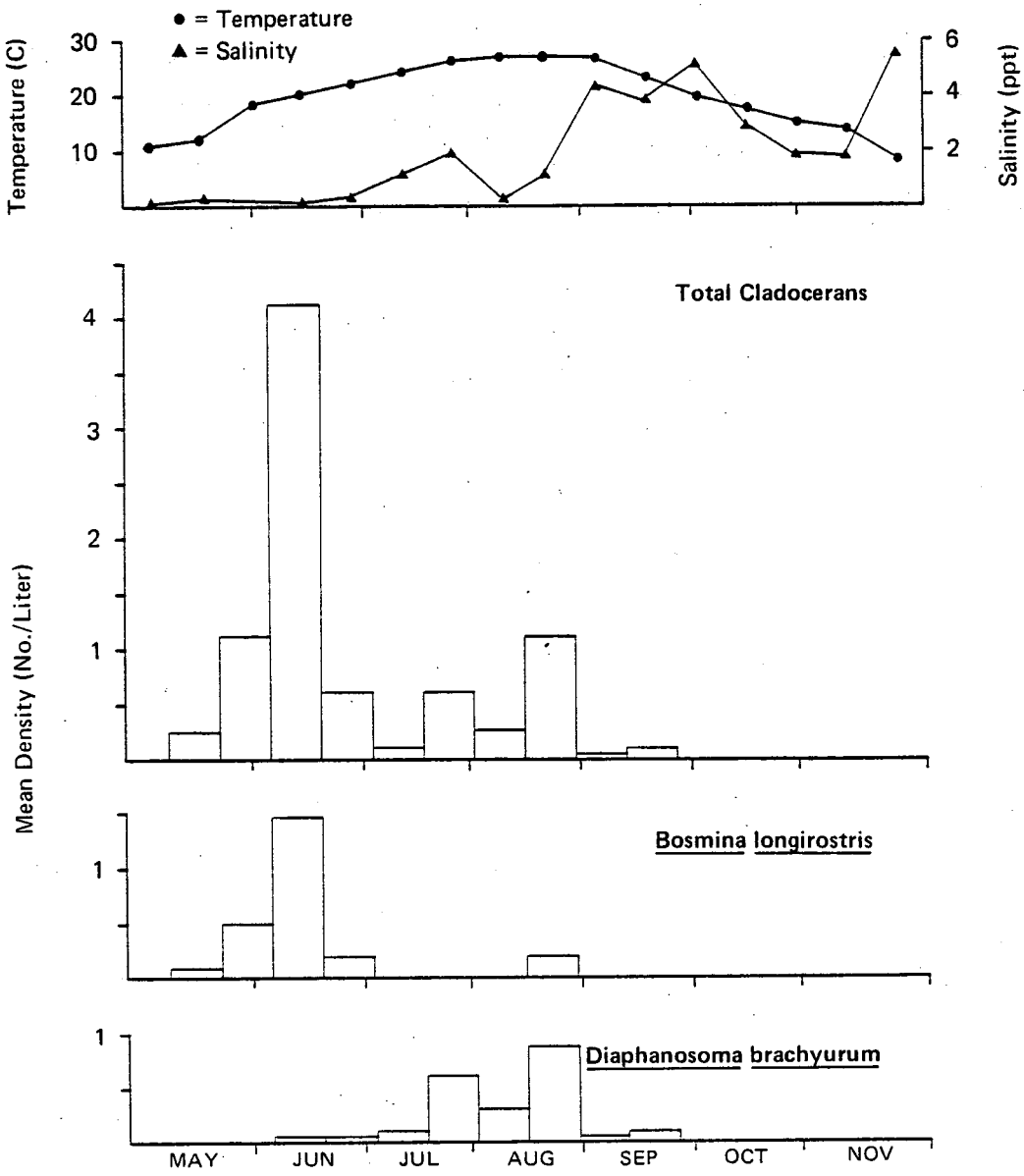

Figure 5-4. Mean densities (No./liter) of total cladocerans, Bosmina longirostris, and Diaphanosoma brachyurum collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978. (See Appendix C for water quality data.)

ring the day than at night for total crustaceans, total copepods, Acartia hsa, and total rotifers, whereas mean densities were significantly greater during the night than during the day for total cladocerans and Diaphanosoma brachyurum.

In addition to these three main factors, interactions between date and station, date and day/night, and station and day/night were examined (Table 5-5). The results indicated that seasonal trends in abundance (date effect) were not consistent at all stations for four taxa: Halicyclops fosteri (copepod), total cladocerans, Diaphanosoma brachyurum (cladoceran), and total rotifers. Seasonal trends in abundance were also observed to differ significantly between day and night for these same four taxa and for Eurytemora affinis. Differences in salinity among stations, sampling dates and day/night collections may have contributed to the significance of these interaction terms. Diurnal variations in microzooplankton abundance were consistent among stations for all taxa examined.

For taxa whose abundance differed significantly among the near field stations, the Student-Newman-Keuls test was used to identify specific station differences (Table 5-6). The majority of the station differences occurred between Station F, the southernmost (downstream) station, and Station B, one of the stations farthest north (upstream). In most cases, densities were significantly greater at Station F than at Station B. However, densities of Diaphanosoma brachyurum were significantly lower at Station F, the station at which highest salinities occurred, than at all other stations except Station G. The distribution of Diaphanosoma brachyurum, predominantly a freshwater species, was probably influenced by the intrusion of the salt front into the Indian Point area during the summer, when this species was abundant (Con Edison 1978). Densities of all microzooplankton taxa at Stations C, D, and E, located in the immediate vicinity of the Indian Point plant, were similar to densities observed at other standard river stations, with the occasional exception of Station F (Table 5-6).

5.1.2 Macrozooplankton

5.1.2.1 Species Composition

A total of 40 macrozooplankton taxa, representing five phyla, were collected at standard river stations in the vicinity of the Indian Point Generating Station during the 1978 sampling season (Table 5-7). Crustacean macrozooplankton, constituting 96.8 percent of the average macrozooplankton catch per unit volume, included the three most abundant taxa collected (in order of decreasing abundance): Gammarus spp. (46.8 percent of the average catch), Neomysis americana (40.7 percent of the average catch), and Monoculodes edwardsi (6.8 percent of the average catch) (Table 5-8). Aquatic insects, including Chaoborus punctipennis and chironomid larvae and pupae, were the second most abundant group, constituting 2.5 percent of the average catch per unit volume. The remaining 0.7 percent comprised (in order of decreasing abundance) hydrozoans, oligochaetes, water mites, polychaetes, nemerteans, leeches, and flatworms.

observed for microzooplankton, a larger number of macrozooplankton taxa were identified from samples collected in 1978 than were found during near field studies conducted from 1971 through 1976 (Table 5-9). Of the 29 taxa

TABLE 5-6 RESULTS OF THE STUDENT-NEWMAN-KEULS MULTIPLE RANGE TEST ON MICROZOOPLANKTON TAXA THAT EXHIBITED SIGNIFICANT DIFFERENCES (α = 0.05) IN ABUNDANCE AMONG STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Taxa	Stations[b]						
Total Crustaceans	B	C	A	E	D	G	F
Total Copepods	B	C	A	E	D	G	F
Acartia tonsa	B	D	C	A	E	G	F
Diaphanasoma brachyurum	F	G	C	E	A	D	B
Total Rotifers	C	B	G	D	A	E	F

(a) Stations with mean densities that were not significantly different (α = 0.05) are underscored.
(b) Ordered from lowest abundance (left) to highest abundance (right).

TABLE 5-7 PHYLOGENETIC LIST OF MACROZOOPLANKTON COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

Phylum Cnidaria
- Class Hydrozoa
  - Order Hydroida
    - *Cordylophora lacustris*
  - Order Athecata

Phylum Platyhelminthes
- Class Turbellaria

Phylum Nemertea

Phylum Annelida
- Class Polychaeta
  - Family Ampharetidae
    - *Hypaniola* spp.
    - Unidentified form
  - Family Nereidae
  - Family Spionidae
    - *Scolecolepides* spp.
  - Unidentified form
- Class Oligochaeta
- Class Hirudinea

Phylum Arthropoda
- Class Arachnida
  - Order Acari
- Class Crustacea*
  - Subclass Branchiopoda
  - Subclass Branchiura
    - *Argulus* spp.
  - Subclass Malacostraca
    - Order Mysidacea
      - Family Mysidae
        - *Neomysis americana*
    - Order Cumacea

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* The cladoceran *Leptodora kindtii* (Class Crustacea) was also collected during near field macrozooplankton sampling in 1978. However, because this organism is considered a member of the microzooplankton community, its occurrence and abundance is presented only for the near field microzooplankton collections (Section 5.1.1).

TABLE 5-7 (CONT.)

- Order Isopoda
  - Suborder Anthuridea
    - Family Anthuridae
      - *Cyathura polita*
  - Suborder Flabellifera
    - Family Cymothidae
    - Unidentified form
  - Suborder Valvifera
    - Family Idoteidae
      - *Chiridotea almyra*
      - *Edotea triloba*
      - *Edotea* spp.
- Order Amphipoda
  - Family Aoridae
    - *Leptocheirus plumulosus*
    - *Leptocheirus* spp.
  - Family Corophiidae
    - *Corophium lacustre*
    - *Corophium* spp.
  - Family Gammaridae
    - *Gammarus* spp.
    - *Melita nitida*
    - *Melita* spp.
  - Family Oedicerotidae
    - *Monoculodes edwardsi*
- Unidentified form
- Order Decapoda
  - Family Crangonidae
    - *Crangon septemspinosa*

Class Insecta

- Order Diptera
  - Family Culcidae
    - *Chaoborus punctipennis* larvae and pupae
  - Family Tendipedidae larvae and pupae
  - Family Ceratopogonidae larvae and pupae
  - Unidentified dipteran pupae
- Order Odonata
- Order Coleoptera
- Order Neuroptera
- Order Lepidoptera
- Unidentified form

TABLE 5-8 MEAN DENSITIES AND PERCENT COMPOSITION OF MACROZOOPLANKTON COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Taxa	Mean Density (No./1,000 m^3)	Percent Composition[b]
Gammarus spp.	1,521.111	46.784
Neomysis americana	1,323.737	40.714
Monoculodes edwardsi	220.079	6.769
Chaoborus punctipennis larvae and pupae	47.576	1.463
Chironomidae larvae and pupae	32.962	1.014
Chiridotea almyra	17.660	0.543
Corophium spp.	16.673	0.513
Leptocheirus plumulosus	16.052	0.494
Leptocheirus spp.	15.606	0.480
Cordylophora lacustris	9.827	0.302
Oligochaeta	8.031	0.247
Crangon septemspinosa	3.970	0.122
Acari	3.776	0.116
Edotea triloba	2.704	0.083
Cyathura polita	2.595	0.080
Athecata	2.325	0.071
Melita spp.	1.632	0.050
Edotea spp.	1.297	0.040
Argulus spp.	1.220	0.038
Cymothidae	0.661	0.020
Melita nitida	0.651	0.020
Odonata	0.210	0.006
Unidentified Polychaeta	0.194	0.006
Nemertea	0.123	0.004
Nereidae	0.093	0.003
Hirudinea	0.087	0.003
Corophium lacustre	0.073	0.002
Amphipoda	0.065	0.002
Turbellaria	0.063	0.002
Hypaniola spp.	0.060	0.002
Cumacea	0.049	0.002
Ceratopogonidae larvae and pupae	0.048	0.001
Lepidoptera larvae and pupae	0.036	0.001
Unidentified Diptera pupae	0.025	0.001
Neuroptera	0.021	0.001
Coleoptera larvae	0.021	0.001

(a) Based on samples collected every two (2) weeks from May through November.
(b) Does not include bryozoans, copepods, cladocerans, comb jellies, crab zoeae, gastropods, pelecypods, and sedentary forms of benthic organisms.

TABLE 5-9 MACROZOOPLANKTON COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1971-1978[a]

Taxa	1971	1972	1974	1975	1976	1978
Ctenophora			X	X	X	
Coelenterata (= Cnidaria)						
Medusae	X	X	X	X	X	
Cordylophora lacustris						X
Athecata						X
Platyhelminthes						
Turbellaria						X
Nemertea						X
Annelida						
Oligochaeta	X	X	X	X	X	X
Polychaeta[b]	X	X	X	X	X	X
Hirudinea		X	X	X	X	X
Mollusca						
Gastropoda	X	X				X
Pelecypoda	X	X		X		X
Crustacea						
Copepoda						
Caligus spp.			X			
Branchyura						
Argulus spp.			X	X	X	X
Malacostraca						
Cumacea		X	X	X	X	X
Mysidacea						
Neomysis americana	X	X	X	X	X	X

(a) The occurrence of macrozooplankton taxa from 1971 through 1976 was reported by NYU (1978); analysis of 1977 data has not been completed.

(b) For 1978, polychaeta included Nereidae, *Hypaniola* spp., *Scolecolepides* spp. Ampharetidae, and an unidentified form.

TABLE 5-9 (Cont.)

Taxa	1971	1972	1974	1975	1976	1978
Isopoda						
Unidentified Flabellifera						X
Cymothidae						X
Chiridotea almyra	X	X	X	X	X	X
Cyathura polita	X	X	X	X	X	X
Edotea spp.	X	X	X	X	X	X
Edotea triloba						X
Cirolana spp.			X	X	X	
Cassidinidea lunifrons					X	
Amphipoda						
Gammarus spp.	X	X	X	X	X	X
Monoculodes edwardsi	X	X	X	X	X	X
Leptocheirus plumulosus	X	X	X	X	X	X
Leptocheirus spp.						X
Corophium lacustre						X
Corophium spp.	X	X	X	X	X	X
Melita nitida						X
Melita spp.						X
Unidentified Amphipoda						X
Decapoda						
Crangon septemspinosa	X	X	X	X	X	X
Decapod larvae (zoea)		X	X	X	X	
Palaemonetes spp.				X	X	
Insecta						
Odonata (nymphs and adults)	X	X	X	X	X	X
Diptera (larvae, pupae, or adults)						
Chaoborus spp.	X	X	X	X	X	X
Chironomidae	X	X	X	X	X	X
Ceratopogonidae						X
Unidentified dipteran (pupae)						X
Plecoptera (nymphs)				X		
Trichoptera (larvae)					X	
Coleoptera (larvae)						X
Neuroptera						X
Lepidoptera (larvae and pupae)						X
Unidentified Insecta						X
Hydracarina (= Acari)	X	X	X	X	X	X

identified in collections from previous years (NYU 1978), 20 also occurred in the 1978 collections. A total of 18 taxa found in 1978 were not identified in previous years (not including the 5 polychaete taxa identified to the family or genus level in 1978). However, these 18 taxa previously unreported in macrozooplankton collections were not abundant; together they accounted for approximately one percent of the average macrozooplankton catch per unit volume. Of these 18 taxa, the most abundant were Leptocheirus spp., an amphipod (0.48 percent of the average catch) and Cordylophora lacustris, a hydrozoan (0.30 percent of the average catch).

5.1.2.2 Relative Abundance and Distribution

5.1.2.2.1 Total Macrozooplankton

Macrozooplankton were most abundant during late May and early June, the greatest abundance typically occurring at night (Figure 5-5, Table 5-10). The mean densities of total macrozooplankton collected in the course of the sampling period ranged from 2,241 to 22,353 per 1,000 m^3 during the night and from 1,124 to 8,742 per 1,000 m^3 during the day (averaged over all stations and sampling depths). Gammarus spp. (amphipod) dominated collections during May and June, whereas Neomysis americana (mysid shrimp) dominated collections during the remainder of the sampling period (Table 5-10, Figure 5-6).

5.1.2.2.2 Gammarus spp.

Gammarus spp. were collected at all standard river stations throughout the sampling period. The majority of Gammarus spp. were collected during May and June (Figure 5-6). During this time, average densities of Gammarus spp. were typically higher during the night than during the day, with mean densities ranging from 996.2 to 20,462.5 per 1,000 m^3 at night and from 244.1 to 4,810.9 per 1,000 m_3 during the day (averaged over all sampling depths and stations) (Table 5-10).

Gammarus spp. were most abundant at the bottom and least abundant at the surface, as shown in Table 5-11. The fact that stratification by depth was not as pronounced during the night as during the day is attributed to the nightly upward migrations characteristic of this species.

TABLE 5-11 MEAN DENSITY OF GAMMARUS SPP. COLLECTED AT THE STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

	Mean Density (No./1,000 m^3)(a)		
	Bottom	Middepth	Surface
Day	2,264.7	172.8	33.9
Night	3,380.7	2,257.9	1,049.5

(a) Averaged over all sampling dates and stations.

TABLE 5-10 MEAN DENSITIES OF GAMMARUS SPP., NEOMYSIS AMERICANA, MONOCULODES EDWARDSI, CHAOBORUS PUNCTIPENNIS, AND TOTAL MACROZOOPLANKTON COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Sampling Week	Mean Density (No./1,000 m^3)[b]									
	Gammarus spp.		Neomysis americana		Monoculodes edwardsi		Chaoborus punctipennis		Total Macrozooplankton	
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
5 MAY	2,547.8	7,041.9	0	0	38.1	60.7	21.4	121.5	2,626.0	6,591.4
17 MAY	4,810.9	1,625.9	470.7	174.2	66.6	22.4	97.2	41.4	5,699.4	2,240.9
31 MAY	3,433.5	20,462.5	0.6	0	5.3	14.0	26.6	147.6	4,129.7	22,352.7
14 JUN	244.1	996.2	2.4	2.6	0.7	2.7	20.4	14.9	8,742.5	8,281.6
26 JUN	1,222.1	1,464.7	55.1	207.3	59.3	217.7	31.9	71.3	3,232.4	4,120.4
10 JUL	86.0	162.3	1,145.6	2,328.3	117.0	360.6	109.3	69.1	2,003.3	3,367.0
25 JUL	64.1	115.3	1,286.4	3,165.9	52.7	237.1	99.4	190.0	1,576.0	3,762.0
8 AUG	31.4	173.8	1,150.1	3,368.9	93.5	210.0	82.1	120.8	1,477.9	4,146.0
22 AUG	109.0	496.4	1,144.3	1,836.0	178.5	1,013.0	56.1	169.3	1,577.2	4,500.0
5 SEP	97.9	222.5	937.4	3,358.1	55.8	385.4	3.6	10.0	1,186.6	4,192.5
18 SEP	29.3	170.4	1,172.7	2,325.5	40.9	329.3	0	4.3	1,299.1	3,063.2
5 OCT	185.1	337.7	780.3	1,944.4	45.0	313.2	1.2	3.5	1,223.1	2,721.8
17 OCT	39.8	575.9	1,263.5	3,261.9	65.5	545.2	0	8.3	1,467.7	4,494.5
31 OCT	113.6	917.9	1,373.8	2,839.0	122.0	909.3	0.3	2.2	1,733.6	4,784.9
14 NOV	86.7	1,151.5	1,037.9	1,871.8	166.3	971.5	1.0	2.9	1,438.8	4,218.9
28 NOV	64.9	454.9	1,039.2	2,361.5	24.2	248.4	0	1.5	1,124.2	3,098.6
MEAN	825.1	2,223.0	803.0	1,848.3	70.9	370.9	34.5	60.7	2,533.3	5,371.0

(a) See Appendix Tables D.2-1 through D.2-13 for densities of selected macrozooplankton taxa collected at each station.

(b) Mean density = $\frac{\sum\sum^{ab} Y}{n}$

where

Y = density at a given station (a) and sampling depth (b)

n = number of samples collected during a given sampling time (day or night) in a given sampling week.

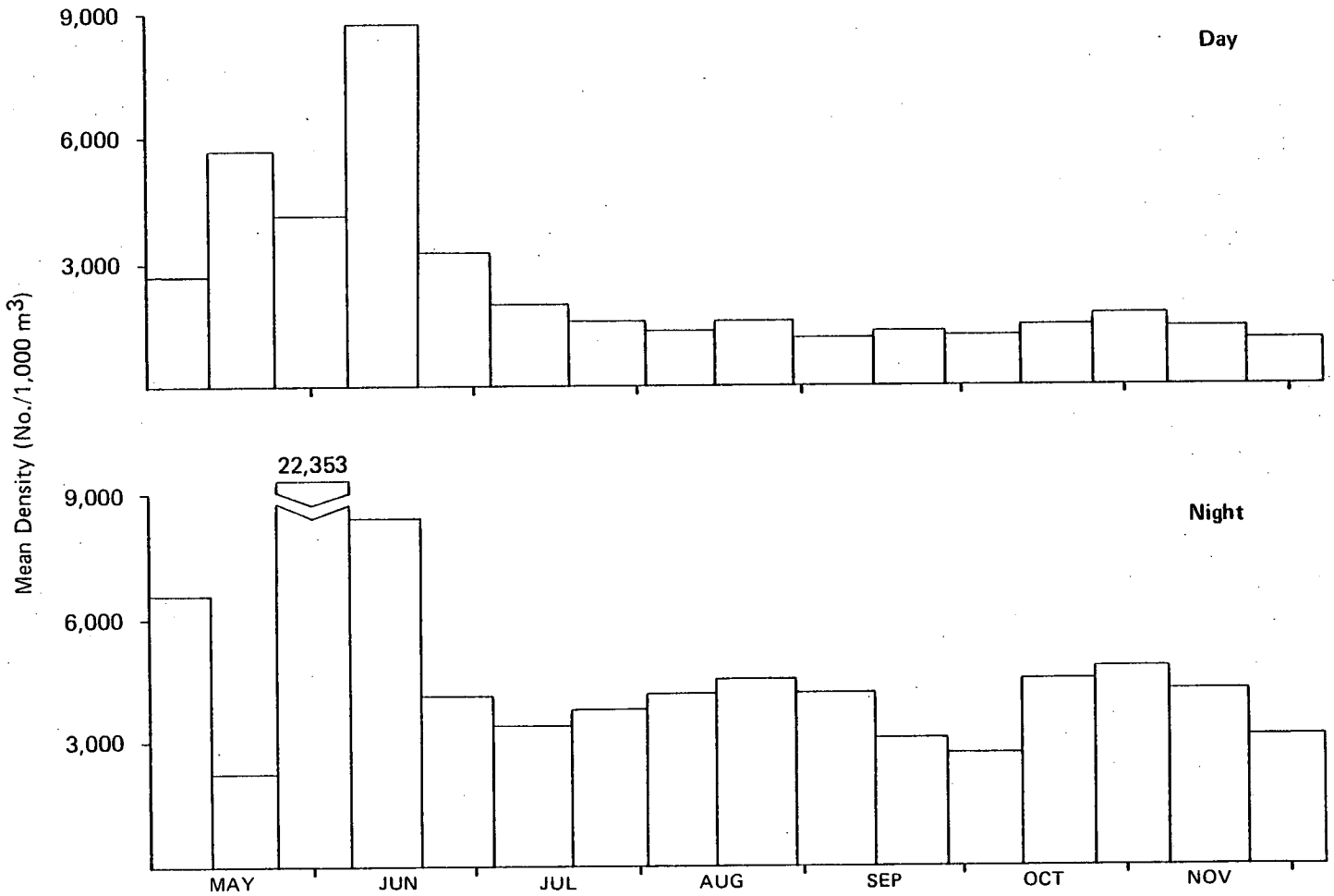


Figure 5-5. Day and night mean densities (No./1,000 m^3) of total macrozooplankton collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.

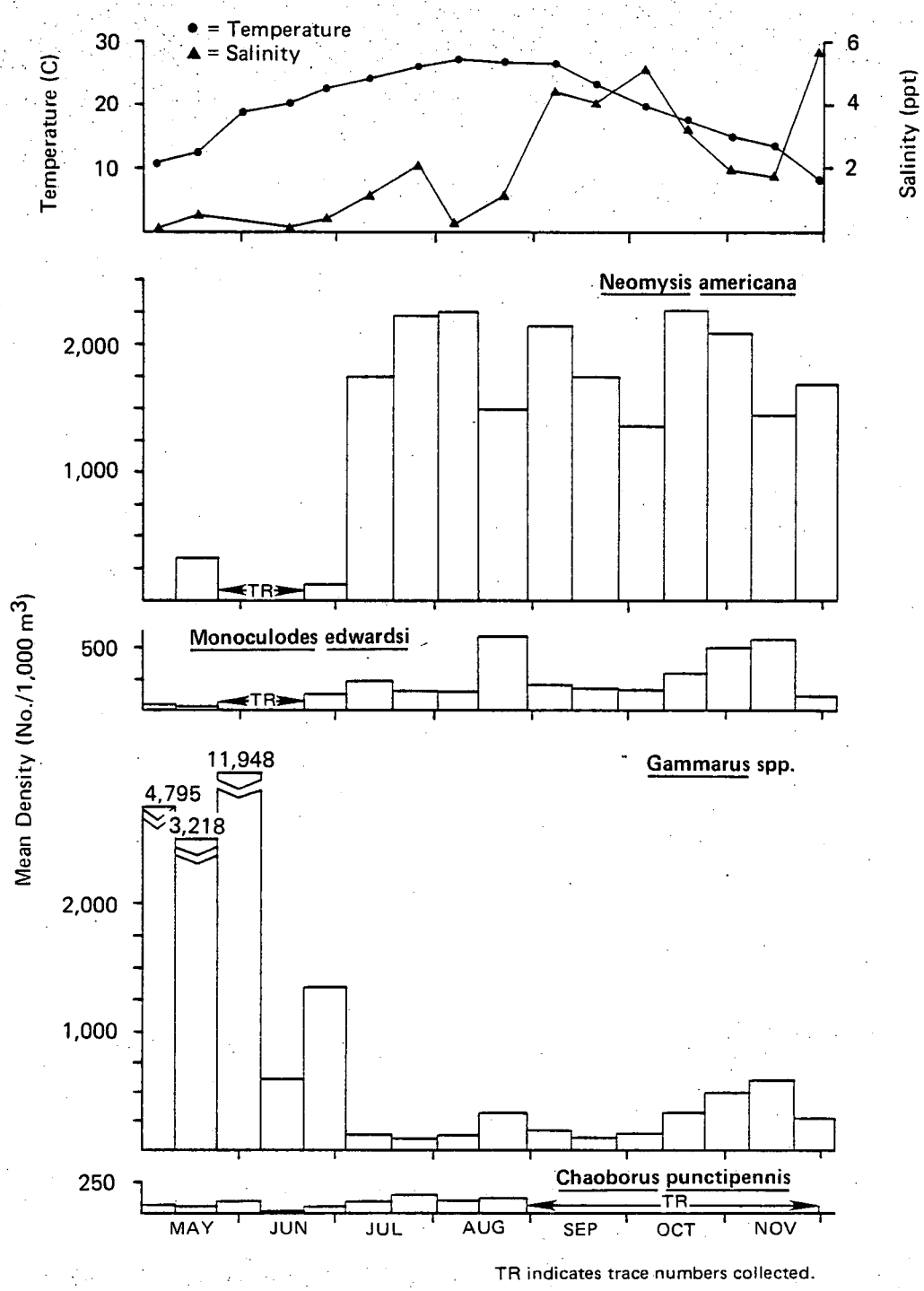


Figure 5-6. Mean densities (No./1,000 m^3) of four major macrozooplankton taxa (Neomysis americana, Monoculodes edwardsi, Gammarus spp., and Chaoborus punctipennis) collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978. (See Appendix C for water quality data.)

The seasonal abundance pattern of Gammarus spp. indicated that densities were normally highest at lower salinity levels. As shown in Figure 5-6, the abundance of Gammarus spp. was highest during May and June, when salinity levels were typically low, whereas abundance was much lower throughout the remainder of the sampling period when salinities were generally higher. Furthermore, the lowest abundance of Gammarus spp. typically occurred at Station F, which usually had the highest salinity levels; in contrast, the highest Gammarus spp. abundance was observed at Stations A and B, two of the lowest salinity stations.

5.1.2.2.3 Neomysis americana

Neomysis americana was collected from mid-May through November (Figure 5-6). The abundance of N. americana was quite low throughout May and June, but increased sharply in July and remained high from July through the end of the sampling period (November). During this time (July-November), the mean density of N. americana, averaged over all sampling depths and stations, was generally lower during the day (780.3 to 1,373.8 per 1,000 m^3) than at night (1,836.0 to 3,368.9 per 1,000 m^3) (Table 5-10).

During the day, N. americana was most abundant at the bottom, and was collected only infrequently at the surface. At night, vertical migration of N. americana resulted in increased abundance at middepth and at the surface, as shown in Table 5-12.

TABLE 5-12 MEAN DENSITY OF NEOMYSIS AMERICANA COLLECTED AT THE STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

	Mean Density (No./1,000 m^3)[a]		
	Bottom	Middepth	Surface
Day	2,063.4	326.0	18.5
Night	1,896.9	1,987.5	1,641.7

(a) Averaged over all sampling dates and stations.

The abundance of N. americana was closely related to the intrusion of the salt front in the vicinity of the Indian Point plant. As shown in Figure 5-6, N. americana were usually most abundant at salinities greater than 1.0 ppt; at lower salinities they were collected infrequently and in relatively low numbers.

5.1.2.2.4 Monoculodes edwardsi

Monoculodes edwardsi was collected in the vicinity of the Indian Point plant throughout the sampling period (Figure 5-6). The seasonal trend in the abundance of M. edwardsi was similar to the seasonal trend observed for Neomysis americana; however, M. edwardsi were normally much less abundant than

americana. Average densities of M. edwardsi (averaged over all sampling depths and stations) ranged from 0.7 to 178.5 per 1,000 m^3 during the day and from 2.7 to 1,013.0 per 1,000 m^3 at night (Table 5-10).

Densities of M. edwardsi were usually higher at night than during the day at all sampling depths, and highest densities were observed at the bottom. Few M. edwardsi were collected at the middepth and surface sampling locations during the day. At night, however, densities of M. edwardsi at these depths were much higher, as shown in Table 5-13, indicating an upward migration in the water column after dark.

TABLE 5-13 MEAN DENSITY OF MONOCULODES EDWARDSI COLLECTED AT THE STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

	Mean Density (No./1,000 m^3)[a]		
	Bottom	Middepth	Surface
Day	202.2	7.5	2.3
Night	546.6	393.8	174.6

[a] Averaged over all sampling dates and stations.

As observed for Neomysis americana, the distribution and abundance of Monoculodes edwardsi appeared to be related to the intrusion of the salt front in the vicinity of the Indian Point plant. Densities of M. edwardsi were very low at all stations on 14 June, when salinities were about 0.1 ppt (Figure 5-6). Densities increased substantially after 14 June as salinity levels exceeded about 0.2 ppt. The greatest abundance of M. edwardsi was observed in late August, when salinity ranged from 0.2 ppt to 2.6 ppt (depending on depth, station, and sampling time). At higher salinities, however, the abundance of M. edwardsi decreased. During the late summer and fall, the abundance of M. edwardsi was much lower when salinities were greater than about 3 ppt than when salinities were less than 3 ppt (Figure 5-6). Furthermore, the lowest abundance of M. edwardsi typically was observed at Station F, the southernmost (downstream) station, which usually had the highest salinity levels. In contrast, the highest M. edwardsi abundance was observed at the two northernmost stations, A and B, where salinity levels were generally lower (Appendix Tables C.1-3 and C.1-4).

5.1.2.2.5 Chaoborus punctipennis

The aquatic life stages of Chaoborus punctipennis (phantom midge), the most abundant aquatic insect collected, occurred predominately during the spring and summer in the vicinity of the Indian Point plant. C. punctipennis were collected throughout the entire sampling period (May through November) but were not abundant after August (Figure 5-6).

As observed for the other major macrozooplankton taxa, densities of C. punctipennis were typically higher during the night than during the day (Table 5-10). C. punctipennis were also most abundant at the bottom and least abundant at the surface during the day, as shown in Table 5-14. Because of nightly upward migrations typical of this species, densities at middepth and at the surface were much higher during the night than during the day.

TABLE 5-14 MEAN DENSITY OF CHAOBORUS PUNCTIPENNIS COLLECTED AT THE STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

	Mean Density (No./1,000 m^3)[a]		
	Bottom	Middepth	Surface
Day	82.8	14.8	5.9
Night	80.9	44.3	58.0

(a) Averaged over all sampling dates and stations.

Salinity appeared to be an important factor determining the abundance and distribution of C. punctipennis in the vicinity of the Indian Point plant. As observed for Gammarus spp. and Monoculodes edwardsi, the abundance of Chaoborus punctipennis was lowest at Station F, where the highest salinities were usually observed. Stations with the highest abundance of C. punctipennis were generally the northernmost stations, where salinities were normally less than those observed at the downstream stations.

5.1.2.3 Analysis of Variance for Selected Macrozooplankton Taxa

Analysis of variance was conducted for Gammarus spp., Neomysis americana, Monoculodes edwardsi, and Chaoborus punctipennis to determine if the abundance of these taxa differed significantly from station to station (α = 0.05). Sampling date, depth, and day/night were also included as main factors. The results of these analyses indicated that, for all four taxa, densities varied significantly ($P < 0.05$) among stations, among sampling dates, among depths, and between day and night (Table 5-15).

In order to locate specific station differences, the Student-Newman-Keuls test was conducted (Table 5-16). For Gammarus spp., Monoculodes edwardsi, and Chaoborus punctipennis, statistically significant station-to-station differences (α = 0.05) generally corresponded to salinity differences among the stations (Appendix Tables C.1-3 and C.1-4). The mean densities of all three species at Station F, the station of highest salinity, were significantly lower than at Stations A and B, two of the lowest salinity stations. For Neomysis americana, however, the mean densities observed at the upstream stations (lower salinity) were not significantly different from the mean densities observed at the downstream stations (higher salinity).
The abundances of Monoculodes edwardsi, Gammarus spp., and Chaoborus

TABLE 5-15 RESULTS OF ANALYSIS OF VARIANCE (X INDICATES SIGNIFICANCE AT $\alpha = 0.05$) ON DENSITIES OF *GAMMARUS* SPP., *NEOMYSIS AMERICANA*, *MONOCULODES EDWARDSI*, AND *CHAOBORUS PUNCTIPENNIS* COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

	Gammarus spp.	*Neomysis americana*	*Monoculodes edwardsi*	*Chaoborus punctipennis*
Main Factors				
Date	X	X	X	X
Station	X	X	X	X
Depth	X	X	X	X
Day/Night	X	X	X	X
Interactions				
Date x Station	X	X	--	X
Date x Depth	X	X	X	X
Date x Day/Night	X	X	X	X
Station x Depth	--	--	--	--
Station x Day/Night	--	X	--	--
Depth x Day/Night	X	X	X	X

(a) See Appendix Tables E.2-1 through E.2-4 for analysis of variance.

Note: Dashes (--) indicate non-significance (i.e., $P > 0.05$).

TABLE 5-16 RESULTS OF THE STUDENT-NEWMAN-KEULS MULTIPLE RANGE TEST ON SELECTED MACROZOOPLANKTON TAXA COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Taxon	Stations[b]						
Gammarus spp.	F	G	C	E	D	A	B
Neomysis americana	C	B	F	A	G	E	D
Monoculodes edwardsi	F	E	C	G	D	B	A
Chaoborus punctipennis	F	G	E	A	C	B	D

(a) Stations with mean densities that were not significantly different ($\alpha = 0.05$) are underscored.
(b) Ordered from lowest abundance (left) to highest abundance (right).

nctipennis at Stations C, D, and E--located in the immediate vicinity of e Indian Point plant--were similar to abundances observed at most of the other standard river stations. In contrast, however, the abundance of Neomysis americana was significantly higher ($\alpha = 0.05$) at Station D, located immediately offshore of the plant, than at Station C, parallel to Station D but located farther offshore (midchannel). The abundances of N. americana at all other stations were not significantly different.

The higher abundance of N. americana at Station D than at Station C may have been associated with hydrological factors that affected the distribution of this species. An examination of the depth distribution of N. americana at Stations C and D also indicated an additional source of variation not observed at other stations. In contrast to the normal trend of low N. americana densities at the surface and middepth sampling locations during the day, densities of N. americana at Stations C and D were often relatively high during the day at both the middepth and the surface, as shown in Table 5-17.

This phenomenon was not consistently observed at Stations C and D, and was not apparent at night, primarily because densities of N. americana at the middepth and surface sampling locations were high at all stations as a result of nightly vertical migrations. Higher daytime abundances of other macrozooplankton species were also occasionally observed at the middepth and surface sampling locations at Stations C and D, but the phenomenon was most apparent for N. americana because of its higher abundance. A possible explanation for this phenomenon is that organisms withdrawn from the lower depths at the ant intakes are being re-distributed at the surface when the cooling water discharged back into the river. The fact that this phenomenon was not always apparent may be related to varying tidal conditions.

In addition to examining the significance of the four main factors, all 2-way interactions were examined to determine if the trends explained by each main factor were consistent within other main factors. An analysis of the interactions with date indicated that seasonal trends were generally not consistent (significant at $\alpha = 0.05$) among the three sampling depths, between day and night, nor among stations. Because the relative abundance and distribution of all four selected macrozooplankton species was influenced by salinity, salinity differences between day and night and among sampling depths and stations may have been a predominate factor contributing to the significance of these interactions.

Significant interactions were also observed between station and day/night for N. americana and between depth and day/night for all species. The station-day/night interaction observed for N. americana probably resulted from the higher densities often observed at the middepth and surface strata at Stations C and D, as previously described. The depth-day/night interactions were likely the result of the nightly vertical migration behavior typical of all four species.

5.1.3 Ichthyoplankton

5.1.3.1 Species Composition

Twenty-two ichthyoplankton taxa, representing 17 families, were collected at standard river stations in the vicinity of the Indian Point Generating Station

TABLE 5-17 DENSITIES OF *NEOMYSIS AMERICANA* COLLECTED DURING THE DAY AT STATIONS C AND D IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 10 JULY THROUGH 17 OCTOBER 1978

Sampling Date	Station D			Station C		
	Bottom	Middepth	Surface	Bottom	Middepth	Surface
10 JUL	7,067.9	36.6	27.9	5,344.0	0.0	0.0
25 JUL	2,487.3	3,948.0	4.3	3,787.5	6.9	0.0
8 AUG	3,083.0	16.5	50.4	3,037.5	13.4	29.1
22 AUG	1,690.9	1,738.9	65.6	3,059.0	2,177.8	0.0
5 SEP	1,036.2	3,254.0	318.3	1,415.3	0.0	11.3
18 SEP	3,032.8	7,030.6	143.1	1,730.1	2,809.4	91.1
5 OCT	1,387.8	330.5	28.6	1,865.2	0.0	6.7
17 OCT	4,941.7	3,516.7	235.9	0.0	1,112.0	58.0

ring the 1978 sampling season (Table 5-18). The average density of hthyoplankton for all samples combined was 687.3 per 1,000 m^3 (Table 5-19). The majority of ichthyoplankton collected were post yolk-sac larvae, which constituted 56.2 percent of the average ichthyoplankton catch per unit volume. An additional 39.3 percent were eggs, 4.0 percent were yolk-sac larvae, and 0.5 percent were juveniles.

The taxonomic composition of ichthyoplankton collections in 1978 was similar to that observed during near field studies conducted from 1971 through 1977 (NYU 1978) (Table 5-20). Of the 24 taxa identified in collections from previous years, 17 also occurred in 1978 collections. Three taxa identified in 1978 samples (winter flounder, Ammodytidae, and white sucker) were not collected previously; however, these taxa accounted for less than 0.1 percent of the average ichthyoplankton catch per unit volume. Seven taxa collected in previous years were not found in 1978 collections. Of these, the crevalle jack, silver perch, gobie, and windowpane flounder are marine species which enter the Hudson River on an incidental basis (McFadden 1978); the remaining three taxa (i.e., Atlantic sturgeon, white catfish, and stickleback) are resident within the Hudson River, however, their early life stages have historically been collected infrequently or in low abundance in the vicinity of the Indian Point plant (Con Edison 1978).

5.1.3.2 Relative Abundance and Distribution

5.1.3.2.1 Total Ichthyoplankton

tal ichthyoplankton exhibited two periods of peak abundance in 1978. The first peak occurred in mid-June, and consisted largely of *Alosa* spp. and striped bass post yolk-sac larvae (Figure 5-7, Table 5-21). The highest average density of total ichthyoplankton (all species and life stages combined) in June was 1,185.4 per 1,000 m^3. The second peak abundance of ichthyoplankton occurred in mid-July and consisted almost entirely of bay anchovy eggs and larvae (Figure 5-7, Table 5-21). The highest average density of total ichthyoplankton (all species and life stages combined) in July was 4,335.8 per 1,000 m^3. Ichthyoplankton abundances were relatively low in late summer and fall (August-December).

The most abundant taxa of ichthyoplankton collected were (in order of decreasing abundance) bay anchovy, *Alosa* spp., striped bass, white perch, and Atlantic tomcod (Table 5-19). These five taxa constituted 95.3 percent of the average catch per unit volume; bay anchovy eggs and larvae alone constituted 64.5 percent of the average catch per unit volume.

5.1.3.2.2 Striped Bass

Striped bass constituted 9.2 percent of the average ichthyoplankton catch per unit volume (Table 5-19), and occurred predominantly during late May and June (Figure 5-8). Striped bass eggs were present from early May through the first week of June, and were collected at water temperatures ranging from 11.4 to 21.9 C. Peak abundance of striped bass eggs (170.2 per 1,000 m^3, averaged ver all stations and sampling depths) was observed during late May, when the erage water temperature at the time of collection was 15.5 C. Yolk-sac larvae were collected from mid-May through June; peak abundance (131.2 per 1,000 m^3, averaged over all stations and depths) was observed during the

TABLE 5-18 COMMON AND SCIENTIFIC NAMES OF ICHTHYOPLANKTON TAXA COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

Freshwater eels - Anguillidae
- American eel - *Anguilla rostrata*

Herrings - Clupeidae
- Blueback herring - *Alosa aestivalis*
- Alewife - *Alosa pseudoharengus*
- American shad - *Alosa sapidissima*
- Atlantic menhaden - *Brevoortia tyrannus*

Anchovies - Engraulidae
- Bay anchovy - *Anchoa mitchilli*

Smelts - Osmeridae
- Rainbow smelt - *Osmerus mordax*

Minnows and carps - Cyprinidae

Suckers - Catostomidae
- White sucker - *Catostomus commersoni*

Cods - Gadidae
- Atlantic tomcod - *Microgadus tomcod*

Killifishes - Cyprinodontidae
- Banded killifish - *Fundulus diaphanus*

Silversides - Atherinidae

Pipefishes and seahorses - Syngnathidae
- Northern pipefish - *Syngnathus fuscus*

Temperate basses - Percichthyidae
- White perch - *Morone americana*
- Striped bass - *Morone saxatilis*

Sunfishes - Centrarchidae
- Sunfish - *Lepomis* spp.

Perches - Percidae
- Darters - *Etheostoma* spp.
- Yellow perch - *Perca flavescens*

Drums - Scianidae
- Weakfish - *Cynoscion regalis*

TABLE 5-18 (CONT.)

Sand lances - Ammodytidae

Righteye flounders - Pleuronectidae
    Winter flounder - *Pseudopleuronectes americanus*

Soles - Soleidae
    Hogchoker - *Trinectes maculatus*

TABLE 5-19 MEAN DENSITIES AND PERCENT COMPOSITION OF ICHTHYOPLANKTON COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Taxon/Life Stage	Mean Density (No./1,000 m^3)	Percent Composition
Bay anchovy		
Eggs	257.792	37.505
Yolk-sac larvae	0.723	0.105
Post yolk-sac larvae	184.896	26.900
Juveniles	0.253	0.037
Total	443.664	64.547
Alosa spp.		
Eggs	0.183	0.027
Yolk-sac larvae	1.420	0.207
Post yolk-sac larvae	68.450	9.959
Juveniles	0.288	0.041
Unidentified	0.006	0.001
Total	70.347	10.235
Striped bass		
Eggs	11.139	1.621
Yolk-sac larvae	13.108	1.907
Post yolk-sac larvae	38.367	5.582
Juveniles	0.008	0.001
Unidentified	0.313	0.046
Total	62.935	9.157
White perch		
Eggs	0.291	0.042
Yolk-sac larvae	5.496	0.800
Post yolk-sac larvae	45.443	6.611
Unidentified	0.011	0.002
Total	51.241	7.455
Atlantic tomcod		
Yolk-sac larvae	1.092	0.159
Post yolk-sac larvae	24.694	3.593
Juveniles	0.940	0.137
Total	26.726	3.889

TABLE 5-19 (CONT.)

Taxon/Life Stage	Mean Density (No./1,000 m^3)	Percent Composition
Rainbow smelt		
Yolk-sac larvae	0.096	0.014
Post yolk-sac larvae	16.018	2.330
Juveniles	0.775	0.113
Unidentified	0.006	0.001
Total	16.895	2.458
Morone spp.[b]		
Yolk-sac larvae	3.306	0.481
Post yolk-sac larvae	3.449	0.502
Total	6.755	0.983
Unidentified[c]		
Eggs	0.493	0.072
Post yolk-sac larvae	2.549	0.371
Total	3.042	0.443
Etheostoma spp.		
Yolk-sac larvae	1.259	0.183
Post yolk-sac larvae	0.676	0.098
Juveniles	0.015	0.002
Total	1.950	0.283
American eel		
Post yolk-sac larvae	0.007	0.001
Juveniles	1.105	0.161
Total	1.112	0.162
Cyprinidae		
Eggs	0.007	0.001
Yolk-sac larvae	0.443	0.064
Post yolk-sac larvae	0.426	0.062
Unidentified	0.007	0.001
Total	0.883	0.128
Others[d]		
Eggs	0.008	0.001
Yolk-sac larvae	0.348	0.050
Post yolk-sac larvae	1.380	0.199
Juveniles	0.048	0.007
Unidentified	0.013	0.002
Total	1.797	0.259

TABLE 5-19 (CONT.)

Taxon/Life Stage	Mean Density (No./1,000 m^3)	Percent Composition
Total		
Eggs	216.913	32.269
Yolk-sac larvae	27.291	3.970
Post-yolk-sac larvae	386.355	56.208
Juveniles	3.432	0.500
Unidentified	0.356	0.053
Total	687.347	100.000

(a) Based on monthly collections during March through April, weekly collections during May through July, and monthly collections during August through December.

(b) Includes ichthyoplankton that were identified to the genus Morone spp. but were damaged to the extent that identification to species was not possible.

(c) Includes ichthyoplankton that were damaged to the extent that no degree identification was possible.

(d) Includes ichthyoplankton that were collected infrequently and in low numbers, i.e., American eel, Atlantic menhaden, banded killifish, silversides (Menidia spp.), northern pipefish, sunfishes (Lepomis spp.), yellow perch, weakfish, sandlances (Ammodytidae spp.), winter flounder, and hogchocker.

TABLE 5-20 ICHTHYOPLANKTON TAXA COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1971-1978[a]

Taxa	1971	1972	1973	1974	1975	1976	1978
Atlantic sturgeon	X	X			X	X	
American eel	X	X	X	X	X	X	X
Herrings (*Alosa* spp.)[b]	X	X	X	X	X	X	X
Atlantic menhaden	X						X
Anchovies (Engraulidae)	X	X	X	X	X	X	X
Smelts (Osmeridae)	X	X	X	X	X	X	X
Minnows & Carps (Cyprinidae)	X	X	X	X	X	X	X
White sucker							X
White catfish			X		X	X	
Atlantic tomcod	X	X	X	X	X	X	X
Killifishes (Cyprinodontidae)	X		X		X	X	X
Silversides (Atherinidae)	X	X	X	X	X	X	X
Sticklebacks (Gasterosteidae)			X				
Pipefishes (Syngnathidae)	X		X	X	X	X	X
White perch	X	X	X	X	X	X	X
Striped bass	X	X	X	X	X	X	X
Sunfishes (Centrarchidae)			X	X	X	X	X
Yellow perch	X	X	X	X	X	X	X
Darters (*Etheostoma* spp.)	X	X	X	X	X	X	X
Crevalle jack	X						
Silver perch			X				
Weakfish		X	X	X	X	X	X
Sand lances (Ammodytidae)							X
Gobies (Gobiidae)				X		X	
Windowpane flounder					X		
Winter flounder							X
Hogchoker	X	X	X	X	X	X	X

(a) The occurrence of ichthyoplankton taxa from 1971 through 1976 was previously reported by NYU (1978); analysis of 1977 data has not been completed.

(b) Includes blueback herring, alewife, and American shad for 1978 collections.

TABLE 5-21 MEAN DENSITIES OF FIVE SELECTED ICHTHYOPLANKTON TAXA AND TOTAL ICHTHYOPLANKTON COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Sampling Week	Mean Density (No./1,000 m^3)[b]											
	Striped Bass				White Perch				Bay Anchovy			
	Eggs	YSL	PYSL	Juv	Eggs	YSL	PYSL	Juv	Eggs	YSL	PYSL	Juv
21 MAR	0	0	0	0	0	0	0	0	0	0	0	0
20 APR	0	0	0	0	0	0	0	0	0	0	0	0
5 MAY	0	0	0	0	0	0	0	0	0	0	0	0
12 MAY	1.3	0	0	0	0	0	0	0	0	0	0	0
17 MAY	1.9	1.9	0	0	0	2.6	0	0	0	0	0	0
24 MAY	179.2	28.7	0.2	0	1.4	25.6	56.3	0	0	0	0	0
31 MAY	33.0	45.8	1.9	0	1.4	15.8	237.3	0	0	0	0	0
5 JUN	1.5	128.3	126.0	0	2.3	47.1	234.2	0	0	0	0	0
14 JUN	0	44.8	416.2	0	0.6	5.3	163.4	0	0	0	0	0
21 JUN	0	3.6	160.9	0	0	4.8	141.3	0	0.1	0	20.9	0
26 JUN	0	8.0	64.0	0.2	0	7.2	65.3	0	0	0.2	3.9	0
6 JUL	0	0	3.2	0	0	0	0.8	0	1,821.0	6.4	291.7	0
10 JUL	0	0	2.9	0	0	0.2	1.5	0	2,477.6	0.6	1,809.5	0
18 JUL	0	0	0.5	0	0	0	0.2	0	577.2	5.4	918.8	0
25 JUL	0	0	0	0	0	0	0.2	0	143.9	1.5	529.6	0
22 AUG	0	0	0	0	0	0	0	0	0.1	0	31.1	0.9
18 SEP	0	0	0	0	0	0	0	0	0	0	34.6	3.2
17 OCT	0	0	0	0	0	0	0	0	0	0	0.8	0.2
14 NOV	0	0	0	0	0	0	0	0	0	0	0.7	0
4 DEC	0	0	0	0	0	0	0	0	0	0	1.5	0.7

(a) See Appendix Tables D.3-1 through D.3-28 for densities of selected ichthyoplankton taxa collected at each station.

(b) Mean density = $\frac{\sum_{a}^{a}\sum_{b}^{b}\sum_{c}^{c} Y}{n}$:

where:

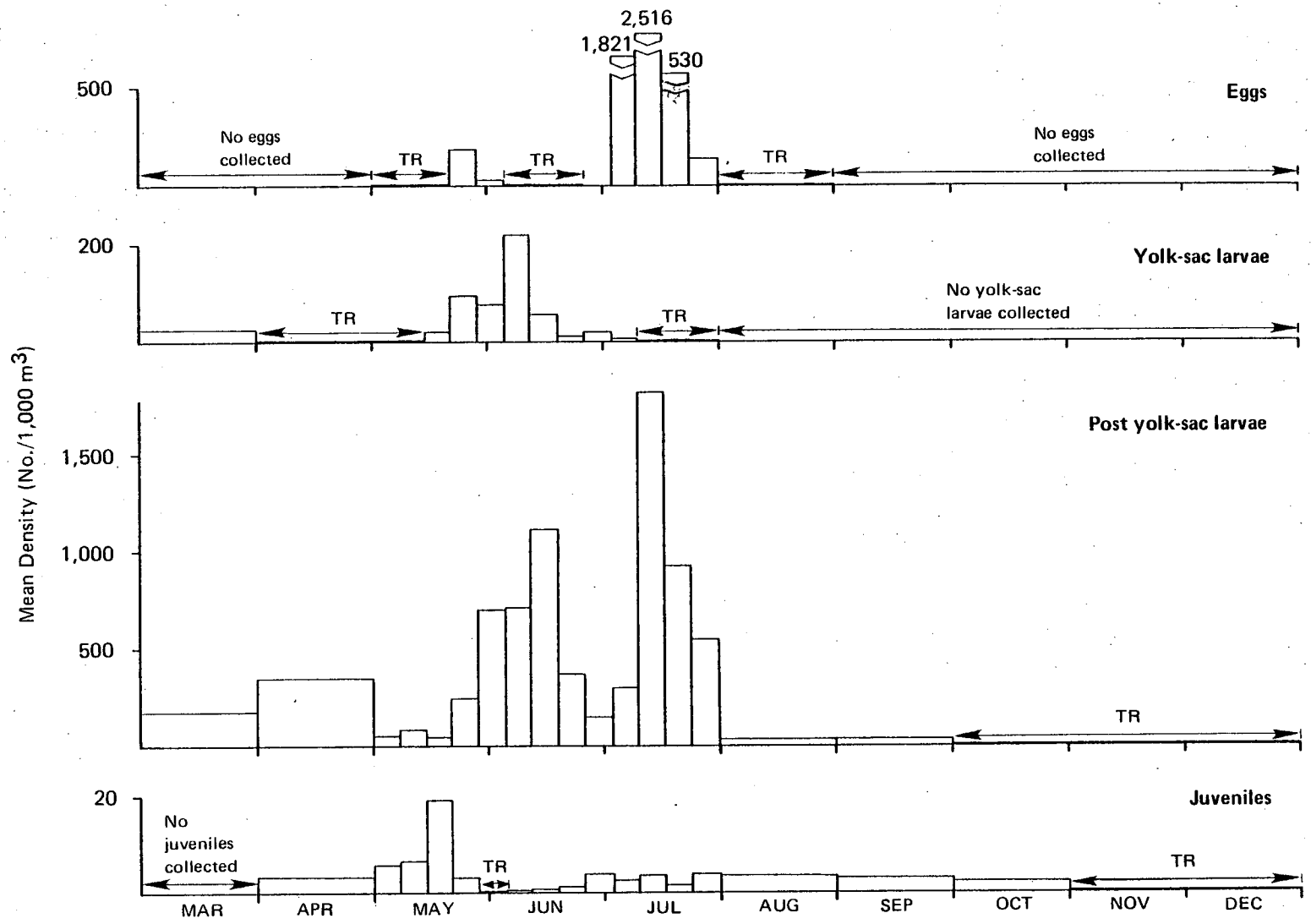
Y = density at a given station (a), sampling depth (b), and sampling time (day or night) (c).

n = number of samples collected during a given sampling week.

Note: YSL = yolk-sac larvae; PYSL = post yolk-sac larvae; Juv = juveniles.

TABLE 5 (EXTENDED)

Sampling week	Density (No./1,000 m^3)[b]											
	Alosa spp.				Atlantic Tomcod				Total Ichthyoplankton			
	Eggs	YSL	PYSL	Juv	Egg	YSL	PYSL	Juv	Eggs	YSL	PYSL	Juv
21 MAR	0	0	0	0	0	25.9	170.3	0	0	25.6	165.8	0
20 APR	0	0	0	0	0	0	338.9	0.2	0	0.3	349.3	3.7
5 MAY	0.9	0	0	0	0	0	0	1.6	1.0	2.4	57.8	5.4
12 MAY	2.0	1.5	3.5	0	0	0	0	0.6	3.5	3.2	92.4	6.5
17 MAY	0.4	14.5	16.6	0	0	0	0.6	14.0	8.4	22.2	57.4	18.8
24 MAY	0.6	5.3	103.2	0	0	0	0	0.5	181.9	96.2	250.8	3.0
31 MAY	0	2.8	427.3	0	0	0	0	0	34.5	77.4	703.5	0.2
5 JUN	0	4.0	327.4	0	0	0	0	0.4	3.8	218.7	703.8	0.8
14 JUN	0	0	463.4	0	0	0	0	0	1.0	58.2	1,126.2	0.8
21 JUN	0	0	22.4	0	0	0	0	0	0.8	10.2	371.4	1.4
26 JUN	0	0	2.7	0.9	0	0	0	0	0	16.8	150.0	4.0
6 JUL	0	0	0	0	0	0	0	0	1,821.0	6.8	296.6	2.7
10 JUL	0	0	0	0.8	0	0	0	0.2	2,516.0	0.8	1,815.4	3.6
18 JUL	0	0	0	0.9	0	0	0	0.2	530.1	5.6	919.8	1.8
25 JUL	0	0	0	0.4	0	0	0	0.2	144.0	1.5	547.6	4.0
22 AUG	0	0	0	0.2	0	0	0	0.5	0.1	0	31.8	3.8
18 SEP	0	0	0	0.2	0	0	0	0	0	0	34.6	3.4
17 OCT	0	0	0	2.2	0	0	0	0	0	0	0.8	2.5
14 NOV	0	0	0	0.2	0	0	0	0	0	0	0.8	0.6
4 DEC	0	0	2.2	0	0	0	0	0	0	0	1.8	0.6



TR indicates trace numbers collected.

Figure 5-7. Mean densities (No./1,000 m^3) of total ichthyoplankton collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978.

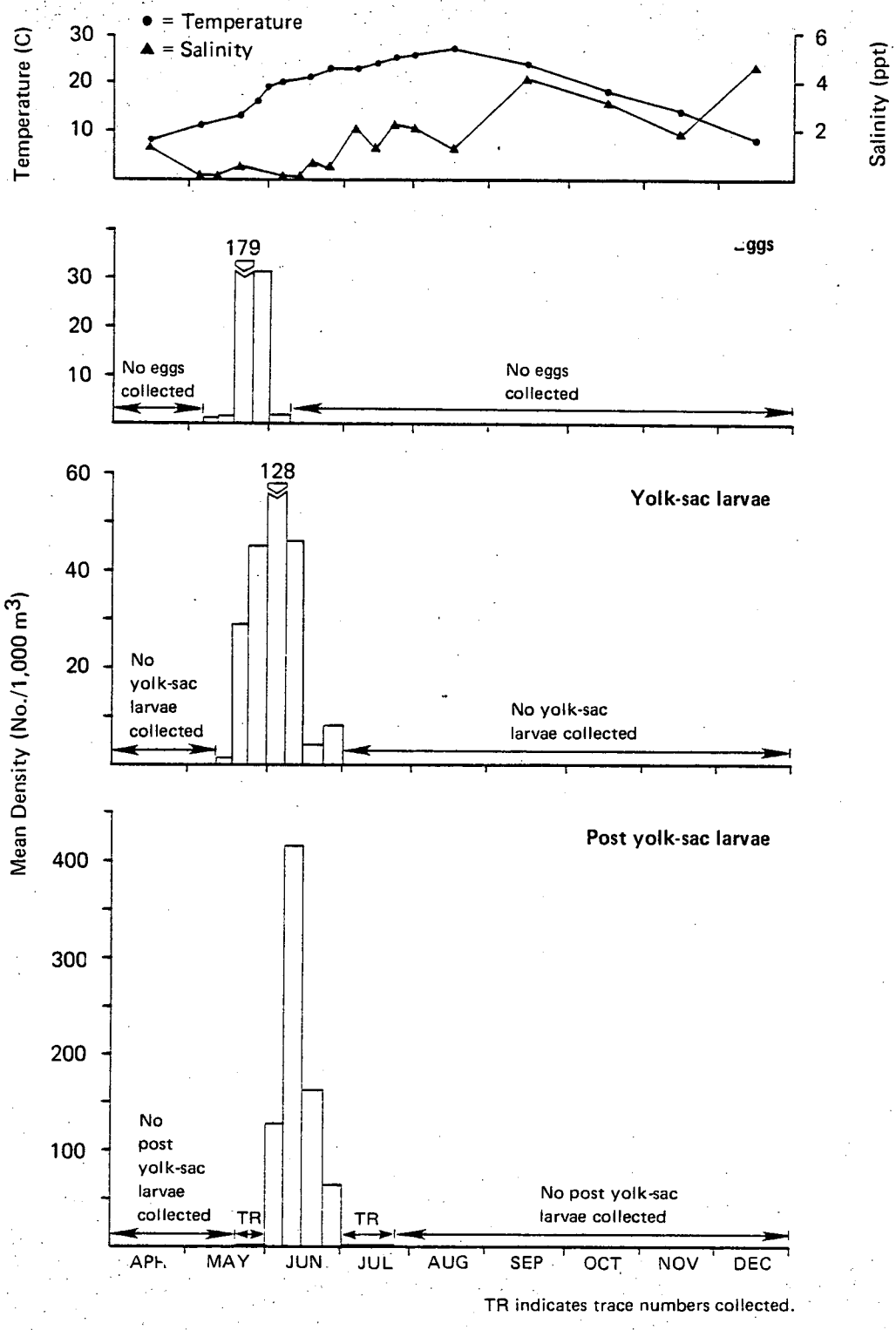


Figure 5-8. Mean densities (No./1,000 m^3) of striped bass early developmental stages collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978. (See Appendix C for water quality data.)

first week of June. Post yolk-sac larvae were most abundant throughout June when weekly average densities (all stations and depths combined) ranged from 64.2 to 410.6 per 1,000 m^3. They continued to occur at relatively low densities through most of July. Few juvenile striped bass (0.001 percent of the average ichthyoplankton catch per unit volume) were collected at standard river stations during 1978 (Table 5-19).

The length-frequency of striped bass ichthyoplankton collected at the seven standard river stations during each sampling effort is presented in Table 5-22. The majority (56.2 percent) of the striped bass collected ranged from 6.0 to 8.9 mm total length. The second most abundant group collected ranged from 3.0 to 5.9 mm total length, and included 30.3 percent of the striped bass collected. Twelve percent of the striped bass collected ranged in length from 9.0 to 11.9 mm, and less than 1.5 percent exceeded a total length of 12.0 mm.

5.1.3.2.3 White Perch

White perch ichthyoplankton were slightly less abundant than striped bass ichthyoplankton, constituting 7.5 percent of the average ichthyoplankton catch per unit volume (Table 5-19). Seasonal abundance patterns for white perch were similar to those observed for striped bass (Figure 5-9). White perch eggs were collected during late May and early June, at water temperatures ranging from 15.1 to 21.9 C. However, few white perch eggs were collected; the maximum density (averaged over all stations and sampling depths) observed was 2.4 per 1,000 m^3 (Table 5-21). Yolk-sac larvae were collected from mid-May through June; a peak abundance of 47.1 per 1,000 m^3 (averaged over all stations and sampling depths) was observed in the first week of June. Post yolk-sac larvae, the most abundant white perch life stage collected, were found from late May through July. They were most abundant during the last week of May and the first week of June, when average densities ranged from 234.2 to 237.3 per 1,000 m^3 (Table 5-21). The abundance of post yolk-sac larvae during July was very low. No juvenile white perch were collected during the study.

5.1.3.2.4 Herrings

Alosa spp. ichthyoplankton were slightly more abundant than either striped bass or white perch, constituting 10.2 percent of the average ichthyoplankton catch per unit volume (Table 5-19). The majority of Alosa spp. eggs and yolk-sac larvae occurred slightly earlier in May than eggs and yolk-sac larvae of white perch and striped bass (Figure 5-10). Alosa spp. eggs were present through most of May, when water temperatures ranged from 10.7 to 17.8 C. Alosa spp. yolk-sac larvae were most abundant during mid-May, but continued to occur in collections through early June. Post yolk-sac larvae of Alosa spp. were the dominant ichthyoplankton collected during May and June; the period of peak abundance occurred concurrently with the periods of peak abundance of both striped bass and white perch post yolk-sac larvae. Mean densities of Alosa spp. post yolk-sac larvae (averaged over all stations and depths) ranged from 327.4 to 463.4 per 1,000 m^3 during late May and early June, the period of peak Alosa spp. post yolk-sac larval abundance (Table 5-21). Alosa spp. post yolk-sac larvae were not collected after June. Juvenile Alosa spp. were collected from July through late fall, but were most abundant in October.

TABLE 5-22 LENGTH FREQUENCY OF STRIPED BASS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Sampling Date[a]	Number of Fish	Mean Length (mm)	Standard Deviation (mm)	Length Intervals (mm)									Range (mm)		
				0.0-2.9	3.0-5.9	6.0-8.9	9.0-11.9	12.0-14.9	15.0-17.9	18.0-20.9	21.0-23.9	24.0-99.9	Min	Med	Max
17 MAY	12	5.0	0.7	0	10	2	0	0	0	0	0	0	3.3	5.1	6.1
24 MAY	177	4.5	0.8	0	162	15	0	0	0	0	0	0	3.2	4.3	6.9
30 MAY	316	5.9	0.9	0	127	189	0	0	0	0	0	0	3.2	6.1	7.5
5 JUN	735	6.1	0.7	0	290	444	1	0	0	0	0	0	3.8	6.1	9.0
14 JUN	912	7.3	1.6	1	206	539	166	0	0	0	0	0	2.7	7.2	11.7
21 JUN	602	8.2	2.3	0	58	379	137	26	1	0	0	1	3.5	7.9	37.2
26 JUN	425	7.5	2.0	0	122	214	79	6	4	0	0	0	4.1	7.2	16.4
6 JUL	23	8.1	2.0	0	1	18	1	3	0	0	0	0	5.7	7.4	13.4
10 JUL	19	10.9	4.1	0	1	8	3	2	4	1	0	0	5.8	9.0	18.9
18 JUL	3	7.7	1.1	0	0	3	0	0	0	0	0	0	6.3	7.8	8.9

(a) No striped bass yolk-sac larvae, post yolk-sac larvae, or juveniles were collected before 17 May or after 18 July.

Note: Min = shortest length; Med = median length; Max = greatest length.

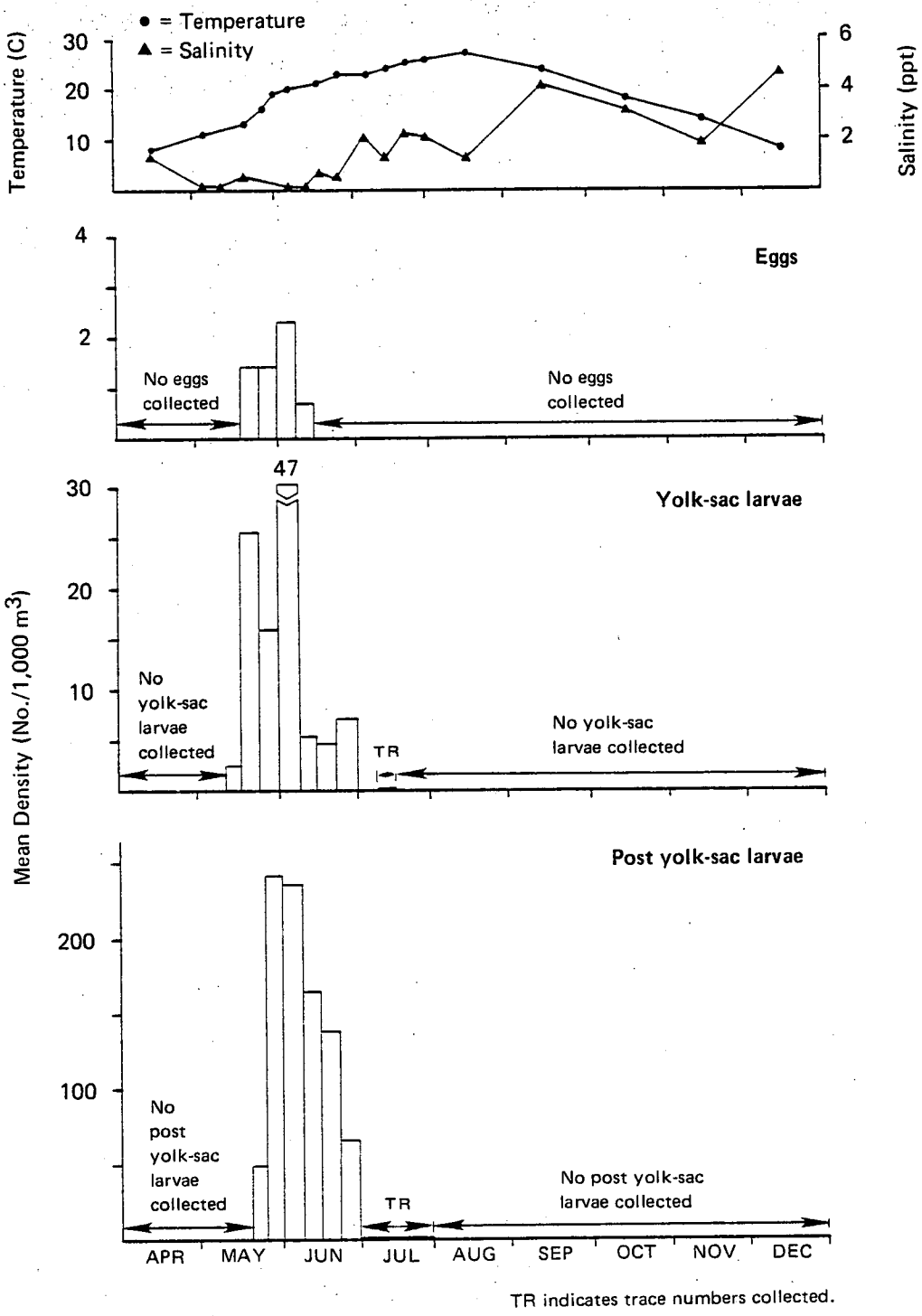


Figure 5-9. Mean densities (No./1,000 m^3) of white perch early developmental stages collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978. (See Appendix C for water quality data.)

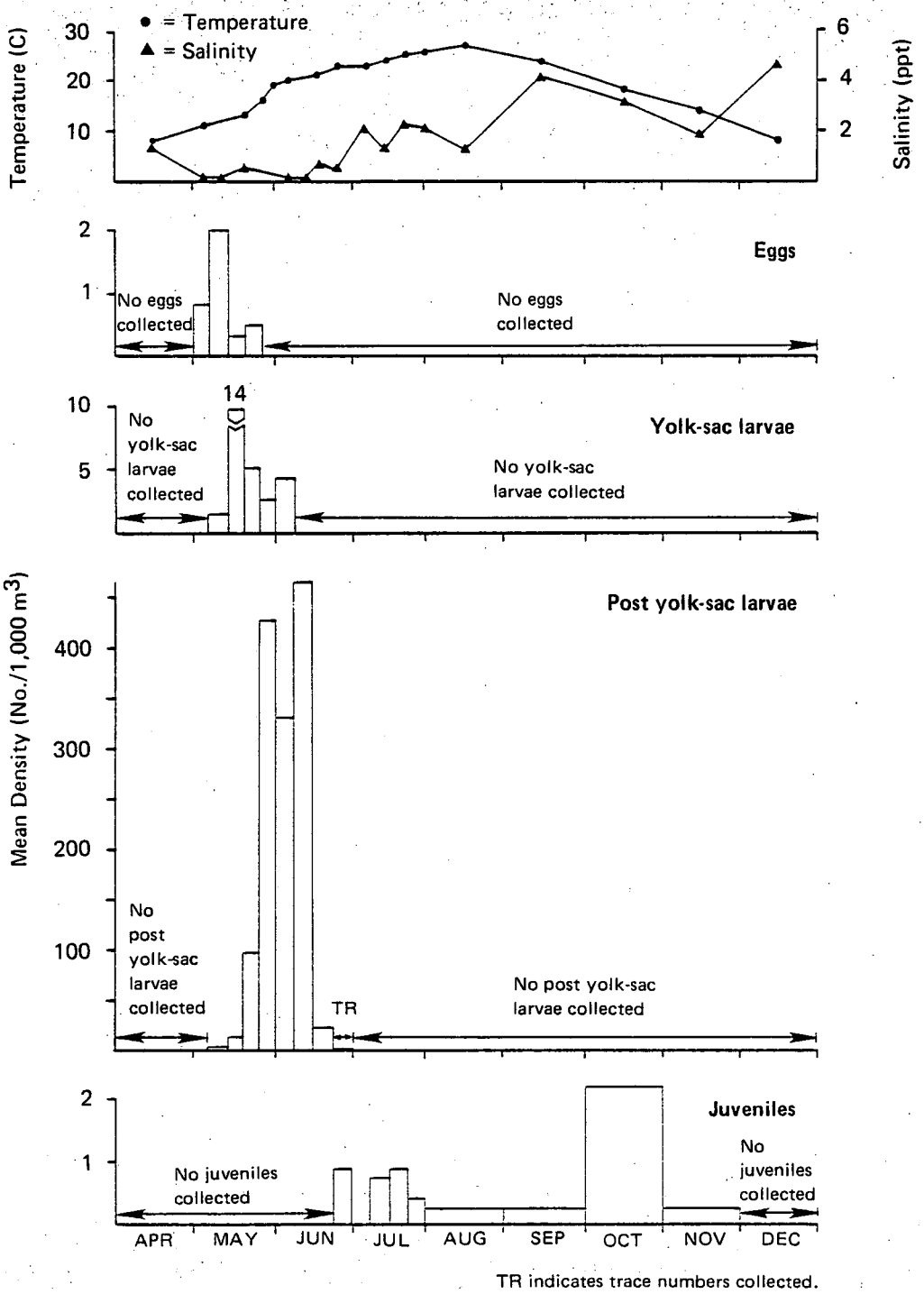


Figure 5-10. Mean densities (No./1,000 m^3) of Alosa spp. early developmental stages collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978. (See Appendix C for water quality data.)

5.1.3.2.5 Bay Anchovy

Bay anchovy was the most abundant ichthyoplankton taxon collected, constituting 64.5 percent of the average ichthyoplankton catch per unit volume (Table 5-19). Nearly all bay anchovy ichthyoplankton were collected during July, when the densities of striped bass, white perch, and Alosa spp. were relatively low (Table 5-21, Figure 5-11). Most of the bay anchovy ichthyoplankton collected were eggs, which accounted for 37.5 percent of the catch per unit volume. Bay anchovy eggs were collected during June, July, and August, at water temperatures ranging from 21.6 to 28.2 C. Peak abundance of bay anchovy eggs, 2,457.6 per 1,000 m^3 (averaged over all stations and sampling dates) occurred during early July, when the average water temperature was 24.5 C. Bay anchovy yolk-sac larvae were collected in relatively low densities from late June through July. Post yolk-sac larvae were collected from mid-June through September; a peak abundance of 2,253.0 per 1,000 m^3 (averaged over all stations and sampling dates) was observed in mid-July. Juvenile bay anchovy were collected, in relatively low densities, from August through December.

5.1.3.2.6 Atlantic Tomcod

Atlantic tomcod was the fifth most abundant ichthyoplankton taxon collected, constituting 3.9 percent of the average ichthyoplankton catch per unit volume (Table 5-19). A winter-spawning species, Atlantic tomcod was the only ichthyoplankton taxon collected in the near field area of the Indian Point plant in March and April (Table 5-21). Although no Atlantic tomcod eggs and relatively few yolk-sac larvae were collected during these months, post yolk-sac larvae were abundant (Figure 5-12). The peak abundance of Atlantic tomcod post yolk-sac larvae was 338.9 per 1,000 m^3 (averaged over all stations and sampling depths); no post yolk-sac larvae were collected after mid-May. Juvenile Atlantic tomcod were collected from April through August; a peak density of 14.1 per 1,000 m^3 (averaged over all stations and sampling depths) was observed in mid-May.

5.1.3.3 Analysis of Variance for Striped Bass Early Life Stages

Analysis of variance was conducted on striped bass eggs, yolk-sac larvae, and post yolk-sac larvae to determine if the abundances of these life stages differed significantly ($\alpha = 0.05$) from station to station (juveniles were collected too infrequently for analysis; see Appendix Table D.3-14). The results of these analyses indicated that the densities of striped bass eggs and post yolk-sac larvae did not vary significantly ($P > 0.05$) among the seven near field standard stations, but a significant station effect ($P = 0.044$) was observed for striped bass yolk-sac larvae (Table 5-23a). The Student-Newman-Keuls test, a multiple-range test, indicated that the variability in yolk-sac larval abundance among stations was restricted to differences between Station A and Stations F and D, as shown in Table 5-23b.

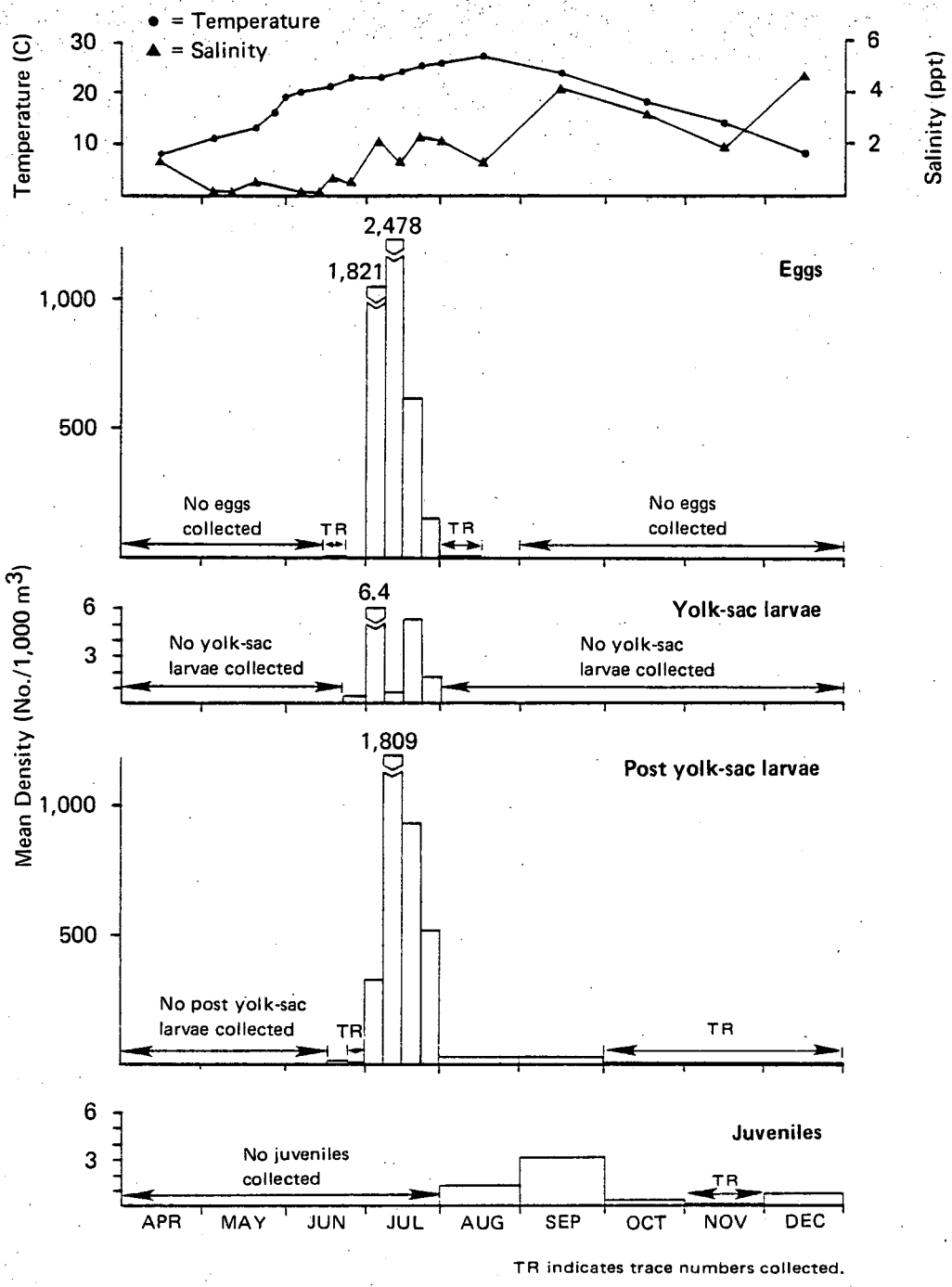


Figure 5-11. Mean densities (No./1,000 m^3) of bay anchovy early developmental stages collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978. (See Appendix C for water quality data.)

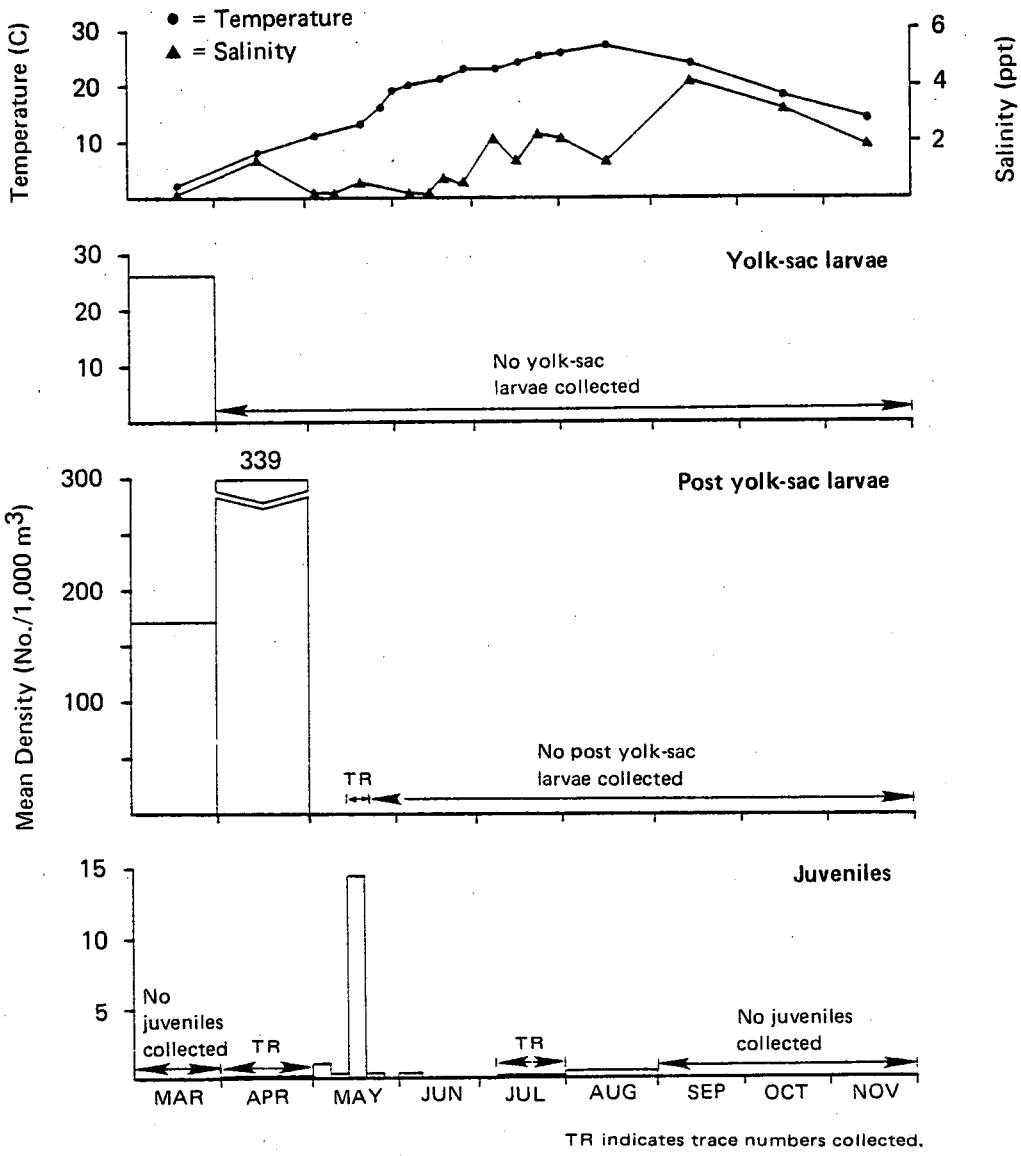


Figure 5-12. Mean densities (No./1,000 m^3) of Atlantic tomcod early developmental stages collected at standard river stations in the vicinity of the Indian Point Generating Station, 1978. (See Appendix C for water quality data.)

TABLE 5-23a RESULTS OF ANALYSIS OF VARIANCE (X INDICATES SIGNIFICANCE AT $\alpha = 0.05$) ON DENSITIES OF STRIPED BASS EARLY DEVELOPMENTAL STAGES COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

	Eggs	Yolk-Sac Larvae	Post Yolk-Sac Larvae
Main Factors			
Date	X	X	X
Station	--	X	--
Depth	X	X	X
Day/Night	X	X	X
Interactions			
Date x Station	--	X	X
Date x Depth	X	X	X
Date x Day/Night	X	X	X
Station x Depth	--	X	--
Station x Day/Night	X	--	--
Depth x Day/Night	X	X	X

(a) See Appendix Tables E.3-1 through E.3-3 for analysis of variance tables. The total number of striped bass juveniles collected (4) was too small to permit statistical analysis.

Note: Dashes (--) indicate non-significance (i.e., $P > 0.05$).

TABLE 5-23b RESULTS OF THE STUDENT-NEWMAN-KEULS MULTIPLE RANGE TEST ON STRIPED BASS YOLK-SAC LARVAE COLLECTED AT STANDARD RIVER STATIONS IN THE VICINTIY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Station[b]	F	D	B	E	G	C	A
Range Bar(s) Over Similar Means ($\alpha = 0.05$)							

(a) Stations with mean densities not significantly different ($\alpha = 0.05$) are underscored.
(b) Ordered from lowest abundance (left) to highest abundance (right).

Highest abundance of striped bass yolk-sac larvae was observed at Station A the northernmost station, whereas lowest abundance was observed at Station F the southernmost station. Although the abundance of yolk-sac larvae at Station D (located immediately offshore from the Indian Point plant) was also significantly lower than abundance at Station A, the abundance at Station D was not significantly different from yolk-sac larval abundance observed at any of the other stations. Yolk-sac larval densities observed at Stations C and E, also in the immediate vicinity of the Indian Point plant (at mid-channel and along the west shore, respectively) were similar to densities observed at both Station A and Station F.

Date, sampling depth, and day/night were also included in the analysis as main factors. All three of these variables were statistically significant for each life stage (Table 5-23a). The sharp peaks in abundance (Figure 5-8), which are characteristic of ichthyoplankton populations for the early life stages, accounted for the significant date effect. Depth was a significant variable because densities of striped bass ichthyoplankton were usually higher at the bottom and middepth sampling locations than at the surface. Abundances of eggs were greater during the day than at night, and the abundances of yolk-sac and post yolk-sac larvae were greater at night, which resulted in significant day/night effects for all three life stages.

In addition, all two-way interactions between the four main factors were examined to determine if trends explained by each main factor were consistent within other main factors. Nearly all interactions with date were significant ($P < 0.05$) (Table 5-23a), indicating that seasonal trends in abundance were not the same at each depth nor at each station and were also dissimilar between day and night. Because of the relatively short time span over which each of these life stages occurred, however, these interactions with date have little interpretive significance.

Interactions between depth and day/night were also significant ($P < 0.05$) for the three striped bass life stages examined (eggs, yolk-sac larvae, and post yolk-sac larvae), indicating that although abundances varied according to depth and day/night collection period, day/night differences were greater at some depths than at others. This interaction between depth and day/night for yolk-sac and post yolk-sac larvae may have resulted from vertical migrations from the bottom toward the surface during the night (McFadden 1978). In addition, a significant interaction between day/night and station was observed for eggs, whereas the distribution of yolk-sac larvae varied significantly among stations with respect to depth.

5.2 ENTRAINMENT ABUNDANCE STUDY

Entrainment abundance at the Indian Point Generating Station was examined for five selected species: striped bass (all early developmental stages), *Gammarus* spp., *Neomysis americana*, *Monoculodes edwardsi*, and *Chaoborus punctipennis*. Samples were collected from 3 depths (bottom, middepth, and surface) at Intake Stations I2 and I3 and Discharge Station D1 every 2 hours during each 12-hour sampling effort (see Section 4.2). Each sampling effort was scheduled so that the fourth collection period occurred approximately at dusk.

mpling at intake and discharge stations varied according to unit operation. mples were collected at Intake Station I3 only when Unit 3 was online, whereas samples were collected at Intake Station I2 and Discharge Station D1 only when Unit 2 was online. Both units were in operation simultaneously only during sampling efforts conducted on 1 June, 11 September, 10 October, and 6 November (see Table 4-2). Consequently, comparison of entrainment abundance estimates among stations was largely restricted to comparing abundances at Station I2 to those at Station D1. For examining diel variations in abundance, only data from Station I2 and D1 were used because of the discontinuous sampling at Station I3, resulting from unit outages.

5.2.1 Striped Bass

Striped bass ichthyoplankton were collected throughout May, June, and July (Table 5-24, Figure 5-13) during entrainment abundance sampling at the Indian Point Generating Station; no striped bass ichthyoplankton were collected after July. Peak entrainment of striped bass occurred during the period 25 May through 22 June, when the average density of all early life stages combined during each 12-hour sampling effort typically exceeded 300 per 1,000 m^3. The most abundant life stage collected was post yolk-sac larva, followed by (in order of decreasing abundance) egg, yolk-sac larva, and juvenile life stages. Seventy-two percent of the striped bass collected at Stations I2, I3, and D1 (all stations combined) ranged from 6.0 to 11.9 mm total length; 17 percent exceeded a total length of 12.0 mm (Table 5-25).

5.2.1.1 Eggs

Striped bass eggs were collected from mid-May through early June at average intake water temperatures ranging from 12.5 to 21.2 C (Figure 5-13). Peak abundance of eggs occurred during the last week of May and the first week of June, when average intake water temperatures ranged from 16.0 to 19.1 C. Striped bass egg densities recorded for the 12 hour sampling efforts conducted during this period of peak abundance ranged from 294.4 per 1,000 m^3 on 25 May to 184.4 per 1,000 m^3 on 1 June (averaged over all sampling depths, collection periods, and stations) (Table 5-24).

Striped bass egg densities were higher at the intake stations than at the discharge station (Table 5-24, Figure 5-14). On 1 June, the density of striped bass eggs (averaged over all collection periods and depths) was 351.9 per 1,000 m^3 at I3, 140.4 per 1,000 m^3 at I2, and 60.8 per 1,000 m^3 at D1. Similarly, on 8 June the average density of striped bass eggs collected during the 12-hour sampling effort was higher at I2 than at D1, although the abundance of eggs at both stations was relatively low on this date.

A closer examination of entrainment abundance estimates of striped bass eggs on 1 June indicated that the average density for Intake Station I3 may have been overestimated. Six samples collected at I3 on 1 June were not included in abundance estimates because of low velocities at the time of collection (see Subsection 4.2.3.1). Five of these six voided samples were collected ring the sixth and seventh collection periods, when egg abundance was low I2 and D1 (Table 5-26). As a result, the average egg density at I3 for 1 June was based largely on samples collected when eggs were most abundant,

TABLE 5-24 MEAN DENSITIES OF STRIPED BASS ICHTHYOPLANKTON COLLECTED AT THE INTAKES AND DISCHARGE OF THE INDIAN POINT GENERATING STATION, 1978[a]

Sampling Date[d]	Mean Density (No./1,000 m^3)[b]															
	Station I3				Station I2				Station D1				All Stations[c]			
	Eggs	YSL	PYSL	Juv	Eggs	YSL	PYSL	Juv	Eggs	YSL	PYSL	Juv	Eggs	YSL	PYSL	Juv
4 MAY	0	0	0	0	--	--	--	--	--	--	--	--	0	0	0	0
11 MAY	86.4	0	0	0	--	--	--	--	--	--	--	--	86.4	0	0	0
18 MAY	136.6	0	0	0	--	--	--	--	--	--	--	--	136.6	0	0	0
25 MAY	294.4	36.5	0	0	--	--	--	--	--	--	--	--	294.4	36.5	0	0
1 JUN	351.9	152.8	0	0	140.4	73.4	0	0	60.8	86.4	0	0	184.4	104.2	0	0
8 JUN	--	--	--	--	23.2	168.3	93.2	0	8.3	228.6	220.3	0	15.8	198.4	156.8	0
15 JUN	--	--	--	--	0	2.8	373.3	0	0	20.9	466.8	0	0	11.8	420.0	0
22 JUN	--	--	--	--	0	4.2	207.6	3.9	0	10.5	429.4	0	0	7.4	318.5	2.0
29 JUN	--	--	--	--	0	0	43.6	67.8	0	0	30.8	1.7	0	0	37.2	34.8
5 JUL	--	--	--	--	0	0	0.9	0	0	0	1.0	0	0	0	1.0	0
13 JUL	--	--	--	--	0	0	10.8	9.8	0	0	4.3	2.0	0	0	7.6	5.9
17 JUL	--	--	--	--	0	0	0	0	0	0	2.1	0	0	0	1.0	0
24 JUL	--	--	--	--	0	0	0	10.7	0	0	2.1	0	0	0	1.0	5.4

(a) See Appendix Tables F.1-1, F.2-1, and F.3-1 for densities of striped bass collected during each collection period and at each sampling depth.

(b) Mean density $(\bar{Y}) = \frac{\sum^{a}\sum^{b} Y}{n}$

where

Y = density at a given sampling depth (a) and collection period (b).
n = number of samples collected during a specific 12 hour sampling effort.

(c) Average for all stations $= \frac{\sum^{c} \bar{Y}}{N}$

where:

$\bar{Y}$ = mean density for each station (c) during a 12-hour sampling effort.
N = number of stations sampled during a given sampling effort.

(d) No striped bass ichthyoplankton were collected before 4 May or after 24 July.

Note: Dashes (--) indicate data not collected because of unit outages (see Table 4-2 for sampling schedule and unit operation).

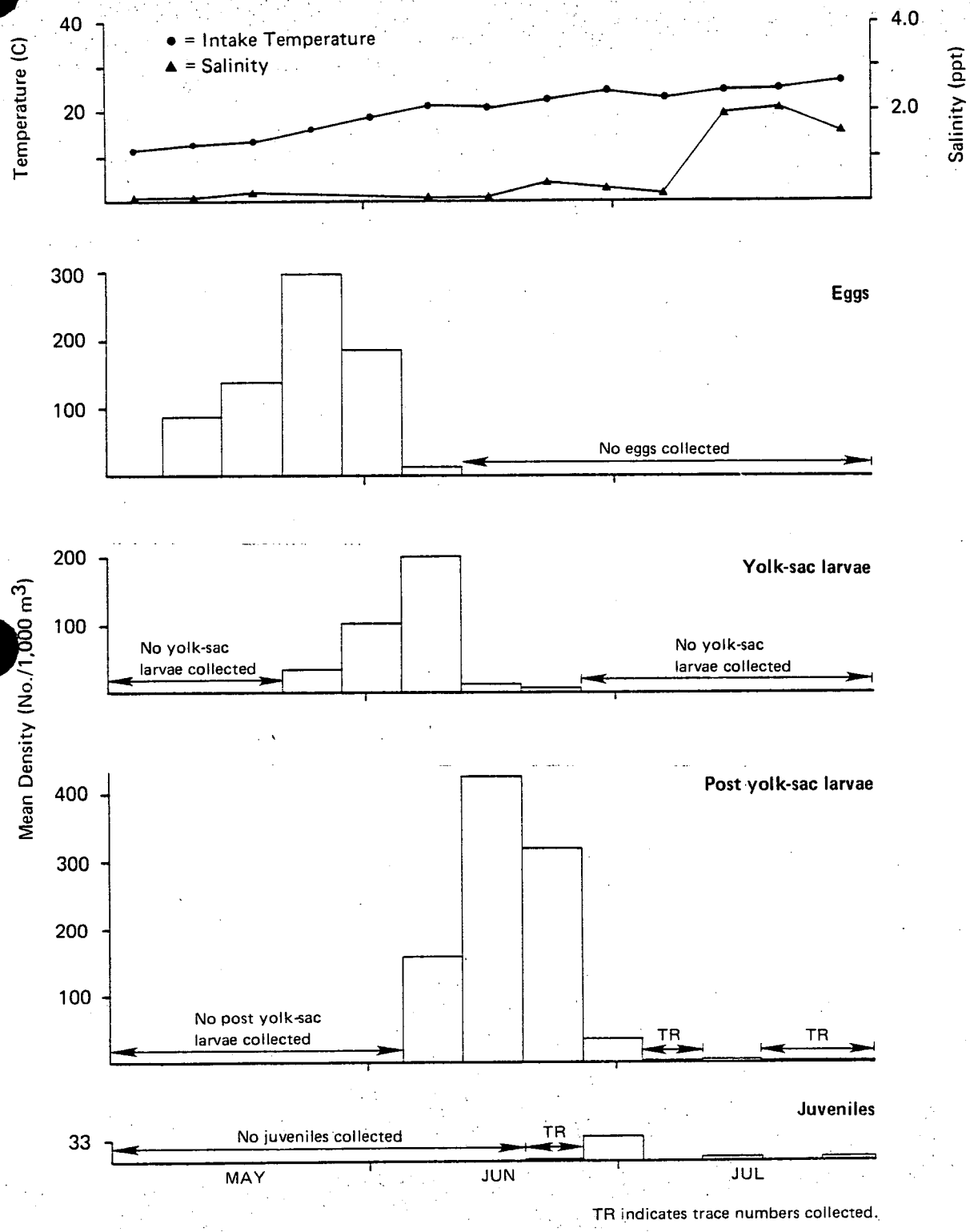


Figure 5-13. Mean densities (No./1,000 m^3) of striped bass early developmental stages collected during the entrainment abundance study (all stations, depths, and collection periods combined), Indian Point Generating Station, 1978. (See Appendix C for water quality data.)

TABLE 5-25 LENGTH FREQUENCY OF STRIPED BASS COLLECTED DURING ENTRAINMENT ABUNDANCE SAMPLING AT THE INDIAN POINT GENERATING STATION, 1978

Station I2

Sampling Date[a]	Number of Fish	Mean Length (mm)	Standard Deviation (mm)	Length Intervals (mm) 0.0 2.9	3.0 5.9	6.0 8.9	9.0 11.9	12.0 14.9	15.0 17.9	18.0 20.9	21.0 23.9	24.0 99.9	Range (mm) Min	Med	Max
1 JUN	32	5.1	1.2	1	22	9	0	0	0	0	0	0	2.9	4.9	7.5
8 JUN	46	6.7	1.2	0	8	37	1	0	0	0	0	0	4.1	6.9	9.6
15 JUN	123	10.0	1.5	0	0	28	80	15	0	0	0	0	6.4	10.0	13.1
22 JUN	38	11.1	2.3	0	1	2	23	9	3	0	0	0	5.5	10.6	16.5
29 JUN	35	18.9	7.8	0	0	6	5	0	3	3	6	12	6.1	21.0	33.0
5 JUL	0	--	--	0	0	0	0	0	0	0	0	0	--	--	--
13 JUL	6	18.7	8.4	0	0	0	1	3	0	0	0	2	11.7	13.3	32.0
17 JUL	0	--	--	0	0	0	0	0	0	0	0	0	--	--	--
24 JUL	3	49.0	3.6	0	0	0	0	0	0	0	0	3	46.0	47.0	54.0

Station I3

Sampling Date[a]	Number of Fish	Mean Length (mm)	Standard Deviation (mm)	Length Intervals (mm) 0.0 2.9	3.0 5.9	6.0 8.9	9.0 11.9	12.0 14.9	15.0 17.9	18.0 20.9	21.0 23.9	24.0 99.9	Range (mm) Min	Med	Max
25 MAY	2	5.5	0.5	0	1	1	0	0	0	0	0	0	5.0	5.5	6.0
1 JUN	7	4.3	0.8	0	6	1	0	0	0	0	0	0	3.5	4.0	6.1

Station D1

Sampling Date[a]	Number of Fish	Mean Length (mm)	Standard Deviation (mm)	Length Intervals (mm) 0.0 2.9	3.0 5.9	6.0 8.9	9.0 11.9	12.0 14.9	15.0 17.9	18.0 20.9	21.0 23.9	24.0 99.9	Range (mm) Min	Med	Max
1 JUN	90	6.1	0.6	0	37	53	0	0	0	0	0	0	4.7	6.0	7.3
8 JUN	296	7.1	1.4	0	62	200	33	1	0	0	0	0	4.2	6.8	13.9
15 JUN	370	9.9	1.7	0	6	100	223	39	2	0	0	0	5.1	10.0	15.5
22 JUN	318	11.0	2.5	0	13	46	141	95	23	0	0	0	4.8	11.0	17.2
29 JUN	37	11.6	4.8	0	2	6	19	5	1	1	0	3	5.3	10.3	26.0
5 JUL	1	6.0	0.0	0	0	1	0	0	0	0	0	0	6.0	6.0	6.0
13 JUL	5	19.1	7.7	0	0	0	0	3	0	0	1	1	13.0	14.0	33.0
17 JUL	2	12.5	0.1	0	0	0	0	2	0	0	0	0	12.3	12.5	12.6
24 JUL	1	18.0	0.0	0	0	0	0	0	0	1	0	0	18.0	18.0	18.0

(a) Includes all sampling dates when striped bass yolk-sac larvae, post yolk-sac larvae, or juveniles were collected.

Note: Min = shortest length; Med = median length; Max = greatest length.
Dashes (--) indicate data not available.

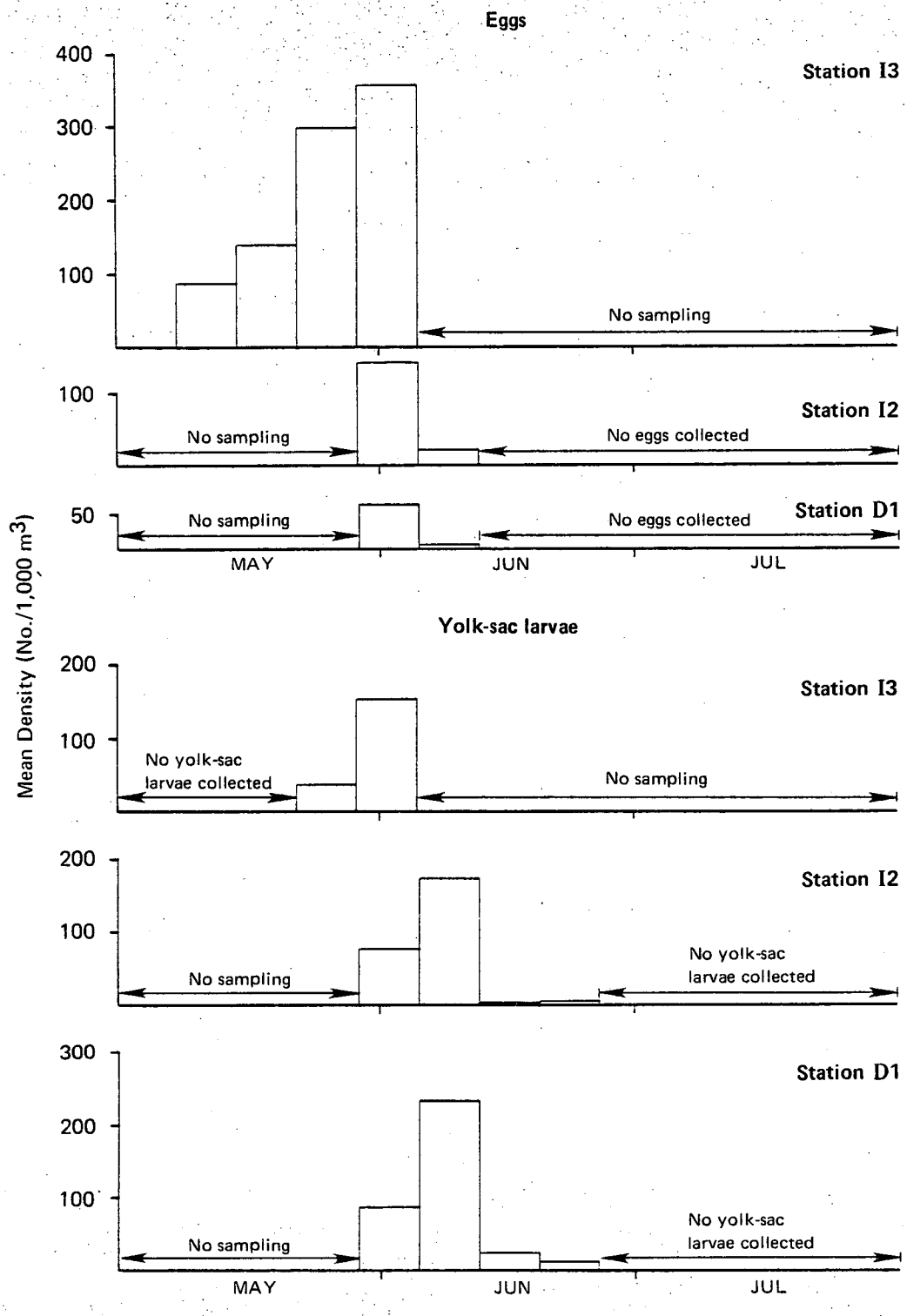
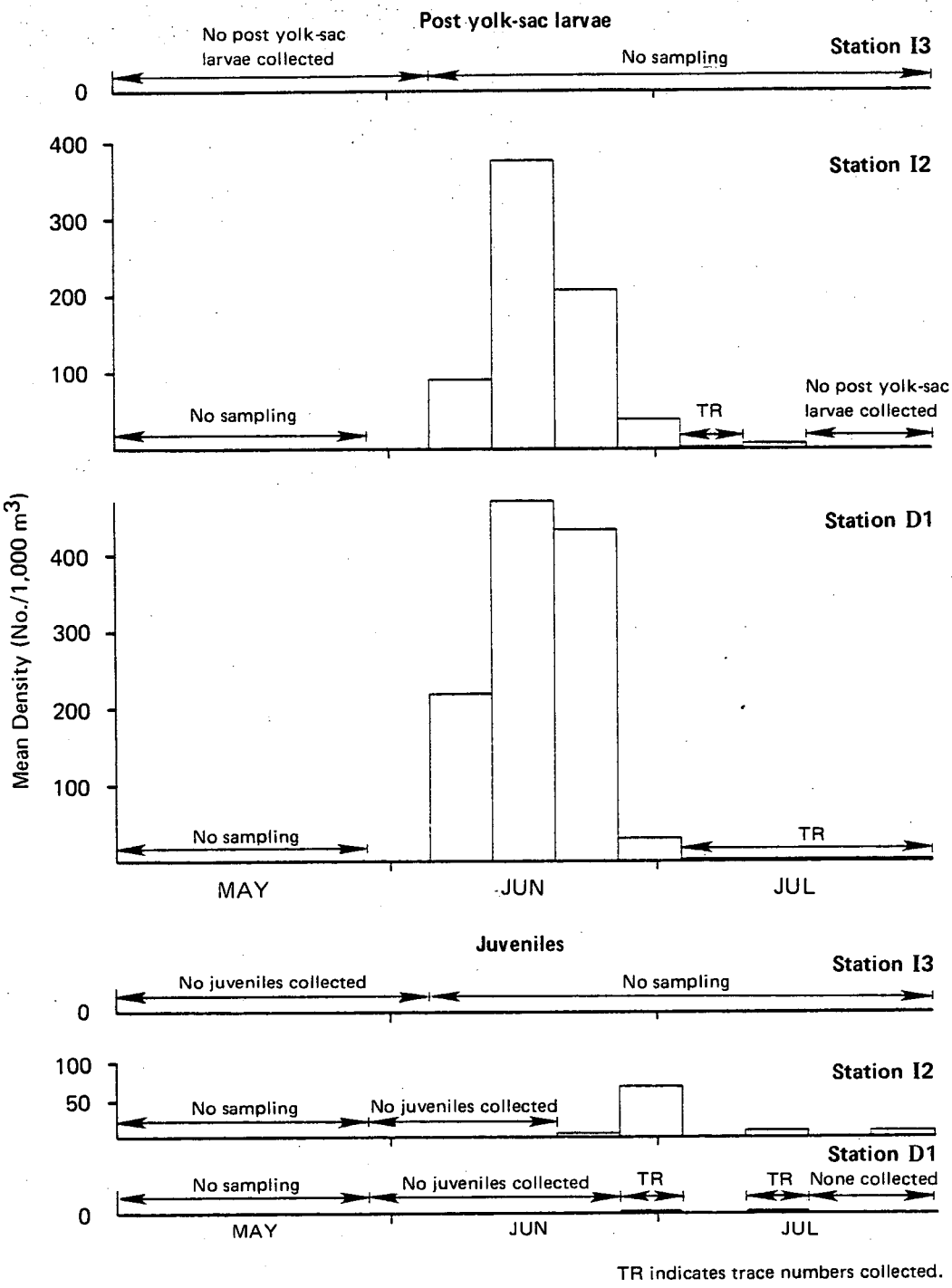


Figure 5-14. Mean densities (No./1,000 m^3) of striped bass early developmental stages collected at each station during the entrainment abundance study (all depths and collection periods combined), Indian Point Generating Station, 1978.



TR indicates trace numbers collected.

Figure 5-14. (Cont.)

TABLE 5-26 COMPARISON OF DIEL DENSITY ESTIMATES OF STRIPED BASS EGGS COLLECTED AT THREE SAMPLING DEPTHS AT THE INDIAN POINT GENERATING STATION, 1 JUNE 1978

Collection Period[a]		Density (No./1,000 m^3)								
		Station I3			Station I2			Station D1		
		S	M	B	S	M	B	S	M	B
1	day	370.4	0	1,111.1	0	107.5	50.0	0	16.6	85.8
2	day	0	689.7	0	150.4	89.3	91.7	0	0	12.6
3	day	0	(b)	0	0	0	0	250.0	42.1	90.9
4	dusk	339.0	1,451.6	0	0	1,545.1	698.4	184.2	354.8	158.1
5	night	0	909.1	408.2	0	0	216.0	46.5	0	0
6	night	(b)	(b)	(b)	0	0	0	0	0	0
7	night	0	(b)	(b)	0	0	0	13.4	22.0	0
Mean		118.2	762.6	303.9	21.5	248.8	150.9	70.6	62.2	49.6

(a) Five minute samples were collected every 2 hours over a 12-hour sampling period with the fourth sample taken at dusk.

(b) Samples voided because sample volumes were less than 1.77 m^3 during the 5 minute collection period.

Note: S = surface; M = middepth; B = bottom.

whereas average egg densities at I2 and D1 were based on samples collected during both low and high abundance collection periods.

As shown in Figure 5-15, the highest concentrations of striped bass eggs were generally observed at dusk (collection period 4).

5.2.1.2 Yolk-Sac Larvae

Striped bass yolk-sac larvae were collected from late May through mid-June at average intake water temperatures ranging from 16.0 to 22.4 C (Figure 5-13). The peak density of yolk-sac larvae, observed during the first week of June, was 198.4 per 1,000 m^3 (averaged over all sampling depths, collection periods, and stations) (Table 5-24).

Mean densities of striped bass yolk-sac larvae collected during each 12-hour sampling effort varied according to sampling station (Figure 5-14). As observed for eggs, the average density of yolk-sac larvae collected on 1 June at Station I3 was higher than the average densities of yolk-sac larvae collected at Stations I2 or D1. However, daily average densities of yolk-sac larvae collected at D1 were consistently higher than densities of yolk-sac larvae collected at I2 for all sampling dates.

There was no apparent diel trend in the abundance of striped bass yolk-sac larvae collected at Stations I2 or D1, although marked differences in average densities between the two stations were observed for most collection periods (Figure 5-15). The average density of yolk-sac larvae at Station I2 exceeded that observed at Station D1 during collection periods 4, 6, and 7, whereas the average density of yolk-sac larvae collected at Station D1 was higher than at Station I2 during collection periods 1, 3, and 5. Average densities were similar only for collection period 2.

The observed diel station differences may partially be due to patchiness in yolk-sac larval abundance. A closer examination of density estimates determined from samples collected on 8 June, when yolk-sac larvae were most abundant, indicated that densities at both Stations I2 and D1 fluctuated from low to high values within given sampling depths and collection periods (Table 5-27). For example, during collection period 5 at Station D1, density values ranged from a high of 1,818.2 per 1,000 m^3 at the surface to a low of 119.2 per 1,000 m^3 at the bottom; during this same collection period, density values at Station I2 varied from 236.2 per 1,000 m^3 at middepth to 0 per 1,000 m^3 at the surface and at the bottom. Fluctuations in the densities of yolk-sac larvae with respect to sampling depth were generally less pronounced at Station D1 than at Station I2, which likely resulted from vertical mixing of the discharge waters; this pattern was not consistent, however (Table 5-27, Appendix Tables F.1-1 and F.3-1).

5.2.1.3 Post Yolk-Sac Larvae

Striped bass post yolk-sac larvae were collected from 8 June through 24 July. The peak abundance of post yolk-sac larvae, 420.0 per 1,000 m^3 (averaged over all sampling depths, collection periods, and stations), was observed during 8 to 22 June (Table 5-24, Figure 5-13), when average intake water temperatures ranged from 20.7 to 22.4 C. Post yolk-sac larvae occurred in low abundance throughout July and were absent from entrainment samples after July.

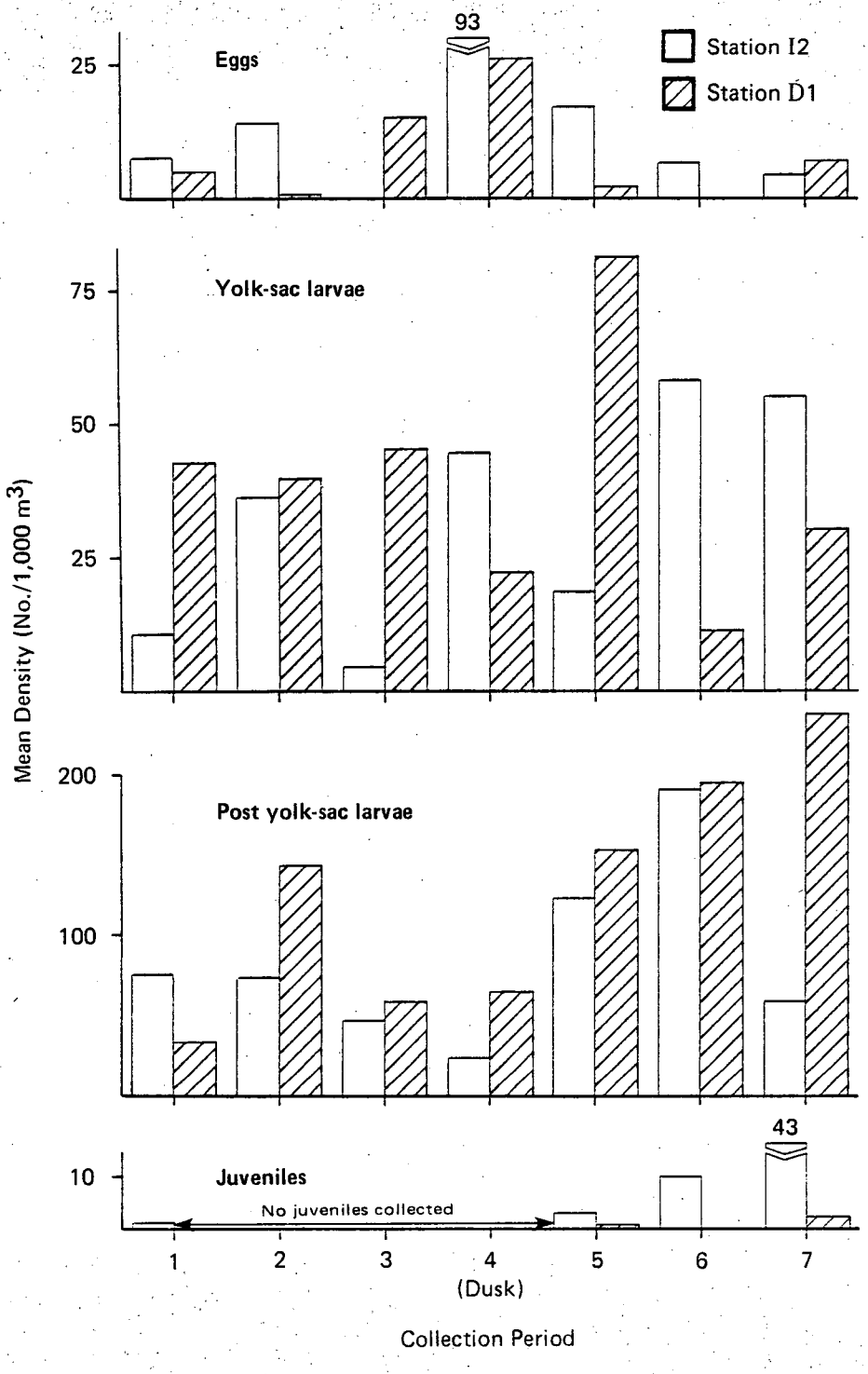


Figure 5-15. Diel distribution of striped bass early developmental stages collected at Stations I2 and D1 during the entrainment abundance study (averaged over sampling dates from 1 June through 24 July and all depths), Indian Point Generating Station, 1978.

TABLE 5-27 COMPARISON OF DIEL DENSITY ESTIMATES OF STRIPED BASS YOLK-SAC LARVAE COLLECTED AT THREE SAMPLING DEPTHS AT THE INDIAN POINT GENERATING STATION, 8 JUNE 1978

Collection Period[a]		Density (No./1,000 m^3)					
		Station I2			Station D1		
		S	M	B	S	M	B
1	day	0	0	186.9	171.4	463.0	138.6
2	day	0	0	0	48.9	260.4	80.2
3	day	0	0	0	78.6	86.6	83.5
4	dusk	0	219.8	496.5	92.7	137.7	121.6
5	night	0	236.2	0	1,818.2	178.1	119.2
6	night	161.3	212.8	721.6	155.8	106.1	25.8
7	night	519.5	340.9	439.6	93.7	0	51.4

(a) Five minute samples were collected every two hours over a 12-hour sampling period with the fourth sample taken at dusk.

Note: S = surface; M = middepth; B = bottom.

observed for yolk-sac larvae, mean densities of post yolk-sac larvae collected during each 12-hour sampling effort were generally higher at Discharge Station D1 than at Intake Station I2 (Figure 5-14) (comparison with Intake Station I3 was not possible, because sampling was not conducted at I3 after 1 June and no post yolk-sac larvae were collected at any station prior to sampling on 8 June). Differences in the abundance of post yolk-sac larvae observed between Stations I2 and D1 were most pronounced on 22 June, when the mean density at Station I2 was 207.6 per 1,000 m^3 (averaged over all sampling depths and collection periods), compared to an average density of 429.4 per 1,000 m^3 at Station D1. Furthermore, average densities determined for each sampling depth during the period of greatest post yolk-sac larval abundance (8 to 22 June) were also typically higher at Station D1 than at Station I2, as shown in Table 5-28.

TABLE 5-28 AVERAGE DENSITY OF POST YOLK-SAC LARVAE COLLECTED AT THE INDIAN POINT GENERATING STATION, 8 TO 22 JUNE 1978

	Mean Density (No./1,000 m^3)[a]					
	Station I2			Station D1		
Sampling Date	S	M	B	S	M	B
8 JUN	122.6	38.6	118.5	304.3	184.8	171.7
15 JUN	229.9	250.2	639.8	311.3	472.8	594.1
22 JUN	20.2	243.4	279.0	325.3	436.0	526.8

(a) Averaged over samples collected every 2 hours during each 12-hour sampling period.

Entrainment abundance estimates for striped bass post yolk-sac larvae were generally greater during the night than during the day at both Intake Station I2 and Discharge Station D1 (Figure 5-15). For the period 8 June through 22 June, the average densities of post yolk-sac larvae collected during the night (collection periods 5, 6, and 7 combined) were 343.5 and 567.1 per 1,000 m^3 at Stations I2 and D1 respectively, whereas average densities during the day (collection periods 1, 2, and 3 combined) were 170.2 and 232.5 per 1,000 m^3 at Stations I2 and D1. Lowest abundance was observed at dusk (collection period 4), when the average density at Station I2 was 59.0 per 1,000 m^3 and the average density at Station D1 was 180.2 per 1,000 m^3.

5.2.1.4 Juveniles

Juvenile striped bass occurred in entrainment abundance collections from mid-June through July; however, the abundance of juveniles was generally low (Figure 5-13, Table 5-24). The highest average density of juveniles collected during a 12 hour sampling effort was 67.8 per 1,000 m^3, which occurred at Station I2 on 29 June. Average densities observed at other times ranged from 0 to 10.7 per 1,000 m^3. Densities of juveniles at D1 were consistently lower than densities observed at I2 (Figure 5-14). In addition, the vast majority of juveniles were collected after dusk, with highest diel abundance

occurring 4 to 6 hours after dusk (collection periods 6 and 7, respectively) (Figure 5-15).

5.2.2 Gammarus spp.

Gammarus spp. were collected at the intake and discharge stations of the Indian Point plant throughout the sampling season (March to December) (Figure 5-16). During this period, mean densities ranged from 96.2 to 3,368.8 per 1000 m^3 during the day (collection periods 1, 2, and 3) and from 471.4 to 15,463.6 per 1,000 m^3 at night (collection periods 4, 5, 6, and 7), as averaged over all depths, stations, and the appropriate collection periods (Table 5-29). Highest abundance occurred during the spring and early summer (March to June), with peak abundance occurring on 1 June. On this date, the mean density at Discharge Station D1 was 17,596 per 1,000 m^3, compared to average densities of 3,453.8 and 8,509.1 per 1,000 m^3 at Intake Stations I2 and I3, respectively (averaged over all sampling depths and collection periods) (Table 5-29, Figure 5-17). Densities of Gammarus spp. were consistently higher at the discharge stations than at the intake stations throughout the sampling period, although the difference in abundance estimates was normally not as pronounced as observed on 1 June.

The abundance of Gammarus spp. also varied markedly through each 12-hour sampling effort, with high abundances occurring at night and low abundances occurring during the day (Figure 5-18). A sharp increase in Gammarus spp. abundance was observed at dusk (collection period 4), and abundance remained high throughout night collection periods 5, 6, and 7. The highest density of Gammarus spp. was observed during the fifth collection period, approximately 2 hours after dusk. This diel trend in abundance was observed at Discharge Station D1 as well as Intake Station I2.

5.2.3 Neomysis americana

The occurrence of the mysid shrimp Neomysis americana in entrainment abundance samples collected at the Indian Point plant corresponds closely to the intrusion of the salt front into the Indian Point area (Figure 5-19). No mysids were collected during the spring and early summer, a period of high freshwater flow. As the salt front moved into the area, entrainment abundance estimates for N. americana increased. Peak abundance occurred during July and August, when mean densities ranged from 552.7 to 15,509.5 per 1,000 m^3 during the day (collection periods 1, 2, and 3) and from 3,432.2 to 25,245.0 per 1,000 m^3 at night (collection periods 4, 5, 6, and 7), as averaged over all depths, stations, and the appropriate collection periods (Table 5-30).

As observed for Gammarus spp., entrainment abundance estimates for Neomysis americana were generally higher at Discharge Station D1 than at Intake Station I2 (Figure 5-20); although this trend was typical of day as well as night collections, the difference between stations was most pronounced during the day (Table 5-30). Entrainment abundance estimates of N. americana at Intake Station I3, on the other hand, were generally comparable to those at Station D1, although comparisons were limited to only three collection dates (11 September, 10 October, and 6 November).

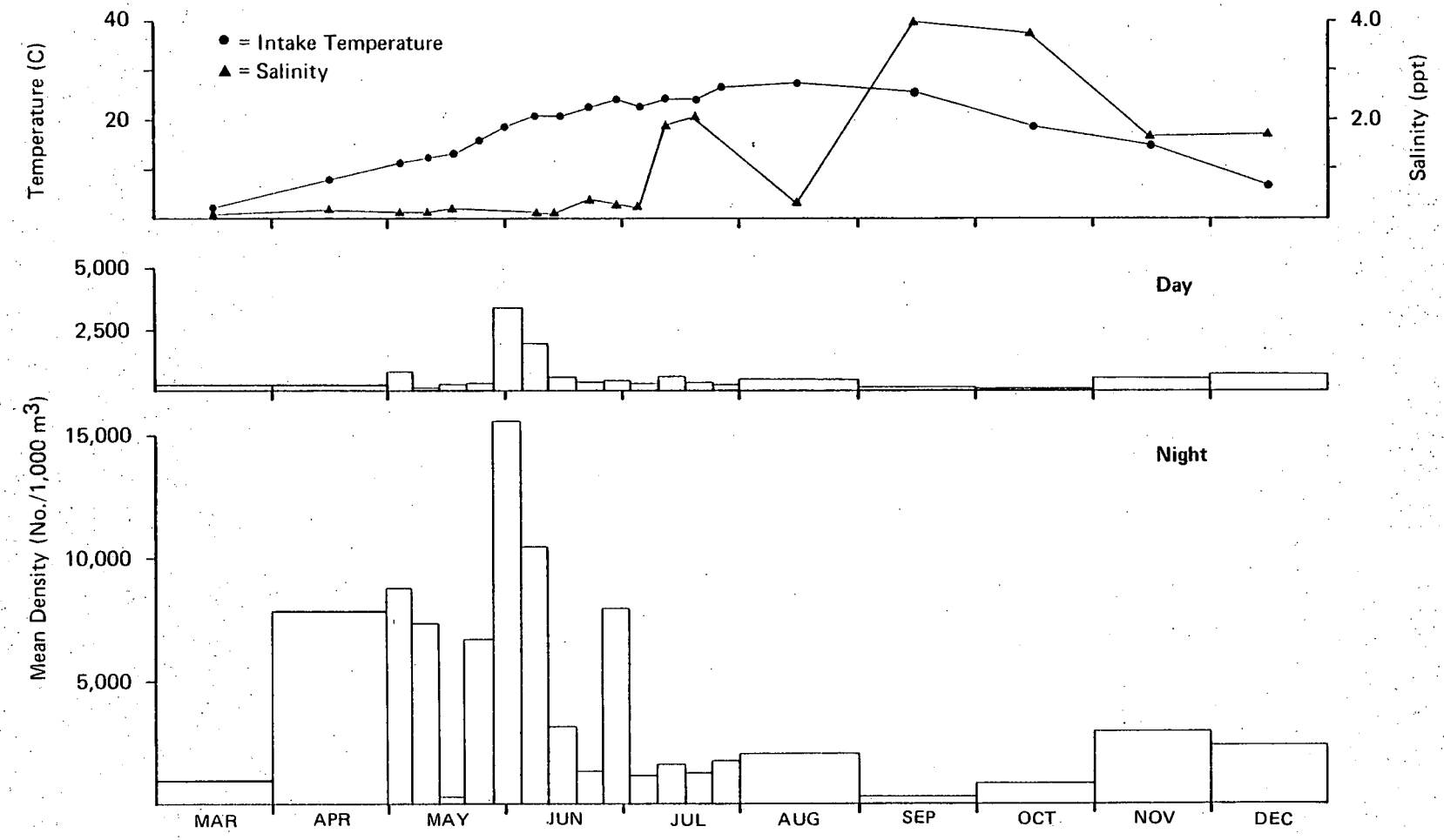


Figure 5-16. Mean densities (No./1,000 m^3) of Gammarus spp. collected during the day (first three collection periods) and during the night (last four collection periods) during the entrainment abundance study (all stations and depths combined), Indian Point Generating Station, 1978. (See Appendix C for water quality data.)

TABLE 5-29 MEAN DENSITY OF GAMMARUS SPP. COLLECTED AT THE INTAKES AND DISCHARGE OF THE INDIAN POINT GENERATING STATION, 1978[a]

Sampling Date	Mean Density (No./1,000 m^3)[b]							
	Station I2		Station I3		Station D1		All Stations[c]	
	Day	Night	Day	Night	Day	Night	Day	Night
16 MAR	--	--	158.6	964.0	--	--	158.6	964.0
17 APR	--	--	157.7	7,901.8	--	--	157.7	7,901.8
4 MAY	--	--	748.2	8,788.7	--	--	748.2	8,788.7
11 MAY	--	--	101.2	7,444.1	--	--	101.2	7,444.1
18 MAY	--	--	208.9	471.4	--	--	208.9	471.4
25 MAY	--	--	240.3	6,829.0	--	--	240.3	6,829.0
1 JUN	408.9	5,737.4	3,307.3	14,064.1	6,383.3	26,006.3	3,368.8	15,463.6
8 JUN	527.1	6,575.1	--	--	3,270.4	14,387.9	1,898.7	10,481.5
15 JUN	427.5	2,055.2	--	--	725.8	4,646.8	567.9	3,351.0
22 JUN	242.8	698.7	--	--	479.4	2,051.1	368.0	1,436.4
29 JUN	88.1	4,527.5	--	--	556.6	11,487.4	412.4	8,007.4
5 JUL	224.5	647.4	--	--	385.6	2,049.4	309.8	1,348.4
13 JUL	259.1	1,371.1	--	--	787.2	2,096.3	556.2	1,785.5
17 JUL	278.6	1,064.0	--	--	436.1	1,795.2	357.3	1,445.5
24 JUL	113.7	1,281.7	--	--	392.8	2,333.9	262.5	1,882.9
7 AUG	67.6	1,595.2	--	--	663.5	2,842.4	425.2	2,149.5
11 SEP	133.0	322.7	49.1	569.5	124.6	561.1	100.1	484.5
10 OCT	36.0	980.4	74.4	797.0	164.9	1,076.9	96.2	950.6
6 NOV	277.3	1,959.4	364.4	2,238.6	766.3	4,833.0	476.7	3,040.3
11 DEC	412.9	2,351.9	--	--	829.4	2,697.6	621.2	2,524.8

(a) See Appendix Tables G.1-1, G.2-1, and G.3-1 for densities of Gammarus spp. collected during each collection period and at each sampling depth.

(b) Mean density $(\bar{Y}) = \frac{\sum^{ab}\sum Y}{n}$

where

Y = density at a given sampling depth (a) and collection period (b).
n = number of samples collected during a specific 12 hour sampling effort.

(c) Average for all stations $= \frac{\sum^{c}\bar{Y}}{N}$

where:

$\bar{Y}$ = mean density for each station (c) during a 12-hour sampling effort.
N = number of stations sampled during a given sampling effort.

Note: Dashes (--) indicate data not collected because of unit outages (see Table 4-2 for sampling schedule and unit operation).

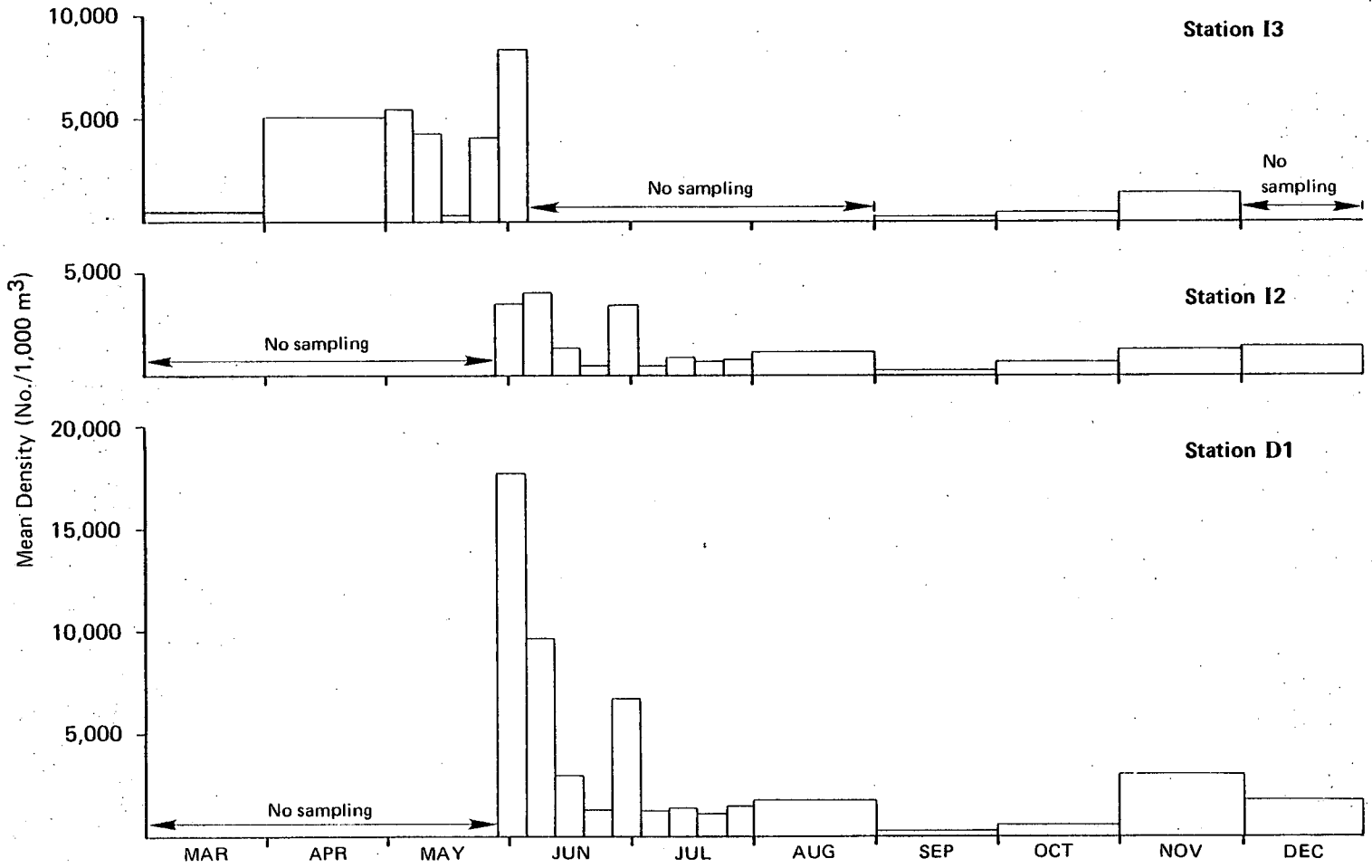


Figure 5-17. Mean densities (No./1,000 m^3) of Gammarus spp. collected at each station during the entrainment abundance study (all depths and collection periods combined), Indian Point Generating Station, 1978.

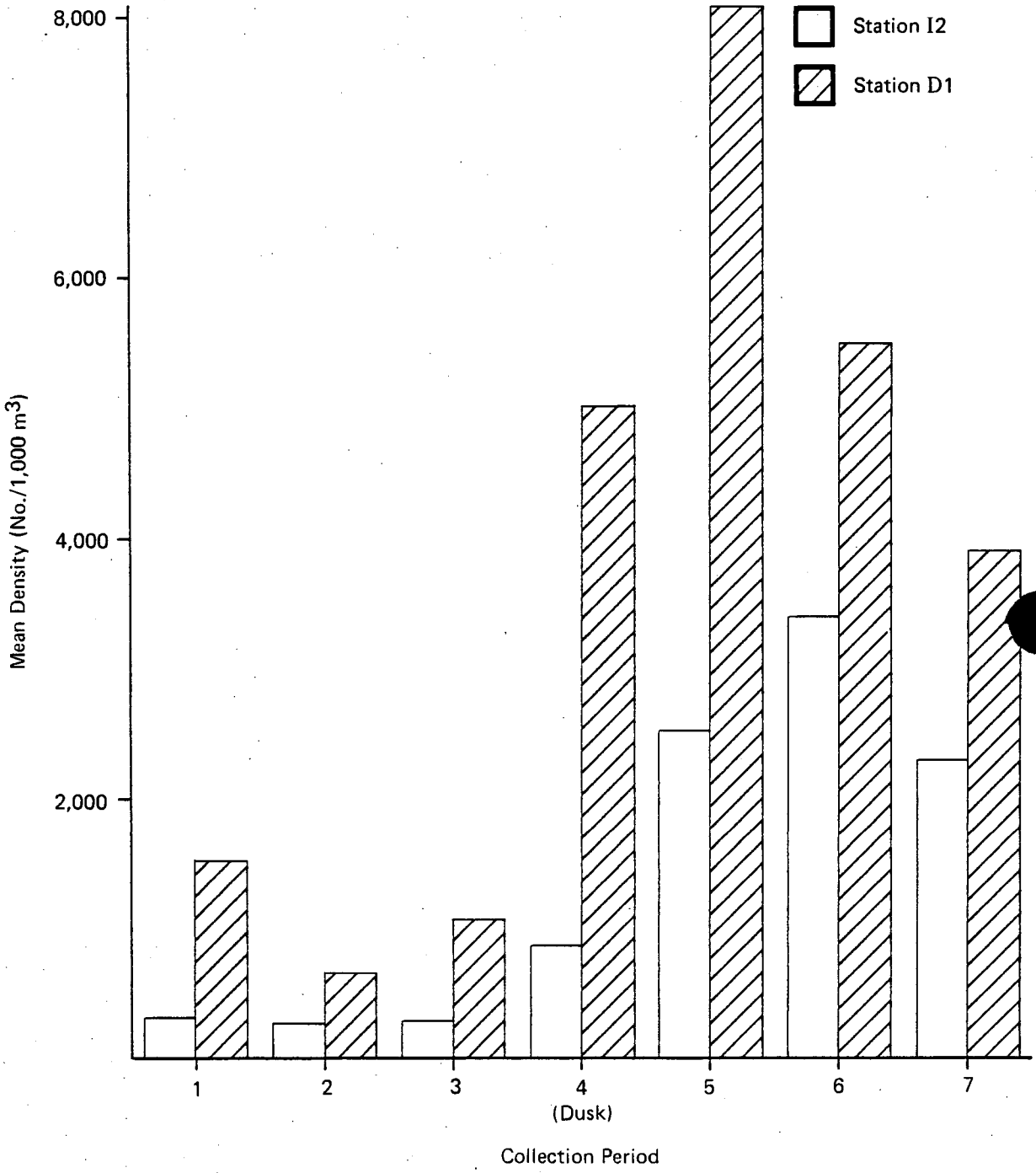


Figure 5-18. Diel distribution of Gammarus spp. collected at Stations I2 and D1 during the entrainment abundance study (averaged over all sampling dates and all depths), Indian Point Generating Station, 1978.

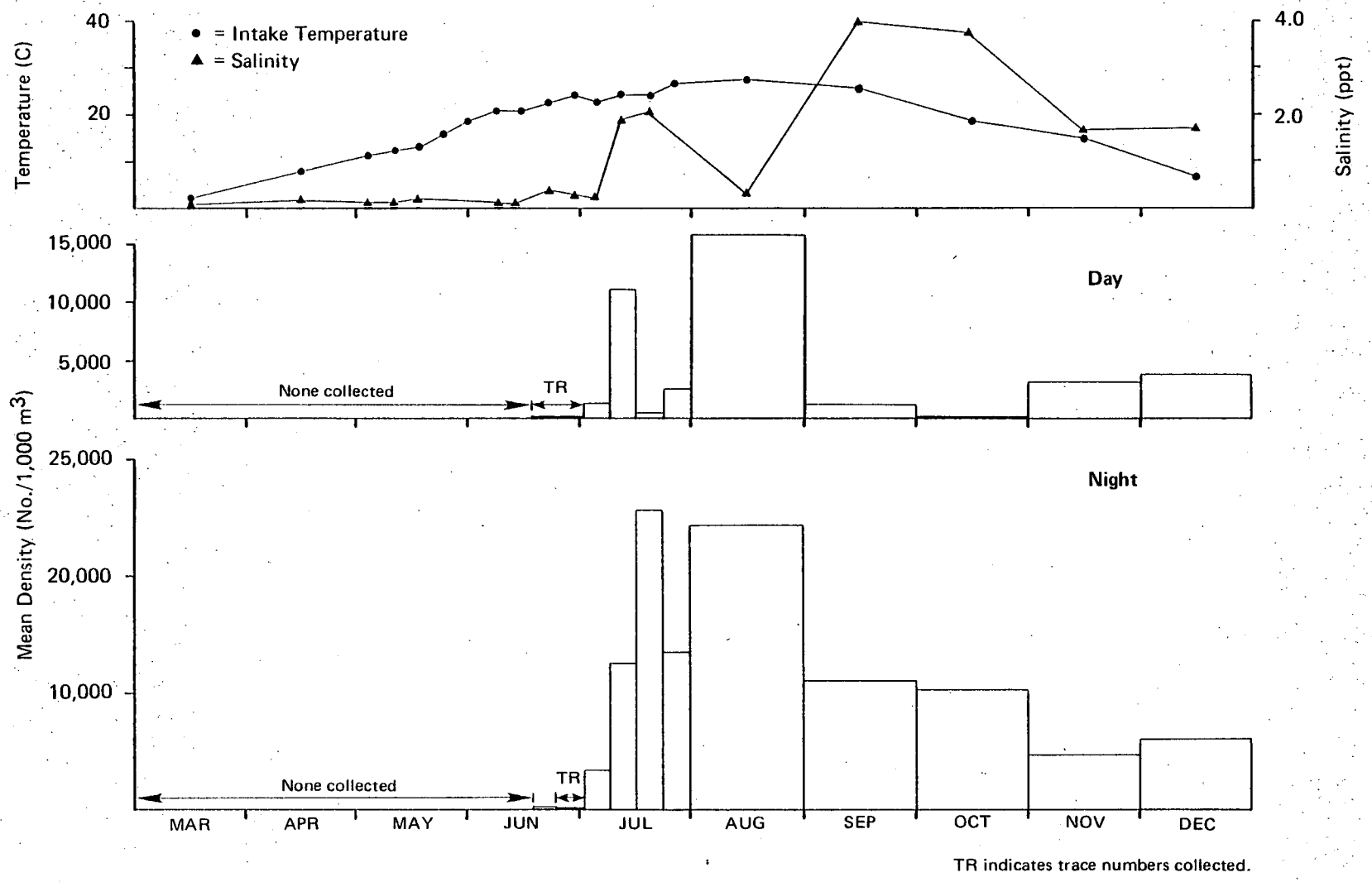


Figure 5-19. Mean densities (No./1,000 m^3) of Neomysis americana collected during the day (first three collection periods) and during the night (last four collection periods) during the entrainment abundance study (all stations and depths combined), Indian Point Generating Station, 1978. (See Appendix C for water quality data.)

TABLE 5-30 MEAN DENSITY OF NEOMYSIS AMERICANA COLLECTED AT THE INTAKES AND DISCHARGE OF THE INDIAN POINT GENERATING STATION, 1978[a]

Sampling Date	Mean Density (No./1,000 m^3)[b]							
	Station I2		Station I3		Station D1		All Stations[c]	
	Day	Night	Day	Night	Day	Night	Day	Night
16 MAR	--	--	0.0	0.0	--	--	0.0	0.0
17 APR	--	--	0.0	0.0	--	--	0.0	0.0
4 MAY	--	--	0.0	0.0	--	--	0.0	0.0
11 MAY	--	--	0.0	0.0	--	--	0.0	0.0
18 MAY	--	--	0.0	0.0	--	--	0.0	0.0
25 MAY	--	--	0.0	0.0	--	--	0.0	0.0
1 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 JUN	0.0	0.0	--	--	0.0	0.0	0.0	0.0
15 JUN	0.0	0.0	--	--	0.0	0.0	0.0	0.0
22 JUN	27.1	233.4	--	--	172.6	302.9	104.2	271.3
29 JUN	0.0	21.2	--	--	18.9	33.0	13.1	27.1
5 JUL	23.4	3,384.6	--	--	2,567.8	3,479.8	1,370.5	3,432.2
13 JUL	3,731.0	12,228.3	--	--	16,468.4	12,775.8	10,895.8	12,541.2
17 JUL	312.1	19,168.3	--	--	793.2	30,815.3	552.7	25,245.0
24 JUL	1,505.9	12,097.9	--	--	3,735.1	14,546.8	2,694.8	13,497.3
7 AUG	1,240.0	25,703.7	--	--	25,022.6	22,342.1	15,509.5	24,209.7
11 SEP	1,371.6	14,804.0	498.9	9,595.9	1,860.9	8,613.6	1,214.0	11,004.5
10 OCT	150.5	6,891.5	74.4	12,161.2	414.8	11,796.9	218.3	10,380.1
6 NOV	509.4	4,070.5	5,999.9	3,137.6	2,663.7	7,039.6	3,155.7	4,768.6
11 DEC	1,646.7	2,142.3	--	--	5,968.4	9,990.6	3,807.6	6,066.4

(a) See Appendix Tables G.1-1, G.2-1, and G.3-1 for densities of N. americana collected during each collection period and at each sampling depth.

(b) Mean density $(\bar{Y}) = \frac{\sum^{ab}\sum Y}{n}$

where

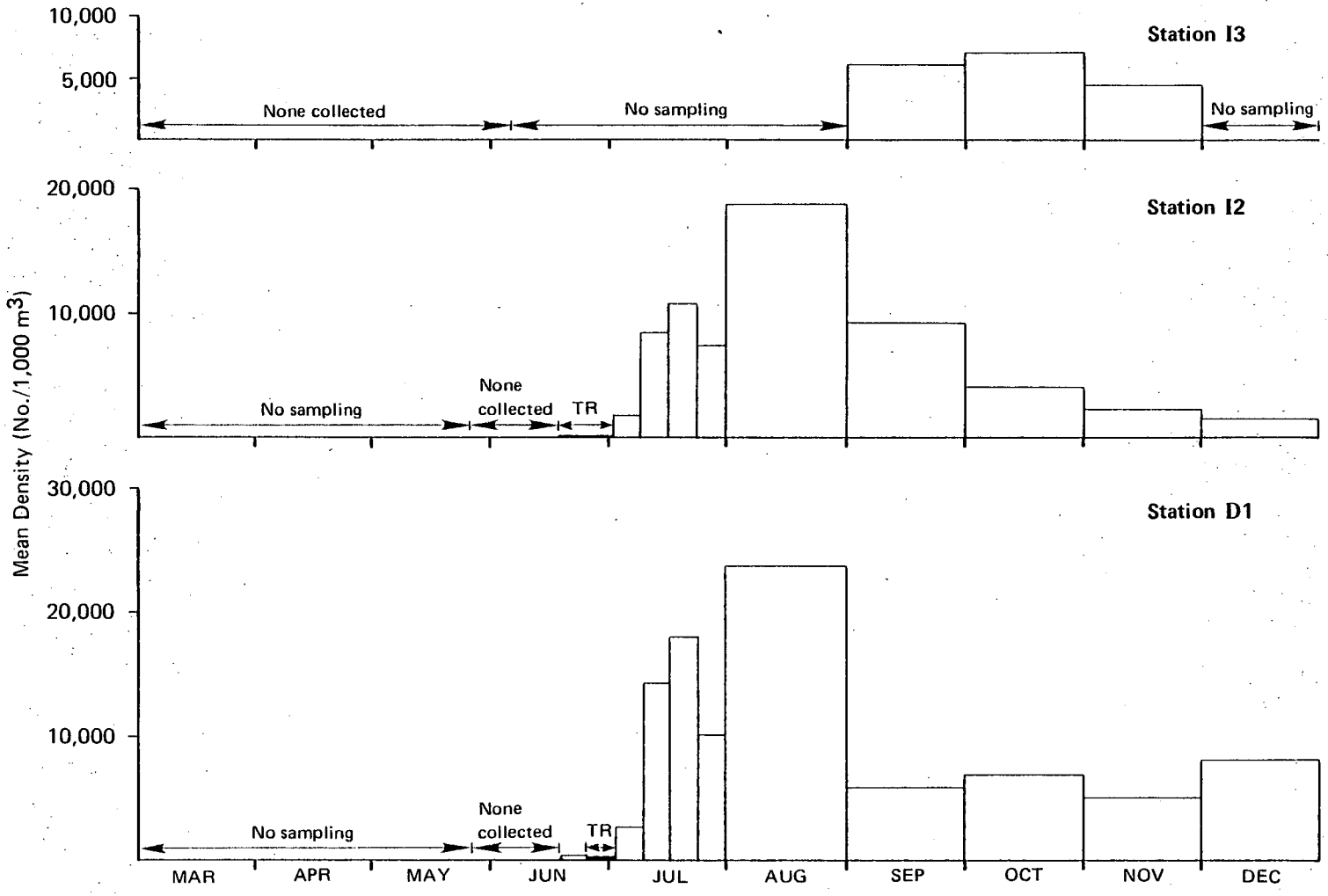
Y = density at a given sampling depth (a) and collection period (b).
n = number of samples collected during a specific 12 hour sampling effort.

(c) Average for all stations $= \frac{\sum^{c}\bar{Y}}{N}$

where:

$\bar{Y}$ = mean density for each station (c) during a 12-hour sampling effort.
N = number of stations sampled during a given sampling effort.

Note: Dashes (--) indicate data not collected because of unit outages (see Table 4-2 for sampling schedule and unit operation).



TR indicates trace numbers collected.

Figure 5-20. Mean densities (No./1,000 m^3) of Neomysis americana collected at each station during the entrainment abundance study (all depths and collection periods combined), Indian Point Generating Station, 1978.

Entrainment abundance estimates of N. americana were lower during the day (collection periods 1, 2, and 3) than during the night (collection periods 5, 6, and 7) (Figure 5-21). N. americana were most abundant during the fifth collection period, about 2 hours after dusk. Entrainment abundance estimates at Stations I2 and D1 were relatively similar during dusk and at night (collection periods 4, 5, 6, and 7), but were lower at Station I2 than Station D1 during the day (collection periods 1, 2 and 3).

5.2.4 Monoculodes edwardsi

Monoculodes edwardsi were collected at the intake and discharge stations of the Indian Point plant throughout the sampling season (March to December). Entrainment abundance estimates of M. edwardsi remained fairly low during the spring and early summer, but increased substantially in July as the salt front moved into the Indian Point area (Figure 5-22). For the period July through December, average densities of M. edwardsi ranged from 14.3 to 922.6 per 1,000 m^3 during the day (collection periods 1, 2, and 3) and from 808.0 to 2,760.9 per 1,000 m^3 during the night (collection periods 4, 5, 6, and 7), as averaged over all sampling depths, stations, and appropriate collection periods (Table 5-31). High entrainment abundance estimates of M. edwardsi were observed during July and August and again during November and December. As observed in the near-field river study (Subsection 5.1.2.2.4), the abundance of M. edwardsi decreased during September and October, when salinities exceeded 3 ppt.

As observed for Neomysis americana and Gammarus spp., entrainment abundance estimates for Monoculodes edwardsi were generally higher at the discharge station than at the two intake stations (Figure 5-23). The abundance of M. edwardsi was also substantially greater during the night than during the day; highest densities were observed during night collection periods 5, 6, and 7 (Figure 5-24). At dusk, densities of M. edwardsi were similar to densities observed during the day (collection periods 1, 2, and 3).

5.2.5 Chaoborus punctipennis

Chaoborus punctipennis larvae and pupae were collected at the intake and discharge stations of the Indian Point plant from April through December. The majority of C. punctipennis were collected from June through August, when mean densities ranged from 22.6 to 290.7 per 1,000 m^3 during the day (collection periods 1, 2, and 3) and from 199.8 to 1,192.2 per 1,000 m^3 at night (collections periods 4, 5, 6, and 7), as averaged over all sampling depths, stations, and appropriate collection periods (Table 5-32, Figure 5-25).

Although entrainment abundance for Chaoborus punctipennis was higher at night (Figure 5-25), as consistent with the other macrozooplankton taxa examined, mean densities were generally higher at the intake stations than at the discharge stations (Figure 5-26), in contrast to the other taxa. An examination of the diel distribution of C. punctipennis at Intake Station I2 and Discharge Station D2, however, indicated that abundances were typically slightly higher at the discharge station during the day and dusk collection periods, but higher at the intake station during the night collection periods (Figure 5-[illegible]); the greatest station difference occurred during collection period 5 (2 hours after dusk) when the mean density at Station I2 was nearly twice as great as the mean density at Station D1 (averaged over all sampling dates and depths).

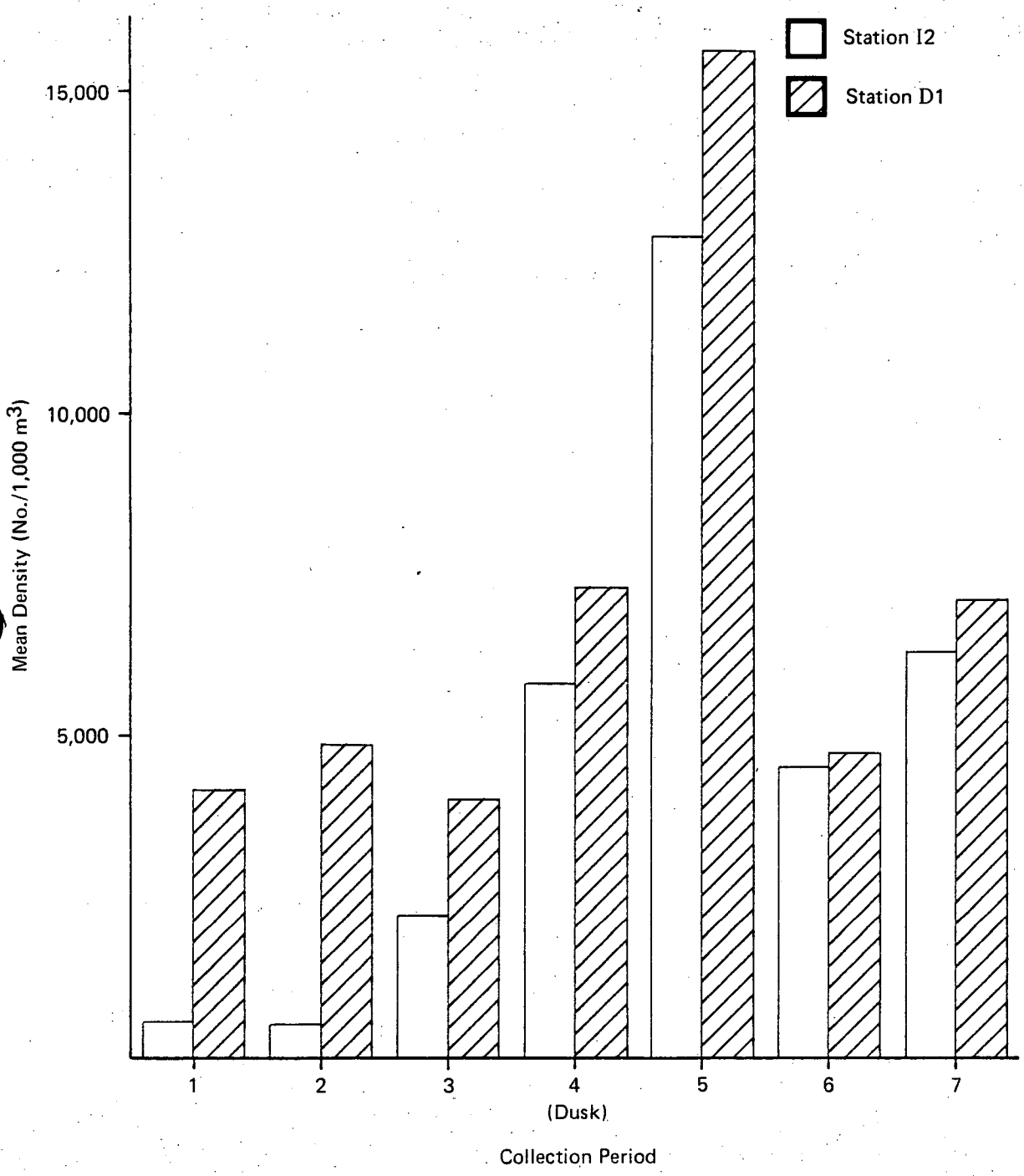
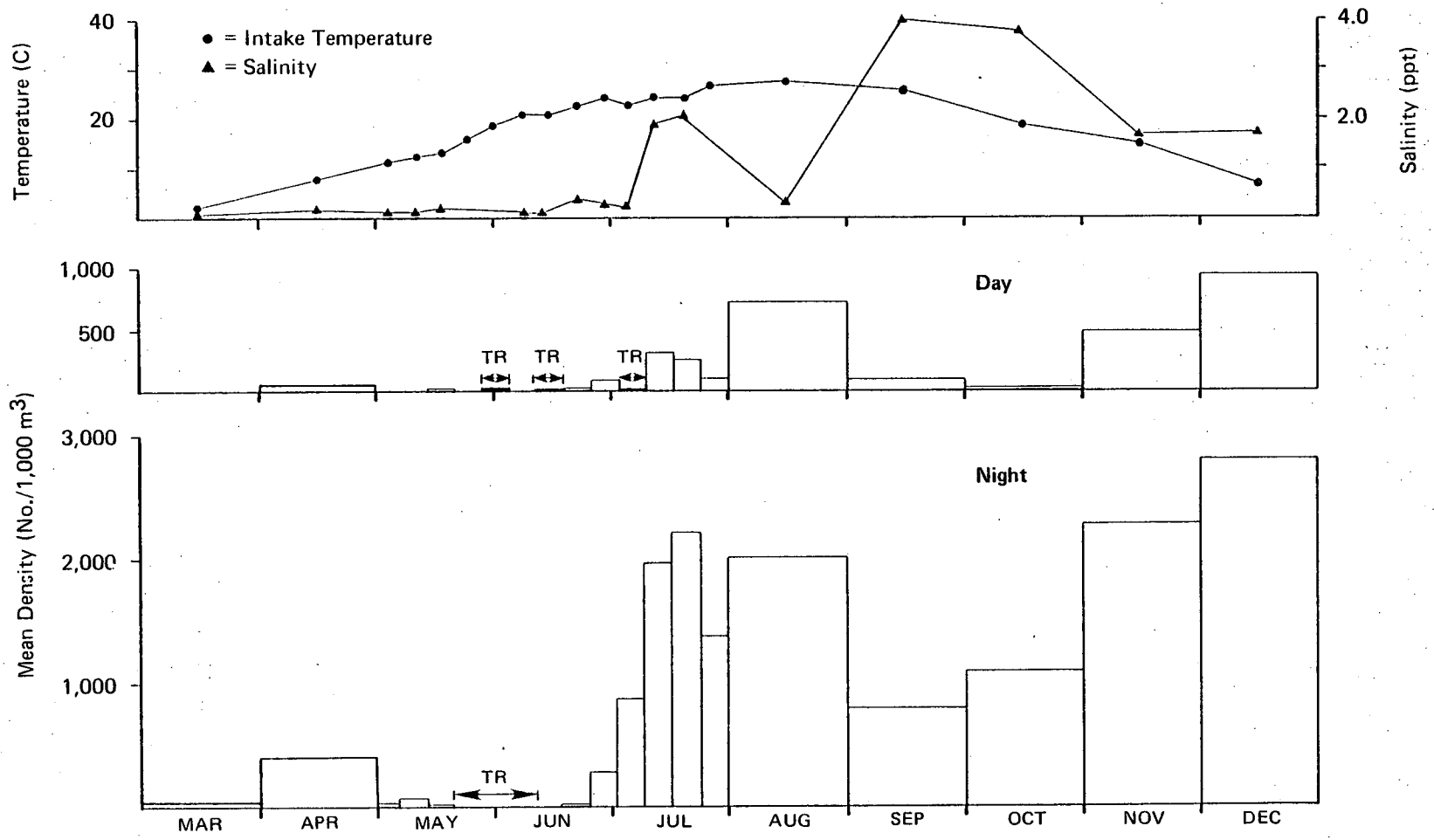


Figure 5-21. Diel distribution of Neomysis americana collected at Stations I2 and D1 during the entrainment abundance study (averaged over all sampling dates and all depths), Indian Point Generating Station, 1978.



TR indicates trace numbers collected.

Figure 5-22. Mean densities (No./1,000 m^3) of Monoculodes edwardsi collected during the day (first three collection periods) and during the night (last four collection periods) during the entrainment abundance study (all stations and depths combined), Indian Point Generating Station, 1978. (See Appendix C for water quali[illegible]ta.)

TABLE 5-31 MEAN DENSITY OF *MONOCULODES EDWARDSI* COLLECTED AT THE INTAKES AND DISCHARGE OF THE INDIAN POINT GENERATING STATION, 1978[a]

Sampling Date	Mean Density (No./1,000 m^3)[b]							
	Station I2		Station I3		Station D1		All Stations[c]	
	Day	Night	Day	Night	Day	Night	Day	Night
16 MAR	--	--	0.0	56.5	--	--	0.0	56.5
17 APR	--	--	62.5	421.1	--	--	62.5	421.1
4 MAY	--	--	0.0	61.8	--	--	0.0	61.8
11 MAY	--	--	0.0	93.9	--	--	0.0	93.9
18 MAY	--	--	25.5	43.8	--	--	25.5	43.8
25 MAY	--	--	0.0	11.7	--	--	0.0	11.7
1 JUN	0.0	2.7	0.0	0.0	1.9	4.3	0.7	2.7
8 JUN	0.0	0.0	--	--	0.0	1.1	0.0	0.6
15 JUN	0.0	0.0	--	--	4.1	0.0	1.9	0.0
22 JUN	27.8	14.2	--	--	16.9	59.3	22.0	38.8
29 JUN	7.8	153.9	--	--	140.2	460.4	99.4	307.2
5 JUL	0.0	594.7	--	--	27.1	1,164.8	14.3	879.7
13 JUL	73.3	1,783.6	--	--	519.1	2,097.5	324.1	1,963.0
17 JUL	92.9	2,019.2	--	--	448.8	2,329.8	270.9	2,181.2
24 JUL	9.2	1,546.3	--	--	197.3	1,241.2	109.5	1,372.0
7 AUG	19.2	1,691.8	--	--	1,174.0	2,394.1	712.1	2,004.0
11 SEP	101.5	749.1	48.4	695.5	114.9	979.3	86.7	808.0
10 OCT	7.7	953.0	52.2	1,022.8	26.4	1,241.8	30.5	1,075.9
6 NOV	54.2	2,057.2	441.1	1,948.3	931.9	2,704.4	491.9	2,241.8
11 DEC	857.6	3,034.4	--	--	987.6	2,487.4	922.6	2,760.9

(a) See Appendix Tables G.1-1, G.2-1, and G.3-1 for densities of *M. edwardsi* collected during each collection period and at each sampling depth.

(b) Mean density $(\bar{Y}) = \frac{\sum^{ab}\sum Y}{n}$

where

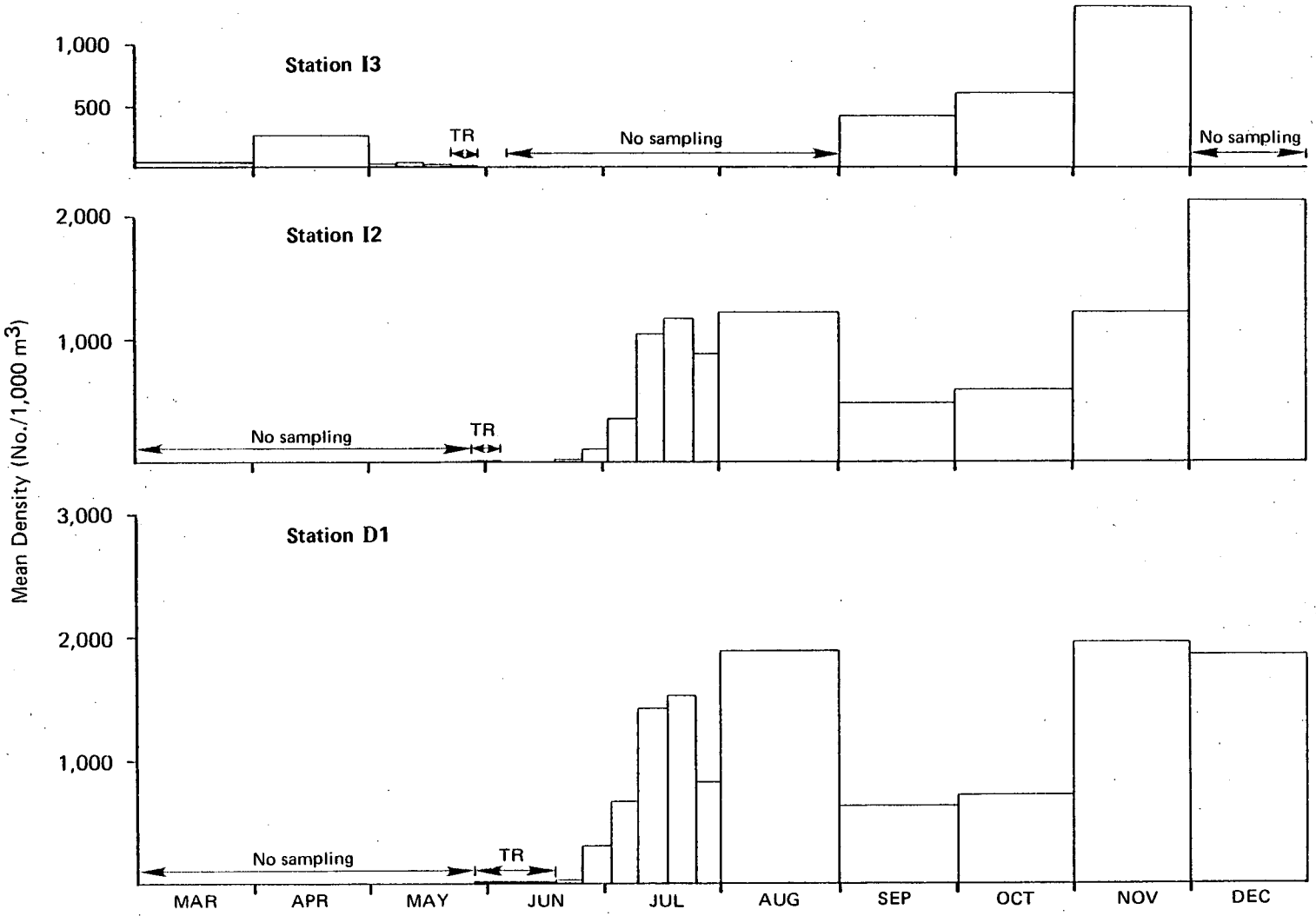
Y = density at a given sampling depth (a) and collection period (b).
n = number of samples collected during a specific 12 hour sampling effort.

(c) Average for all stations $= \frac{\sum^{c}\bar{Y}}{N}$

where:

$\bar{Y}$ = mean density for each station (c) during a 12-hour sampling effort.
N = number of stations sampled during a given sampling effort.

Note: Dashes (--) indicate data not collected because of unit outages (see Table 4-2 for sampling schedule and unit operation).



TR indicates trace numbers collected.

Figure 5-23. Mean densities (No./1,000 m^3) of Monoculodes edwardsi collected at each station during the entrainment abundance study (all depths and collection periods combined), Indian Point Generating Station, 1978.

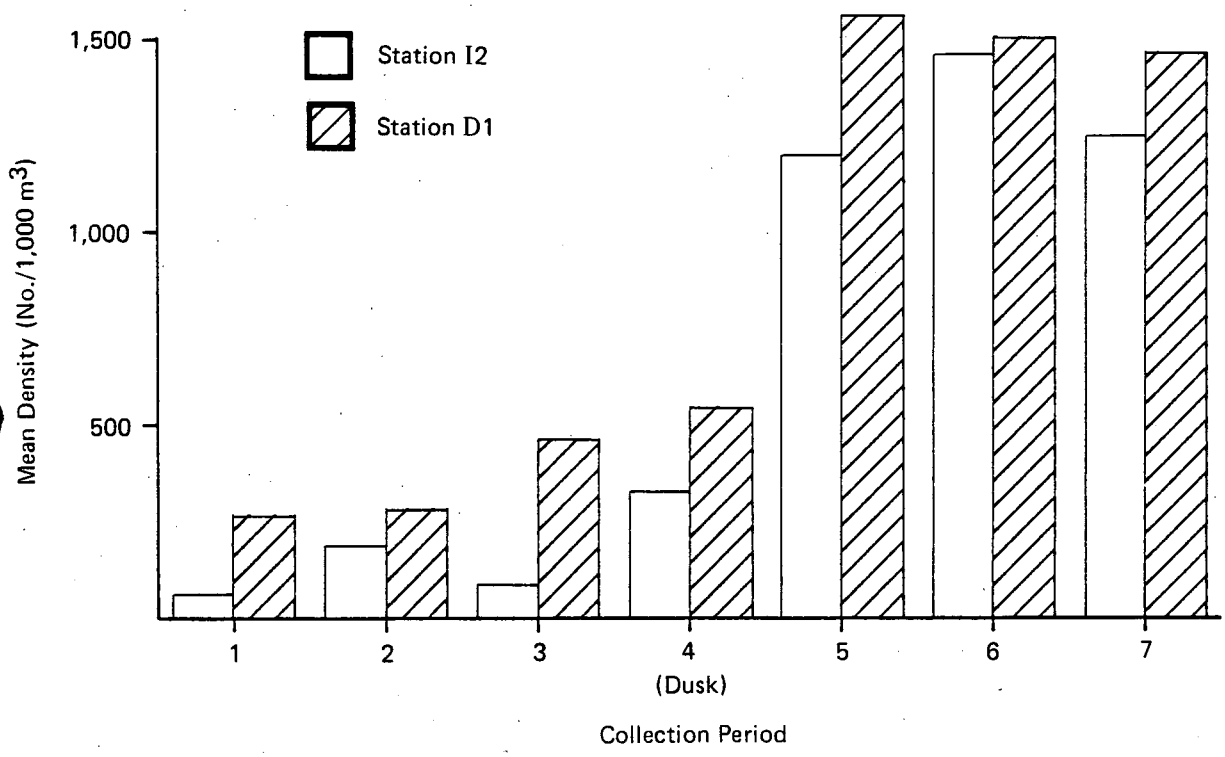


Figure 5-24. Diel distribution of Monoculodes edwardsi collected at Stations I2 and D1 during the entrainment abundance study (averaged over all sampling dates and all depths), Indian Point Generating Station, 1978.

TABLE 5-32 MEAN DENSITY OF CHAOBORUS PUNCTIPENNIS COLLECTED AT THE INTAKES AND DISCHARGE OF THE INDIAN POINT GENERATING STATION, 1978[a]

Sampling Date	Mean Density (No./1,000 m^3)[b] Station I2 Day	Station I2 Night	Station I3 Day	Station I3 Night	Station D1 Day	Station D1 Night	All Stations[c] Day	All Stations[c] Night
16 MAR	--	--	0.0	0.0	--	--	0.0	0.0
17 APR	--	--	0.0	43.2	--	--	0.0	43.2
4 MAY	--	--	33.0	0.0	--	--	33.0	0.0
11 MAY	--	--	19.8	305.6	--	--	19.8	305.6
18 MAY	--	--	0.0	108.9	--	--	0.0	108.9
25 MAY	--	--	0.0	321.9	--	--	0.0	321.9
1 JUN	12.9	111.6	262.0	188.2	155.7	294.8	139.0	199.8
8 JUN	0.0	1,034.4	--	--	165.4	1,011.4	82.7	1,022.9
15 JUN	18.7	793.7	--	--	91.7	447.7	53.1	620.7
22 JUN	35.5	397.1	--	--	133.6	913.9	87.4	679.0
29 JUN	31.1	478.9	--	--	173.5	707.5	129.7	593.2
5 JUL	17.3	793.2	--	--	41.5	291.3	30.1	542.2
13 JUL	182.2	1,969.7	--	--	361.2	609.1	282.9	1,192.2
17 JUL	4.1	721.4	--	--	41.1	369.8	22.6	537.9
24 JUL	94.3	1,062.5	--	--	52.0	839.1	71.7	934.8
7 AUG	35.9	1,258.4	--	--	460.6	653.1	290.7	989.4
11 SEP	7.5	107.3	0.0	85.5	0.0	38.5	2.4	77.1
10 OCT	0.0	13.2	8.2	8.6	0.0	16.4	3.0	12.7
6 NOV	18.1	33.5	0.0	41.5	8.3	43.7	8.4	39.8
11 DEC	0.0	9.6	--	--	0.0	16.1	0.0	12.8

(a) See Appendix Tables G.1-1, G.2-1, and G.3-1 for densities of C. punctipennis collected during each collection period and at each sampling depth.

(b) Mean density $(\bar{Y}) = \frac{\sum^{ab}\sum Y}{n}$

where

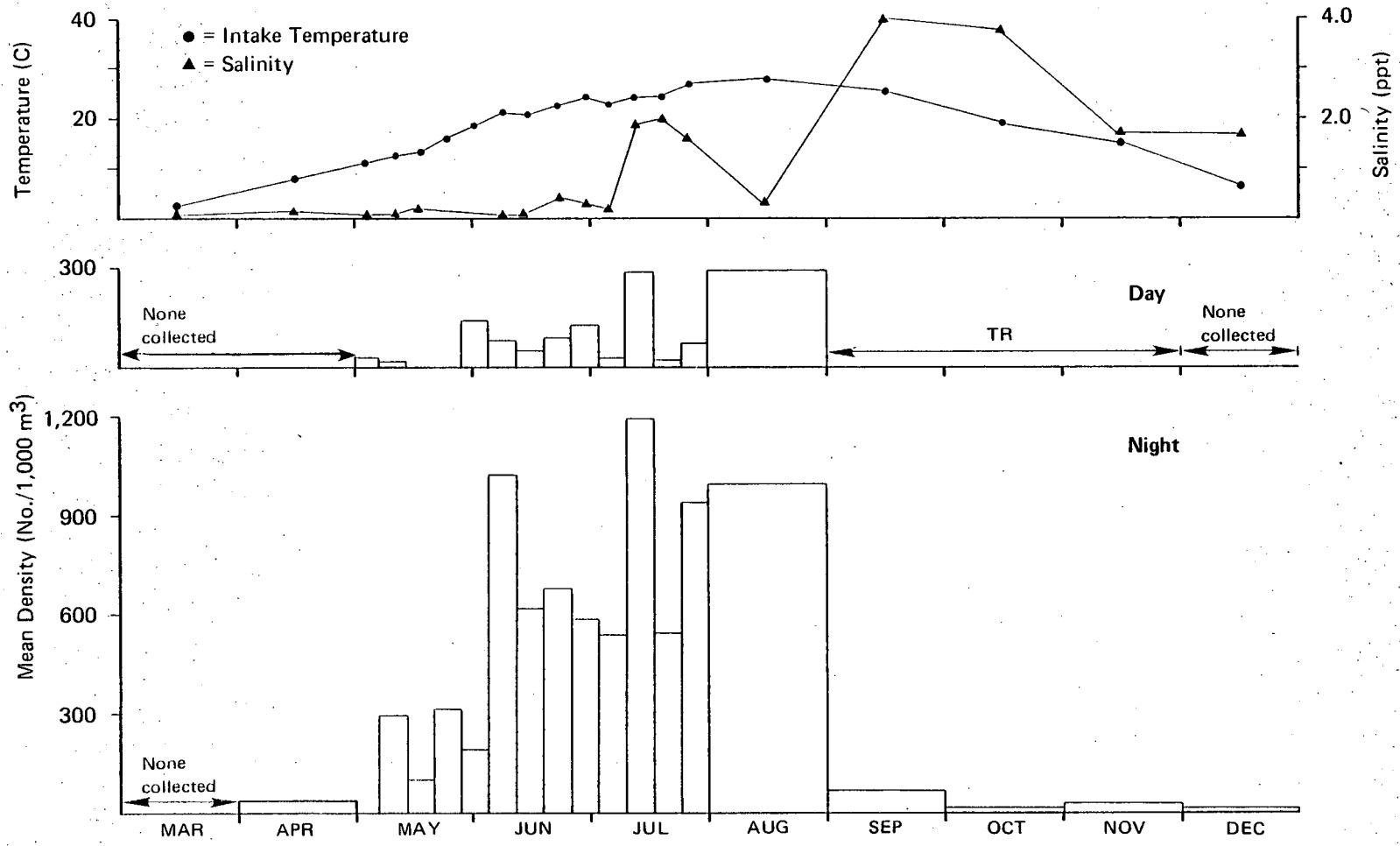
Y = density at a given sampling depth (a) and collection period (b).
n = number of samples collected during a specific 12 hour sampling effort.

(c) Average for all stations $= \frac{\sum^{c}\bar{Y}}{N}$

where:

$\bar{Y}$ = mean density for each station (c) during a 12-hour sampling effort.
N = number of stations sampled during a given sampling effort.

Note: Dashes (--) indicate data not collected because of unit outages (see Table 4-2 for sampling schedule and unit operation).



TR indicates trace numbers collected.

Figure 5-25. Mean densities (No./1,000 m^3) of Chaoborus punctipennis collected during the day (first three collection periods) and during the night (last four collection periods) during the entrainment abundance study (all stations and depths combined), Indian Point Generating Station, 1978. (See Appendix C for water quality data.)

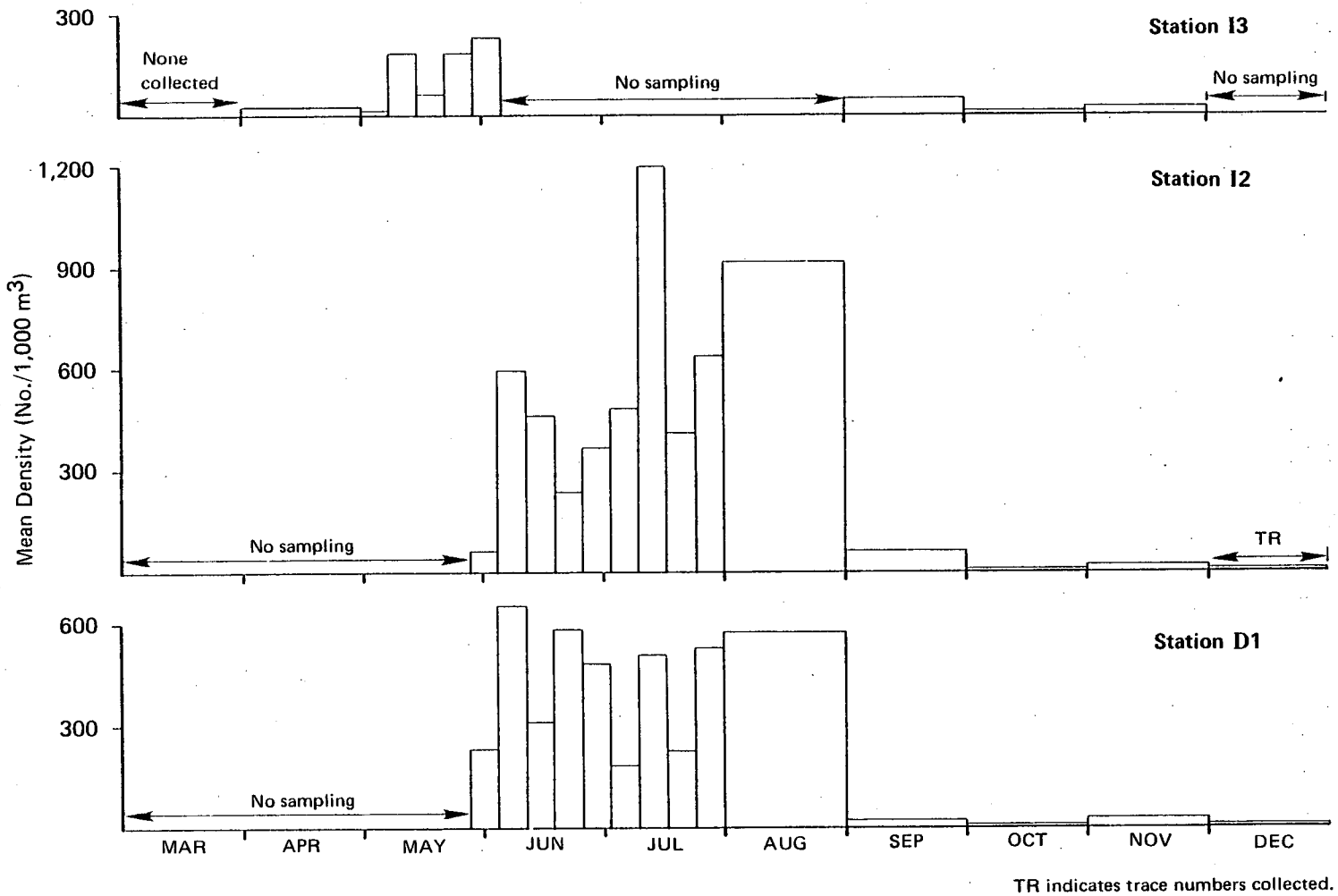


Figure 5-26. Mean densities (No./1,000 m^3) of Chaoborus punctipennis collected at each station during the entrainment abundance study (all depths and collection periods combined), Indian Point Generating Station, 1978.

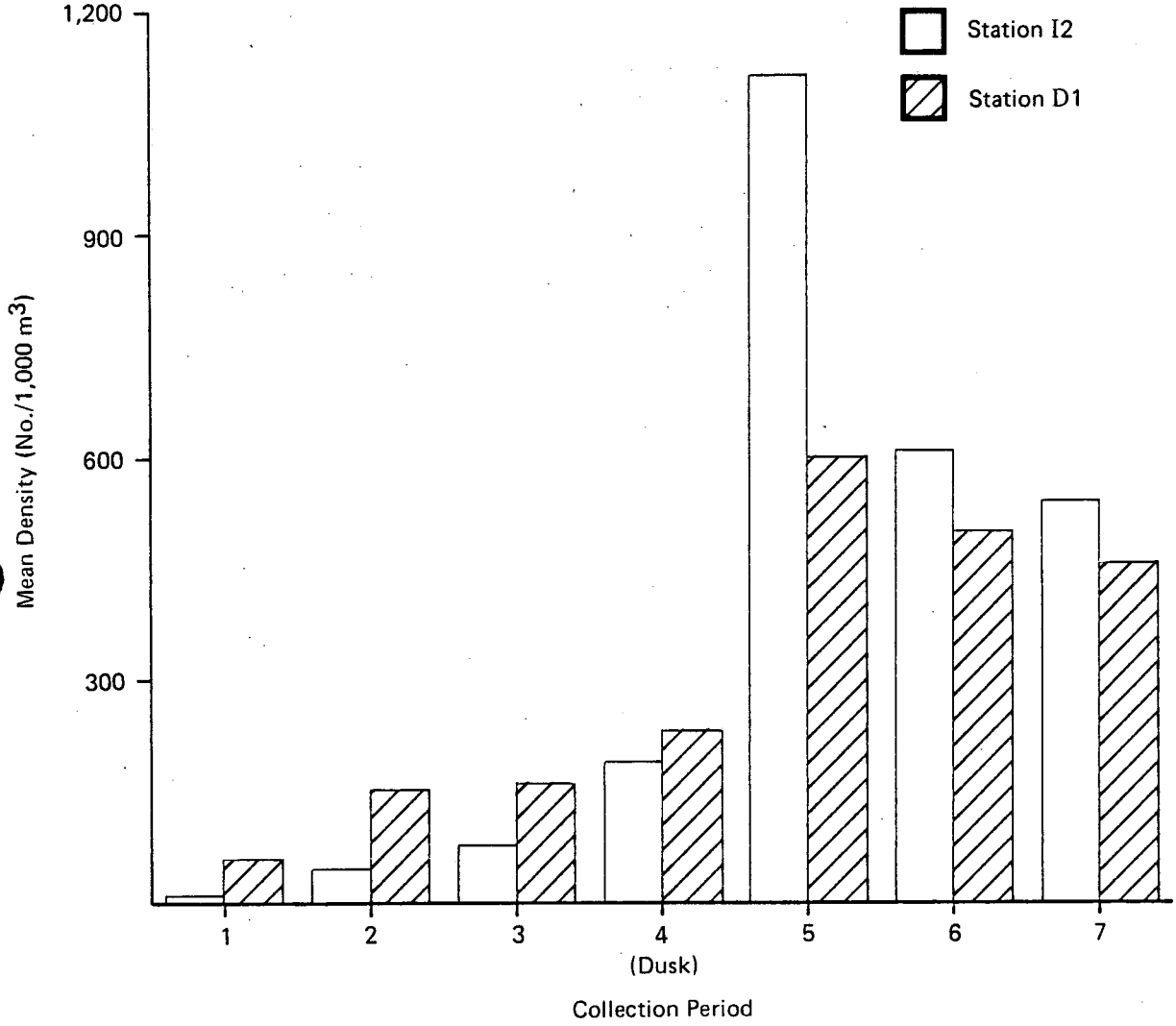


Figure 5-27. Diel distribution of Chaoborus punctipennis collected at Stations I2 and D1 during the entrainment abundance study (averaged over all sampling dates and all depths), Indian Point Generating Station, 1978.

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APPENDIX A

ENTRAINMENT SURVIVAL STUDY
INDIAN POINT GENERATING STATION, 1978

APPENDIX A

A.1 INTRODUCTION

The entrainment survival study described herein was conducted at the Indian Point Generating Station during 1978 in conjunction with entrainment abundance sampling (Sections 4.2 and 5.2). This study represents a continuation of entrainment survival experiments, utilizing stationary nets, conducted by the New York University Medical Center (NYU) from 1971 through 1977 (NYU 1973, 1974, 1976, 1977, 1978). Ichthyoplankton survival results based upon this collection technique, however, have been shown to be affected by variations in water velocities between intake and discharge sampling stations (O'Connor and Shaffer 1977). In light of these findings, additional entrainment survival studies were conducted at the Indian Point plant in 1977 and 1978 by Ecological Analysts, Inc. (EA 1978a, 1979). These studies employed pumps to deliver samples of intake and discharge water into a flume (larval table) that served to reduce the velocity of water and concentrate the organisms collected. This sampling gear referred to as the pump/larval table collection system, was specifically designed to eliminate the effect of intake and discharge velocity differences in assessing entrainment survival.

Following is a description of the 1978 net entrainment survival study conducted at the Indian Point plant, and the results obtained for selected organisms (i.e., striped bass early life stages, and the macrozooplankton [illegible]xa Gammarus spp., Neomysis americana, Monoculodes edwardsi, and Chaoborus [illegible]nctipennis) based upon stationary net collections at the Unit 2 and Unit 3 intakes (Stations I2 and I3, respectively) and in the discharge canal (Station D1). Survival comparisons for organisms collected at Stations I2 and D1 were limited to periods when Unit 2 was operating (1 June through 31 December). Survival determinations for organisms collected at Station I3 were similarly conducted during operation of Unit 3 (March through 7 June and September through November); however, no comparable discharge station was sampled during these periods. Comparisons are also presented relative to the survival of striped bass collected in stationary nets versus the pump/larval table collection systems (EA 1979) during the 1978 sampling season.

A.2 METHODS

A.2.1 Sampling Stations

Entrainment survival determinations were made for selected organisms collected in stationary plankton nets at the Indian Point plant during the 1978 entrainment abundance study (Section 4.2). Station I2 was located at the Unit 2 intake between the trash racks and the traveling screens in forebay 25, whereas Station I3 was located along the concrete facing, approximately 3 m in front of the mid-point of the Unit 3 intake structure (Figure 4-2). Station D1 was located upstream of the point where discharge water from Unit 3 enters the common discharge canal; samples collected at this location provided information on organisms entrained through Unit 2 [illegible]d Unit 1 (when Unit 1 circulating pumps were in operation). Sampling [illegible]s not conducted in the Unit 3 discharge canal because of high water velocities and the consequent inability to maintain sampling frames in this portion of the cooling water system.

A.2.2 Sampling Procedures

A.2.2.1 Sample Collection

Samples examined for entrainment survival were collected monthly in March and April, weekly from May through July, and monthly from August through December. Samples were collected at Stations I2 and D1 when Unit 2 was on-line. When only Unit 3 was operating, sampling was restricted to Station I3. Dates on which sampling was conducted at each station, together with unit operation information for those dates, are presented in Table 4-2.

Samples were collected from the surface, middepth, and bottom at intake and discharge stations using 571-µm mesh (Number 0) conical plankton nets (0.5-m diameter opening). Because of space limitations, plankton nets used at the intakes were 1.2 m long, whereas nets used at the discharge station were 1.8 m long. The nets at each station were mounted on a vertical frame that was raised and lowered by a pulley secured to the top of the frame (Figure 4-3). Each net was equipped with a TSK flowmeter* mounted in the center of the net mouth to determine the volume of water sampled. Individual flowmeters were calibrated at the beginning and end of the sampling season at known velocities generated within a test flume located at Johns Hopkins University. Initial and final test values varied by less than 10 percent for each flowmeter used.

Five-minute samples were collected simultaneously at each station with each net once every 2 hours throughout a 12-hour sampling effort, resulting in a total of 21 samples per station (seven collection periods, three sampling depths). Each 12-hour sampling effort was scheduled so that the fourth collection period occurred approximately at dusk. After collection, organisms and detritus were carefully washed from the nets into removable codend collection cups. The collection cups were then removed from the nets and transported to the onsite laboratory for sample sorting.

A.2.2.2 Sample Sorting and Processing

Ichthyoplankton survival was determined for all samples collected at each station; however, macrozooplankton survival was determined only for samples collected during the fifth collection period (2 hours after dusk) when macrozooplankton densities are typically high. At the onsite laboratory, live and stunned macrozooplankton (*Grammarus* spp., *Neomysis americana*, *Monoculodes edwardsi*, and *Chaoborus punctipennis*) and ichthyoplankton were removed from the samples for survival determinations. The remaining sample residual, including dead organisms, was preserved in 10 percent formalin (Figure A-1). Ichthyoplankton and macrozooplankton were classified as live, stunned, or dead according to the following criteria:

Live: *Macrozooplankton/fish larvae*--swimming vigorously with no apparent orientation problems.

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* Duplicate samples were collected at each depth location per station as a contingency in the event of sample loss. The nets used to collect the contingency samples were equipped with General Oceanics (GO) flowmeters.

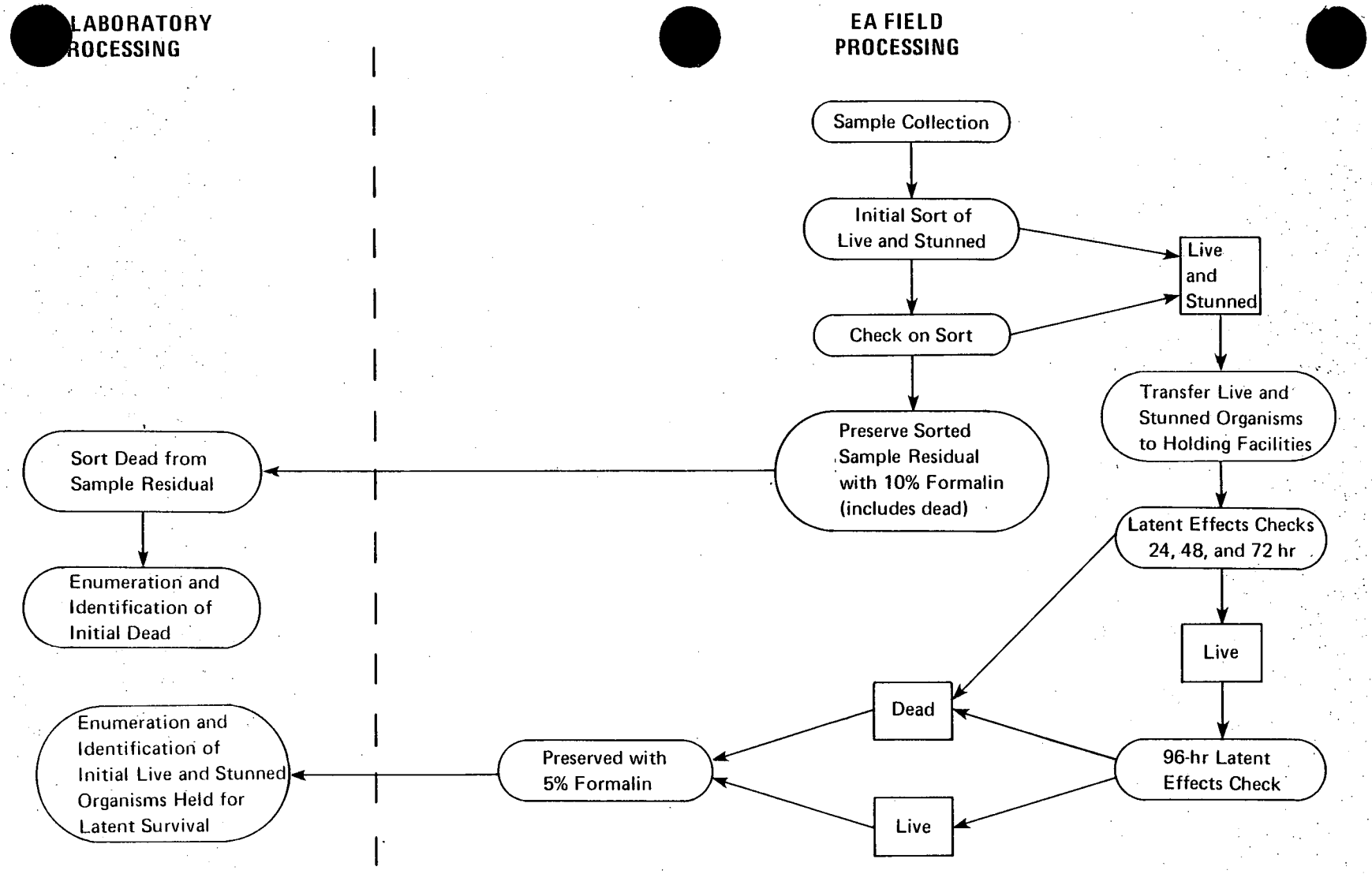

Figure A-1. Work-flow chart for ichthyoplankton and macrozooplankton survival determinations.

Fish Eggs--translucent, chorion complete, not cloudy in any internal portion.

Stunned: Macrozooplankton/fish larvae--swimming abnormally, struggling, swimming on side or upside down; or non-motile except when gently prodded with a probe.

Dead: Macrozooplankton/fish larvae--no vital life signs, no body or opercular movement, no response to gentle probing.

Fish Eggs--opaque, chorion ruptured, or cloudy in any internal portion.

The survival of live and stunned macrozooplankton and ichthyoplankton was monitored every 24 hours over a period of 96 hours following collection. Live and stunned organisms were carefully transferred from the sample to either 1-liter jars (ichthyoplankton, Neomysis, and Chaoborus) or 300-ml culture dishes (Monoculodes and Gammarus). The holding vessels were maintained in an ambient temperature water bath, and all jars with ichthyoplankton were aerated. Monoculodes and Gammarus were fed dried fish food during the observation period to reduce cannibalism. A maximum of 10 macrozooplankton were placed in each holding container. For ichthyoplankton, a maximum of five specimens were placed in each holding jar, young larvae were separated from older larvae and juveniles to reduce the possibility of cannibalism, and eggs were incubated separately.

During periods of high abundance, macrozooplankton were subsampled for latent effects observations. A maximum of 50 live and 50 stunned organisms per sample were retained for latent effects observations. The 50 macrozooplankton subsampled for each life condition included organisms of all four major species. Live and stunned ichthyoplankton were not subsampled for latent survival determinations.

Latent survival observations were made 24, 48, 72, and 96 hours after collection. At each latent survival observation, dead organisms were removed from the holding jars and preserved in vials containing 5 percent formalin. All organisms remaining alive at the 96-hour check were enumerated and preserved in an identical manner.

Preserved samples were transported to the laboratory contractor, LMS, for sample processing (Section 4.2.2.2).

A.2.2.3 Water Quality Measurements

Measurements of water quality were conducted in conjunction with all sample collections. Temperature, conductivity, pH, and dissolved oxygen were measured using a Martek water quality analyzer. Separate water quality measurements were obtained at all three sampling depths at plant intake stations. At the disharge station where the water is well-mixed, water quality measurements were taken only at the surface.

.3 Analytical Procedures

Entrainment survival was examined for striped bass early developmental stages and for the macrozooplankton taxa Gammarus spp., Neomysis americana, Monoculodes edwardsi, and Chaoborus punctipennis. Initial survival of these five selected taxa, and also 96-hour survival for striped bass, was calculated as the ratio of organisms found alive* to the total number of organisms collected, according to the equation

$$P_{I2},\ P_{I3},\ \text{or}\ P_{D1} = \frac{\text{no. of live and stunned}}{\text{total no. collected}}$$

where

P_{I2} = proportion surviving at Intake Station I2

P_{I3} = proportion surviving at Intake Station I3

P_{D1} = proportion surviving at discharge

Latent survival of organisms collected at the discharge was compared to latent survival of organisms collected at the intakes to determine if mortality resulting from entrainment was manifested beyond the initial survival observation. For these comparisons, survival at each latent effects observation was calculated as a proportion of the initial number of alive and stunned anisms (i.e., normalized survival), as follows:

$$\text{Normalized latent survival} = \frac{\text{no. live and stunned at a given latent effects observation}}{\text{no. initial live and stunned}}$$

On inspection of the macrozooplankton survival data, erratic survival patterns were observed in some of the samples collected at the intake stations. Abnormally low survival was observed for eight samples collected at Station I2 and eight samples collected at Station I3. The survival of macrozooplankton collected in these 16 samples differed markedly from survival observed for other macrozooplankton collected at the same stations and during the same sampling effort but at different depths or during different collection periods. For example, initial survival proportions for Gammarus spp., from Station I2 on 29 June 1978 were 0.750 and 1.000 for surface and middepth samples, respectively. In contrast, the initial survival proportion for Gammarus spp. collected in the bottom samples on 29 June 1978 was only 0.392. Furthermore, initial survival proportions for Gammarus spp. collected simultaneously at Discharge Station D1 ranged from 0.866 to 0.957 for samples collected at all three depths. Thus, because of the abnormally low survival proportions for these 16 intake samples, survival data associated with these samples were excluded from subsequent analyses (Appendix Tables I.1-1 through I.2-4).

*Stunned fish were grouped with live fish to avoid potential bias associated with the subjective "stunned" categorization.

A.3 RESULTS AND DISCUSSION

A.3.1 Striped Bass

A.3.1.1 Initial Survival

The initial survival of entrained striped bass eggs, yolk-sac larvae, post yolk-sac larvae, and juveniles were examined for all discharge temperatures combined and also separately for three discharge temperature categories: less than 30.0 C, from 30.0 to 32.9 C, and greater than 32.9 C (Table A-1). These temperature categories were selected on the basis of laboratory and field thermal tolerance studies conducted in 1976 and 1977 (EA 1978b, 1978c), and are consistent with temperature categories examined relative to entrainment survival results obtained at the Indian Point plant during 1977 and 1978 using pump/larval table collection systems (EA 1978a, 1979).

Initial survival proportions for striped bass eggs differed considerably among the three sampling stations. The initial survival proportion for striped bass eggs at Station I3 during May through the first week of June (0.654) was much higher than the survival proportions for eggs at Stations I2 and D1 later in the sampling season (0.110 and 0.013, respectively) (Table A-1). Closer examination of the high survival observed at Station I3, however, indicated that survival proportions were lower during the 1 June sampling effort than during the May sampling efforts. As shown in Table A-2, the initial proportion of striped bass eggs surviving at Station I3 on 1 June was lower than that observed in May but higher than at either Stations I2 or D1.

Survival proportions of striped bass yolk-sac larvae were low for all sampling stations (Table A-1). No live yolk-sac larvae were collected at Discharge Station D1; survival proportions at Intake Stations I3 and I2 were 0.071 and 0.171, respectively (based on 14 yolk-sac larvae collected at I3 and 76 yolk-sac larvae collected at I2).

Survival of striped bass post yolk-sac larvae was much higher at Intake Station I2 than at Discharge Station D1; no striped bass post yolk-sac larvae were collected at Station I3 prior to the Unit 3 shutdown on 7 June. The survival proportion at Station I2 was 0.548 (based on 217 post yolk-sac larvae collected), whereas the survival proportion at Station D1 was 0.042 (based on 1,106 post yolk-sac larvae collected) (Table A-1). Closer examination of survival at Station D1 indicated that survival proportions were highest (0.133) at discharge temperatures less than 30.0 C. The survival proportion observed at discharge temperatures ranging from 30.0 C through 32.9 C was 0.037, and at temperatures above 32.9 C, the survival proportion at Station D1 was 0.065.

As observed for post yolk-sac larvae, survival of juvenile striped bass at the intake was much higher than survival at the discharge, although the number of juveniles collected was small. All juveniles collected at Intake Station I2 (27 fish) were alive, whereas the survival proportion of juveniles collected at Discharge Station D1 was only 0.167 (based on six fish, all of which were collected at temperatures above 33.4 C).

Differences in water velocity at the plant intake and discharge sampling stations likely had a significant effect on survival. O'Connor and Schaffer

TABLE A-1 INITIAL AND 96-HOUR SURVIVAL PROPORTIONS OF STRIPED BASS ICHTHYOPLANKTON COLLECTED USING NETS DURING THE ENTRAINMENT SURVIVAL STUDY, INDIAN POINT GENERATING STATION, 1978

Life Stage	Station[a]	Temperature (C)	No. of Organisms	Proportion Surviving	
				Initial	96-Hour[b]
Eggs	I3	12.1-19.4[c]	78	0.654	0.590
	I2	18.2-22.1[c]	82	0.110	0.098
	D1	19.8-31.3[c]	76	0.013	0.013
		<30.0	70	0.014	0.014
		30.0-32.9	6	0.000	--
		>32.9	0	--	--
Yolk-sac larvae	I3	15.5-19.4[c]	14	0.071	0.000
	I2	18.2-23.2[c]	76	0.171	0.000
	D1	19.8-33.2[c]	294	0.000	--
		<30.0	121	0.000	--
		30.0-32.9	162	0.000	--
		>32.9	11	0.000	--
Post yolk-sac larvae[d]	I2	20.5-25.9[c]	217	0.548	0.198
	D1	22.9-39.2[c]	1,106	0.042	0.017
		<30.0	75	0.133	0.000
		30.0-32.9	783	0.037	0.017
		>32.9	248	0.065	0.024
Juveniles[d]	I2	22.2-27.2[c]	27	1.000	0.741
	D1	33.5-34.7[c]	6	0.167	0.167

(a) During the period when striped bass were collected, sampling was conducted at intake Station I3 from 4 May to 1 June and at intake Station I2 and discharge Station D1 from 1 June to 24 July.
(b) Eggs that hatched during latent survival observations were classified as live through 96 hours.
(c) Entire range of temperatures at which the life stage was collected.
(d) Not collected at Intake Station I3 during Unit 3 operation.

Note: Dashes (--) indicate data not available.

TABLE A-2 INITIAL SURVIVAL PROPORTIONS OF STRIPED BASS EGGS COLLECTED USING NETS AT PLANT SAMPLING STATIONS[a]

Sampling Date	Station	No. of Organisms	Initial Proportion Surviving
All May Sampling Dates	I3	55	0.764
1 June	I3	23	0.391
	I2	79	0.114
	D1	70	0.014

(a) No live eggs were collected at Stations I2 and D1 after the 1 June sampling effort.

77) demonstrated that survival of striped bass eggs, yolk-sac larvae, and t yolk-sac larvae collected in plankton nets were velocity-dependent. As shown in Table A-3, sharp reductions in survival were observed for yolk-sac larvae and post yolk-sac larvae as velocities increased from 0.15 to 0.46 meters per second; no survival of eggs or post yolk-sac larvae was reported at velocities of 0.91 meters per second (yolk-sac larvae were not tested at that velocity).

On the basis of O'Connor and Schaffer's findings, it is likely that the high velocities observed at Discharge Station D1 during the present study contributed to the low survival of striped bass early life stages at this station. During the period of striped bass entrainment, average velocities at Station D1, which ranged from 0.740 to 1.169 meters per second (Table A-4), generally approached or exceeded 0.91 meters per second, the test velocity at which O'Connor and Schaffer observed complete mortality. In contrast, the average velocities at the intake station were much lower, ranging from 0.162 to 0.412 meters per second at Station I2 and from 0.079 to 0.100 meters per second at Station I3. Consequently, the low survival observed at Station D1 (and in some cases I2) may have resulted from stresses associated with the velocity of water passing through the sampling nets. This is supported by the fact that most of the live striped bass post yolk-sac larvae collected at Station D1 (35 of the 46 live post yolk-sac larvae collected at this station) occurred during the 22 June sampling effort, when the average collection velocity (0.773 meters per second) was lower than on most other sampling dates, as shown in Table A-5.

A.3.1.2 Latent Survival

The proportions of striped bass ichthyoplankton surviving at the 96-hour latent observation period are presented in Table A-6. Survival proportions of striped bass eggs at 96 hours were similar to initial survival proportions at all stations. Most of the live eggs collected at each of the three stations hatched. On the other hand, none of the yolk-sac larvae collected at Intake Station I2 or I3 were alive at the 96-hour observation, whereas the 96-hour survival proportion for post yolk-sac larvae at Station I2 was higher (0.198) than at Station D1 (0.017). The only post yolk-sac larvae collected at Station D1 that were alive at the 96-hour observation were fish collected during the 22 June sampling effort, when the average collection velocity was lower than for most other sampling dates. For juvenile striped bass collected at Stations I2 and D1, the 96-hour survival proportions were comparable to initial survival proportions.

Normalized latent survival of striped bass ichthyoplankton collected at Intake Station I2 and Discharge Station D1 were compared to determine if station-to-station differences in survival were observed beyond the initial observation. However, only post yolk-sac larvae were collected in sufficient numbers for comparison. For this life stage, greatest latent mortality was observed prior to the 24-hour observation. The trends in normalized survival proportion through the 96-hour observation period were similar at both intake and discharge stations (Table A-6).

TABLE A-3 PERCENT INITIAL SURVIVAL OF STRIPED BASS EGGS, YOLK-SAC LARVAE, AND POST YOLK-SAC LARVAE COLLECTED IN PLANKTON NETS (571-μm-mesh) AT THREE SAMPLING VELOCITIES (MODIFIED FROM O'CONNOR AND SCHAFFER 1977)[a]

	Percent Initial Survival		
	Velocity		
Life Stage	0.15 m/sec (0.5 fps)	0.46 m/sec (1.5 fps)	0.91 m/sec (3.0 fps)
Eggs	79.58	79.50	0.00
Yolk-sac larvae	52.70	6.94	No Data

TABLE A-4 MEAN WATER VELOCITIES AT THE THREE PLANT SAMPLING STATIONS DURING STRIPED BASS ICHTHYOPLANKTON SURVIVAL COLLECTIONS, INDIAN POINT GENERATING STATION, 1978

Sampling Date	Mean Velocity (meters/second)[a]		
	Station I3	Station I2	Station D1
11 MAY	0.079	--	--
18 MAY	0.100	--	--
25 MAY	0.090	--	--
1 JUN	0.082	0.405	1.169
8 JUN	--	0.164	0.740
15 JUN	--	0.273	0.922
22 JUN	--	0.162	0.773
29 JUN	--	0.324	0.836
5 JUL	--	0.302	1.060
13 JUL	--	0.217	0.858
17 JUL	--	0.346	0.822
24 JUL	--	0.412	0.892

(a) The velocity for each sample was calculated as follows:

$$\text{Velocity (m/sec)} = \frac{\text{total volume sampled } (m^3)}{\text{area of net opening } (m^2) \times \text{sampling duration (seconds)}}$$

The mean velocities presented were determined by averaging the velocities for all depths and collection periods at each station on each sampling date. Sampling duration was 5 minutes (300 seconds) per sample.

Note: Dashes (--) indicate sampling not conducted because of unit outages.

TABLE A-5 AVERAGE WATER VELOCITIES AND INITIAL SURVIVAL OF STRIPED BASS POST YOLK-SAC LARVAE COLLECTED AT STATION D1

Sampling[a] Date	Initial Survival			Average Water Velocity (m/sec)
	Live	Stunned	Dead	
8 JUN	0	1	165	0.740
15 JUN	1	8	501	0.922
22 JUN	20	15	353	0.773
29 JUN	0	0	33	0.836
5 JUL	0	0	1	1.060
13 JUL	0	1	3	0.858
17 JUL	0	0	2	0.822
24 JUL	0	0	2	0.892

(a) Includes all sampling dates when post yolk-sac larvae were collected at Station D1.

TABLE A-6 NORMALIZED LATENT SURVIVAL OF STRIPED BASS ICHTHYOPLANKTON COLLECTED DURING THE ENTRAINMENT SURVIVAL STUDY, INDIAN POINT GENERATING STATION, 1978

Life Stage	Station	No. Alive Initially	Normalized Initial Survival Proportion	Proportion Surviving: Time After Collection (hr) 24	48	72	96
Eggs[a]	I3	51	1.000	0.980	0.902	0.902	0.902
	I2	9	1.000	0.889	0.889	0.889	0.889
	D1	1	1.000	1.000	1.000	1.000	1.000
Yolk-sac larvae	I3	1	1.000	1.000	1.000	1.000	0.000
	I2	13	1.000	0.615	0.385	0.077	0.000
	D1	0	--	--	--	--	--
Post yolk-sac larvae[b]	I2	119	1.000	0.479	0.454	0.403	0.361
	D1	46	1.000	0.543	0.543	0.457	0.413
Juveniles[b]	I2	27	1.000	0.852	0.852	0.778	0.741
	D1	1	1.000	1.000	1.000	1.000	1.000

(a) Eggs that hatched during latent survival observations were classified as live through 96 hours.

(b) Post yolk-sac larvae and juveniles were not collected at Station I3 during Unit 3 operation.

Note: Dashes (--) indicate no fish available for latent survival determinations.

A.3.1.3 Initial Survival of Striped Bass Early Developmental Stages Collected at the Indian Point Generating Station: Plankton Nets versus Pump/Larval Table Collection Systems

In addition to the previously described survival study (Sections A.3.1.1 and A.3.1.2), the survival of striped bass early life stages was examined at the same plant stations (i.e., Stations I2, I3, and D1) from May through July using pump/larval table collection systems (EA 1979). These systems collected samples by pumping water from the intake or discharge station into a flume (larval table) that served to reduce the velocity of water and to concentrate the organisms collected.

The initial survival of striped bass eggs collected in plankton nets was higher than in the pump/larval table collection systems (Table A-7). Initial survival proportions determined from plankton net collections ranged from 0.654 at Station I3 to 0.013 at Station D1, whereas no live striped bass eggs were collected at intake or discharge stations using the pump/larval table collection systems.

The initial survival of striped bass yolk-sac larvae was consistently higher in the pump/larval table collection system than in the nets (Table A-7). The highest initial survival for this life stage in both collection gear occurred at Station I2, where the survival proportions were 0.375 for the pump/larval table collection system versus 0.171 for the nets. Lowest initial survival for both collection gear was observed at Station D1; the survival proportion for yolk-sac larvae at this station was 0.182 for the pump/larval table collection system, whereas no live yolk-sac larvae were collected with the nets.

The initial survival of striped bass post yolk-sac larvae collected at intake stations was comparable for the two collection gear, but higher survival occurred at Discharge Station D-1 using the pump/larval table collection system (Table A-7). Initial survival proportions observed with the pump/larval table collection system at Station I2 and I3 were 0.449 and 0.458, respectively. These survival proportions were similar to survival proportions determined from plankton net collections at Station I2 (0.548); no post yolk-sac larvae were collected with the plankton nets at Station I3 during the period when Unit 3 was operational. The initial survival proportion for post yolk-sac larvae collected at Station D1 using the pump/larval table collection system (0.278) was over 6 times greater than survival determined from net collections (0.042). Moreover, higher survival proportions were encountered at the warmer discharge temperature levels (i.e., from 30.0 to 32.9 C and above 32.9 C) for the pump/larval table collection system than for the nets.

Although relatively few juvenile striped bass were collected at plant stations using either the pump/larval table collection systems or nets, survival proportions determined for the Unit 2 intake station (I2) were high for both gear (Table A-7). At this station, all juveniles collected in plankton nets, versus approximately 85 percent of the juveniles collected using the pump/larval table collection system, were alive at the initial observation. Survival comparisons could not be made at Intake Station I3, since no juvenile striped bass were collected at this station during periods when Unit 3 was operational. At Discharge Station D1, higher initial survival proportions occurred for juveniles collected in the pump/larval table collection

TABLE A-7 INITIAL SURVIVAL PROPORTIONS OF STRIPED BASS ICHTHYOPLANKTON COLLECTED AT THE INDIAN POINT GENERATING STATION: 571 µm MESH PLANKTON NETS VERSUS THE PUMP/LARVAL TABLE COLLECTION SYSTEM[a]

Life Stage	Station	Sampling[b] Dates	Temperature (C)	Plankton Nets		Larval Tables	
				Number Collected	Initial Survival Proportion	Number Collected	Initial Survival Proportion
Eggs	I3	11 MAY - 7 JUN	12.1-19.4[c]	78	0.654	59	0.000
	I2	31 MAY - 8 JUN	18.2-22.1[c]	82	0.110	3	0.000
	D1	1 JUN - 13 JUN	19.8-32.0[c]	76	0.013	1	0.000
			<30.0	70	0.014	0	--
			30.0-32.9	6	0.000	1	0.000
			>32.9	0	--	0	--
Yolk-sac larvae	I3	1 MAY - 7 JUN	11.0-21.0[c]	14	0.071	39	0.256
	I2	30 MAY - 28 JUN	18.2-23.2[c]	76	0.171	24	0.375
	D1	1 JUN - 22 JUN	19.8-33.2[c]	294	0.000	11	0.182
			<30.0	121	0.000	0	--
			30.0-32.9	162	0.000	11	0.182
			>32.9	11	0.000	0	--
Post Yolk-sac larvae[d]	I3	6 JUN - 7 JUN	20.0-21.0[c]	0	--	24	0.458
	I2	6 JUN - 13 JUL	19.7-25.9[c]	217	0.548	399	0.449
	D1	8 JUN - 24 JUL	22.9-39.2[c]	1,106	0.042	237	0.278
			<30.0	75	0.133	0	--
			30.0-32.9	783	0.037	225	0.289
			>32.9	248	0.065	12	0.083
Juveniles[e]	I2	20 JUN - 24 JUL	22.0-27.2[c]	27	1.000	13	0.846
	D1	27 JUN - 13 JUL	30.0-35.0[c]	6	0.167	7	0.429
			<30.0	0	--	0	--
			30.0-32.9	0	--	5	0.400
			>32.9	6	0.167	2	0.500

(a) Pump/larval table collection system survival data from EA (1979).
(b) Includes entire range of sampling dates when the life stage was collected with either sampling gear.
(c) Includes entire range of temperatures at which the life stage was collected with either sampling gear.
(d) No post yolk-sac larvae were collected at Station I3 with plankton nets during sampling conducted from May through 1 June.
(e) No juvenile striped bass were collected at Station I3 using either sampling gear during sampling conducted at this station (from 1 May through 7 June).

Note: Dashes (--) indicate data not available.

system (0.429) than in the nets (0.167), as was previously observed for yolk-sac and post yolk-sac larvae.

Thus, whereas the initial survival proportions for striped bass eggs was higher in the net collections, the initial survival proportions for larvae and juveniles collected in the pump/larval table collection systems were comparable to or greater than proportions determined for the nets. The lower survival consistently observed for yolk-sac larvae, post yolk-sac larvae, and juveniles in net collections at Discharge Station D1 likely reflects increased collection stress associated with the higher collection velocities at this station.

A.3.2 Gammarus spp.

A.3.2.1 Initial Survival

Initial survival of Gammarus spp. was high at Intake Stations I2 and I3, whereas initial survival at Discharge Station D1 varied according to discharge temperature (Table A-8). Comparable survival proportions were observed at the two intake stations, ranging from 0.910 at Station I3 to 0.967 at Station I2. Initial survival proportions at Station D1 showed a trend of decreasing survival as discharge temperatures increased. At discharge temperatures less than 33 C, initial survival at Station D1 ranged from 0.899 to 0.992, which was comparable to the survival observed at the intake stations. During sampling efforts when discharge temperatures ranged from approximately 33 to 35 C, initial survival proportions at Station D1 were typically lower than those observed at temperatures less than 33 C, but variable, ranging from 0.475 to 0.927. The lowest initial survival proportions (0.125 on 24 July and 0.223 on 7 August) were observed at the two highest discharge temperatures (35.7 and 38.7 C, respectively).

A.3.2.2 Latent Survival

The normalized latent survival of Gammarus spp. at the three plant sampling stations was comparable through 48 hours, after which normalized survival at Station I2 was lower than that observed at Stations I3 and D1 (Table A-9). This difference was most pronounced at the 96-hour observation, when the survival proportion at Station I2 was 0.485 as compared to 0.738 and 0.726 at Stations I3 and D1, respectively.

As indicated in Table A-10, Gammarus spp. exhibited unexplainably low 72- and 96-hour normalized survival at all stations during the 1 June and 8 June sampling efforts. A comparison of normalized latent survival excluding these two sampling efforts (1 June and 8 June) resulted in comparable trends in latent survival at all three plant sampling stations.

A.3.3 Neomysis americana

A.3.3.1 Initial Survival

Initial survival of Neomysis americana was slightly higher at Station I3 (0.922) than at Station I2 (0.768); at Discharge Station D1 initial survival was variable but was typically lowest during sampling dates when warmest discharge temperatures occurred (Table A-11). At discharge temperatures below

TABLE A-8 INITIAL SURVIVAL PROPORTIONS OF GAMMARUS SPP. COLLECTED DURING THE ENTRAINMENT SURVIVAL STUDY, INDIAN POINT GENERATING STATION, 1978

Station	Sampling Date	Temp. (C)	No. of Organisms Collected	Proportion Surviving at Initial Observation
I3	16 MAR - 1 JUN 11 SEP - 6 NOV	1.6-19.3[a]	557	0.910
I2	1 JUN - 11 DEC	6.8-27.8[a]	1,683	0.967
D1	1 JUN	27.8	6,450	0.951
	8 JUN	30.6	1,805	0.957
	15 JUN	30.6	1,222	0.975
	22 JUN	32.2	409	0.954
	29 JUN	33.7	2,160	0.927
	5 JUL	32.3	750	0.919
	13 JUL	34.7	530	0.817
	17 JUL	33.5	214	0.673
	24 JUL	35.7	639	0.125
	7 AUG	38.7	515	0.223
	11 SEP	34.5	59	0.475
	10 OCT	28.8	86	0.977
	6 NOV	29.0	626	0.899
	11 DEC	15.5	374	0.992

(a) Entire range of temperatures at which organisms were collected.

TABLE A-9 NORMALIZED LATENT SURVIVAL OF GAMMARUS SPP. COLLECTED DURING THE ENTRAINMENT SURVIVAL STUDY, INDIAN POINT GENERATING STATION, 1978

Station	Sampling Date	Temperature (C)	Number of Organisms Used for Latent Survival Observations	Normalized Initial Survival Proportion	Proportion Surviving Time After Collection (hr) 24	48	72	96
I3	16 MAR - 1 JUN 11 SEP - 6 NOV	1.6-19.3[a]	244	1.000	1.000	0.869	0.791	0.738
I2	1 JUN - 11 DEC	6.8-27.8[a]	293	1.000	0.962	0.816	0.625	0.485
D1	1 JUN - 11 DEC	15.5-38.7[a]	1,099	1.000	0.938	0.862	0.769	0.726
	1 JUN	27.8	147	1.000	1.000	0.592	0.408	0.231
	8 JUN	30.6	70	1.000	0.800	0.800	0.486	0.314
	15 JUN	30.6	117	1.000	0.940	0.889	0.803	0.786
	22 JUN	32.2	85	1.000	0.800	0.776	0.682	0.659
	29 JUN	33.7	93	1.000	0.968	0.935	0.860	0.817
	5 JUL	32.3	75	1.000	0.973	0.933	0.920	0.920
	13 JUL	34.7	80	1.000	0.975	0.950	0.950	0.938
	17 JUL	33.5	60	1.000	1.000	1.000	0.633	0.633
	24 JUL	35.7	55	1.000	0.927	0.927	0.927	0.927
	7 AUG	38.7	86	1.000	0.884	0.872	0.872	0.872
	11 SEP	34.5	28	1.000	0.821	0.679	0.607	0.607
	10 OCT	28.8	19	1.000	1.000	1.000	1.000	1.000
	6 NOV	29.0	117	1.000	0.974	0.949	0.923	0.923
	11 DEC	15.5	67	1.000	0.985	0.985	0.985	0.985

(a) Entire range of temperatures at which organisms were collected.

TABLE A-10 NORMALIZED LATENT SURVIVAL OF *GAMMARUS* SPP. COLLECTED DURING THE 1 JUNE AND 8 JUNE SAMPLING EFFORTS, AND ALL OTHER DATES COMBINED

Sampling Date	Station	No. of Organisms used for Latent Survival	Proportion Surviving Time After Collections (Hours) 24	48	72	96
1 JUN	I2	90	1.000	0.611	0.267	0.222
	I3	98	1.000	0.684	0.500	0.388
	D1	147	1.000	0.592	0.408	0.231
8 JUN	I2	49	0.816	0.816	0.408	0.184
	D1	70	0.800	0.800	0.486	0.314
All others combined	I2	154	0.987	0.935	0.903	0.734
	I3	146	1.000	0.993	0.986	0.973
	D1	882	0.933	0.912	0.851	0.841

TABLE A-11 INITIAL SURVIVAL PROPORTIONS OF NEOMYSIS AMERICANA COLLECTED DURING THE ENTRAINMENT SURVIVAL STUDY, INDIAN POINT GENERATING STATION, 1978

Station	Sampling Date	Temp. (C)	No. of Organisms Collected	Proportion Surviving at Initial Observation
I3	16 MAR - 1 JUN 11 SEP - 6 NOV	15.0-19.2[a]	498	0.922
I2	1 JUN - 11 DEC	6.8-27.8[a]	7,086	0.768
D1	1 JUN	27.8	0	--
	8 JUN	30.6	0	--
	15 JUN	30.6	0	--
	22 JUN	32.2	0	--
	29 JUN	33.7	11	0.818
	5 JUL	32.3	714	0.352
	13 JUL	34.7	1,940	0.189
	17 JUL	33.5	8,604	0.015
	24 JUL	35.7	4,763	0.015
	7 AUG	38.7	9,473	0.009
	11 SEP	34.5	1,539	0.002
	10 OCT	28.8	1,588	0.807
	6 NOV	29.0	264	0.451
	11 DEC	15.5	148	0.845

(a) Entire range of temperatures at which organisms were collected.

Note: Dashes (--) indicate data not available.

C, initial survival proportions at this station ranged from 0.352 to 045. However, with the exception of organisms collected on 29 June, initial survival proportions for organisms collected at temperatures above 33 C were lower (ranging from 0.002 to 0.189). In the single exception to this trend, encountered in the 29 June sampling effort, a high proportion of N. americana survived initially at discharge temperatures above 33 C (0.818); however, this unusually high survival proportion was based on relatively few organisms (11).

A.3.3.2 Latent Survival

The normalized latent survival of Neomysis americana collected at Intake Station I2 was consistently lower than at Intake Station I3 for all latent effects observation periods, as determined on the basis of all sampling efforts at each station (Table A-12). However, normalized latent survival proportions were comparable for the Unit 2 intake and discharge stations (Stations I2 and D1) (Table A-12). For all sampling dates combined, the normalized survival proportion at the 24-hour observation period was 0.907 for Station I2, versus 0.926 at Station D1. Survival remained similar through subsequent observation periods, culminating in normalized 96-hour survival proportions of 0.636 and 0.609 for all N. americana collected at Stations I2 and D1, respectively. No consistent latent effect related to discharge temperature was observed for N. americana collected at Discharge Station D1, although normalized latent survival at this station varied with sampling date (Table A-12).

.4 Monoculodes edwardsi

A.3.4.1 Initial Survival

Comparison of the initial survival of Monoculodes edwardsi between the Unit 2 and Unit 3 intake stations was limited by the Unit 3 outage, which extended over only a portion of the period of time when M. edwardsi was relatively abundant. As a result, the initial survival proportion at Station I3 (0.476) was determined on the basis of relatively few (42) organisms (Table A-13). However, Unit 2 was online throughout the period when M. edwardsi was abundant, and the initial survival proportion at Station I2 was high (0.973), as determined from a much larger sample, 1,056 organisms.

As similarly reported for other macrozooplankton taxa, initial survival of M. edwardsi at the Unit 2 discharge station (D1) was generally lower at warmer discharge water temperatures (Table A-13). At discharge temperatures below 33 C, survival proportions at Station D1 were high (ranging from 0.961 to 1.000) and comparable to survival at Intake Station I2. At discharge temperatures between 33 and 36 C, initial survival proportions at Station D1 varied from 0.123 to 0.970. The lowest initial survival proportion for M. edwardsi at Station D1 (0.048) occurred at the highest discharge temperature (38.7 C).

A.3.4.2 Latent Survival

e normalized latent survival of Monoculodes edwardsi at the three plant sampling stations was comparable through 48 hours, after which survival at Station D1 was lower than survival at Stations I2 and I3 (Table A-14).

TABLE A-12 NORMALIZED LATENT SURVIVAL OF NEOMYSIS AMERICANA COLLECTED DURING THE ENTRAINMENT SURVIVAL STUDY, INDIAN POINT GENERATING STATION, 1978

Station	Sampling Date	Temperature (C)	Number of Organisms Used for Latent Survival Observations	Normalized Initial Survival Proportion	Proportion Surviving Time After Collection (hr) 24	48	72	96
I3	16 MAR - 1 JUN 11 SEP - 6 NOV	15.0-18.9[a]	56	1.000	1.000	0.964	0.875	0.804
I2	1 JUN - 11 DEC	6.8-27.8[a]	601	1.000	0.907	0.765	0.676	0.636
D1	1 JUN - 11 DEC	15.5-35.7[a]	256	1.000	0.926	0.793	0.711	0.609
	1 JUN	27.8	0	--	--	--	--	--
	8 JUN	30.6	0	--	--	--	--	--
	15 JUN	30.6	0	--	--	--	--	--
	22 JUN	32.2	0	--	--	--	--	--
	29 JUN	33.7	0	--	--	--	--	--
	5 JUL	32.3	21	1.000	0.952	0.857	0.810	0.810
	13 JUL	34.7	0	--	--	--	--	--
	17 JUL	33.5	23	1.000	0.783	0.609	0.609	0.565
	24 JUL	35.7	15	1.000	0.933	0.933	0.933	0.933
	7 AUG	38.7	0	--	--	--	--	--
	11 SEP	34.5	3	1.000	1.000	1.000	1.000	0.667
	10 OCT	28.8	87	1.000	1.000	0.770	0.644	0.460
	6 NOV	29.0	43	1.000	0.791	0.651	0.558	0.488
	11 DEC	15.5	64	1.000	0.953	0.922	0.844	0.766

(a) Entire range of temperatures at which organisms were collected.

Note: Dashes (--) indicate data not available.

TABLE A-13 INITIAL SURVIVAL PROPORTIONS OF MONOCULODES EDWARDSI COLLECTED DURING THE ENTRAINMENT SURVIVAL STUDY, INDIAN POINT GENERATING STATION, 1978

Station	Sampling Date	Temp. (C)	No. of Organisms Collected	Proportion Surviving at Initial Observation
I3	16 MAR - 1 JUN 11 SEP - 6 NOV	1.6-25.8[a]	42	0.476
I2	1 JUN - 11 DEC	6.8-27.8[a]	1,056	0.973
D1	1 JUN	27.5	0	--
	8 JUN	30.6	0	--
	15 JUN	30.6	0	--
	22 JUN	32.2	3	1.000
	29 JUN	33.7	66	0.970
	5 JUL	32.3	207	0.961
	13 JUL	34.7	682	0.877
	17 JUL	33.5	324	0.670
	24 JUL	35.7	228	0.123
	7 AUG	38.7	227	0.048
	11 SEP	34.5	95	0.126
	10 OCT	28.8	230	0.983
	6 NOV	29.0	354	0.969
	11 DEC	15.5	375	0.984

(a) Entire range of temperatures at which organisms were collected.

Note: Dashes (--) indicate data not available.

TABLE A-14 NORMALIZED LATENT SURVIVAL OF MONOCULODES EDWARDSI COLLECTED DURING THE ENTRAINMENT SURVIVAL STUDY, INDIAN POINT GENERATING STATION, 1978

Station	Sampling Date	Temperature (C)	Number of Organisms Used for Latent Survival Observations	Normalized Initial Survival Proportion	Proportion Surviving Time After Collection (hr) 24	48	72	96
I3	16 MAR - 1 JUN 11 SEP - 6 NOV	1.6-15.0[a]	5	1.000	1.000	1.000	1.000	1.000
I2	1 JUN - 11 DEC	6.8-25.9[a]	60	1.000	1.000	1.000	1.000	1.000
D1	1 JUN - 11 DEC	15.5-38.7[a]	62	1.000	0.968	0.935	0.790	0.774
	1 JUN	27.8	0	--	--	--	--	--
	8 JUN	30.6	0	--	--	--	--	--
	15 JUN	30.6	0	--	--	--	--	--
	22 JUN	32.2	0	--	--	--	--	--
	29 JUN	33.7	0	--	--	--	--	--
	5 JUL	32.3	0	--	--	--	--	--
	13 JUL	34.7	1	1.000	1.000	1.000	1.000	1.000
	17 JUL	33.5	21	1.000	0.952	0.952	0.524	0.524
	24 JUL	35.7	3	1.000	1.000	1.000	1.000	0.667
	7 AUG	38.7	2	1.000	0.500	0.500	0.500	0.500
	11 SEP	34.5	12	1.000	1.000	0.917	0.917	0.917
	10 OCT	28.8	1	1.000	1.000	0.000	--	--
	6 NOV	29.0	5	1.000	1.000	1.000	1.000	1.000
	11 DEC	15.5	17	1.000	1.000	1.000	1.000	1.000

(a) Entire range of temperatures at which organisms were collected.

Note: Dashes (--) indicate data not available.

malized latent survival proportions at Stations I2 and I3 were 1.000 for latent observations, although this was based on only 5 organisms at Station I3 (as compared to 60 organisms at Station I2). Latent survival at Station D1 was difficult to assess, because of the low numbers of organisms tested at various discharge temperatures. During the three sampling dates when more than 5 organisms were held for latent survival observations, normalized 96-hour survival proportions were lowest at a discharge temperature of 33.5 C (0.524, based on 21 organisms) and highest at discharge temperatures of 34.5 C (0.917, based on 12 organisms) and 15.5 C (1.000, based on 17 organisms).

A.3.5 Chaoborus punctipennis

A.3.5.1 Initial Survival

Initial survival of Chaoborus punctipennis was comparable at Intake Stations I2 and I3, whereas initial survival at Discharge Station D1, as observed for the other macrozooplankton taxa, varied according to discharge temperature (Table A-15). The initial survival proportion of C. punctipennis at Station I2 was 0.962 (based on 532 organisms); the survival proportion at Station I3 was 0.867, but this was based on only 15 organisms. At discharge temperatures less than 35 C, survival proportions at Station D1 were relatively high, ranging from 0.833 to 1.000, and were comparable to survival at the intake stations. Except for collection efforts conducted after August, when survival proportions may not have been representative because of low numbers organisms (less than 7 per effort), initial survival at Station D1 was est at the warmest discharge temperatures. At 35.7 and 38.7 C, the highest discharge temperatures at which C. punctipennis was collected, the initial survival proportions were 0.355 and 0.357, respectively.

A.3.5.2 Latent Survival

Normalized latent survival for Chaoborus punctipennis was highest at the Unit 3 intake station (Station I3), but was comparable at the Unit 2 intake and discharge stations (Stations I2 and D1, respectively). Normalized survival proportions at Station I3 ranged from 1.000 at 24 hours to 0.818 at 96 hours; however, these proportions were based on only 11 organisms. In contrast, the normalized latent survival proportions at Stations I2 and D1 were 0.981 and 0.933, respectively, at 24 hours, and 0.688 and 0.567, respectively, at 96 hours (as determined from 154 organisms at I2 and 284 organisms at D1). Although 96-hour survival proportions were variable at Station D1 during different sampling efforts, no consistent temperature effect was apparent for the discharge temperature range (27.8 to 38.7 C) at which C. punctipennis were collected (Table A-16).

TABLE A-15 INITIAL SURVIVAL PROPORTIONS OF *CHAOBORUS PUNCTIPENNIS* COLLECTED DURING THE ENTRAINMENT SURVIVAL STUDY, INDIAN POINT GENERATING STATION, 1978

Station	Sampling Date	Temp. (C)	No. of Organisms Collected	Proportion Surviving at Initial Observation
I3	16 MAR - 1 JUN 11 SEP - 6 NOV	8.2-19.3[a]	15	0.867
I2	1 JUN - 11 DEC	15.8-27.8[a]	532	0.962
D1	1 JUN	27.8	26	0.923
	8 JUN	30.6	90	1.000
	15 JUN	30.6	122	1.000
	22 JUN	32.2	164	0.994
	29 JUN	33.7	140	0.971
	5 JUL	32.3	86	1.000
	13 JUL	34.7	174	0.931
	17 JUL	33.5	24	0.833
	24 JUL	35.7	110	0.355
	7 AUG	38.7	224	0.357
	11 SEP	34.5	6	0.000
	10 OCT	28.8	3	1.000
	6 NOV	29.0	3	1.000
	11 DEC	15.5	0	--

(a) Entire range of temperatures at which organisms were collected.

Note: Dashes (--) indicate data not available.

TABLE A-16 NORMALIZED LATENT SURVIVAL O[illegible]AOBORUS PUNCTIPENNIS COLLECTED DURING THE ENTRAINMENT SURVIVAL STUDY, INDIAN POINT GENERATING STATION, 1978

Station	Sampling Date	Temperature (C)	Number of Organisms Used for Latent Survival Observations	Normalized Initial Survival Proportion	Proportion Surviving Time After Collection (hr) 24	48	72	96
I3	16 MAR - 1 JUN 11 SEP - 6 NOV	8.2-19.3[a]	11	1.000	1.000	0.909	0.818	0.818
I2	1 JUN - 11 DEC	15.0-27.8[a]	154	1.000	0.981	0.916	0.799	0.688
D1	1 JUN - 11 DEC	27.8-38.7[a]	284	1.000	0.933	0.877	0.662	0.567
	1 JUN	27.8	4	1.000	1.000	1.000	1.000	0.500
	8 JUN	30.6	41	1.000	0.976	0.976	0.756	0.463
	15 JUN	30.6	33	1.000	0.970	0.970	0.576	0.394
	22 JUN	32.2	41	1.000	0.756	0.732	0.220	0.195
	29 JUN	33.7	30	1.000	0.900	0.733	0.567	0.567
	5 JUL	32.3	27	1.000	1.000	0.926	0.852	0.852
	13 JUL	34.7	30	1.000	0.967	0.967	0.900	0.900
	17 JUL	33.5	9	1.000	1.000	1.000	0.889	0.889
	24 JUL	35.7	28	1.000	1.000	0.821	0.679	0.464
	7 AUG	38.7	41	1.000	0.927	0.854	0.756	0.756
	11 SEP	34.5	0	--	--	--	--	--
	10 OCT	28.8	0	--	--	--	--	--
	6 NOV	29.0	0	--	--	--	--	--
	11 DEC	15.5	0	--	--	--	--	--

(a) Entire range of temperatures at which organisms were collected.

Note: Dashes (--) indicate data not available.

APPENDIX B

RIVER TRANSECT STUDY
INDIAN POINT GENERATING STATION, 1978

APPENDIX B

B.1 INTRODUCTION

The 1978 river transect study was designed to determine the abundance of striped bass early life stages in the immediate vicinity of the Indian Point Generating Station. Plankton tows were conducted along three transects in the Hudson River, offshore of the plant intakes. The abundance of striped bass collected at these transect stations was compared to the abundance of striped bass collected concurrently at plant intake and discharge stations.

B.2 METHODS

B.2.1 Sampling Procedures

Transect sampling was conducted weekly from May through July at three river stations paralleling the Indian Point plant (Figure B-1). The locations of the midchannel transect (Station RC) and eastchannel transect (Station RD) were consistent with the locations of standard Stations C and D, respectively (see Figure 4-1). The third transect (Station RW) was located along the west shore. At Stations RC and RD sampling was conducted along a depth contour of 15.2 m; the depth at Station RW was approximately 10.7 m.

Ichthyoplankton tows were made simultaneously along the three transects with three sampling vessels (one positioned on each transect). Each vessel was rigged to sample concurrently at the surface, middepth, and bottom with 571 µm mesh (Number 0) plankton nets (0.5-m diameter opening, 3.7-m long). All tows were of 10-minute duration and were made into the prevailing current; at slack tide, tows were made upstream against the net river flow. To maintain comparability with the plant entrainment abundance and survival studies, transect sampling (May through July) was scheduled to correspond with entrainment sampling (Section 4.2.2.1). At start times consistent with entrainment collections, tows were made along each transect once every 2 hours, over a 12-hour period, with the fourth collection period occurring approximately at dusk. Thus, each weekly transect sampling effort comprised 63 samples, or 21 samples per transect (seven at each depth interval).

Each sampling net was equipped with a standard vane General Oceanics digital flowmeter (Model 2030) to determine the volume of water sampled. Individual flowmeters were calibrated at the beginning and end of the sampling season at known velocities generated within a test flume located at Johns Hopkins University. Initial and final test values varied by less than 10 percent for each flowmeter used.

After collection, organisms and detritus were carefully washed from the nets into removable codend collection cups. The sample contents were then poured into sample containers and preserved in 10 percent formalin. Preserved samples were subsequently transported to the laboratory contractor (LMS) where ichthyoplankton in the samples were sorted, identified, and counted. Total lengths of up to 30 striped bass per sample were measured to the nearest 0.1 mm.

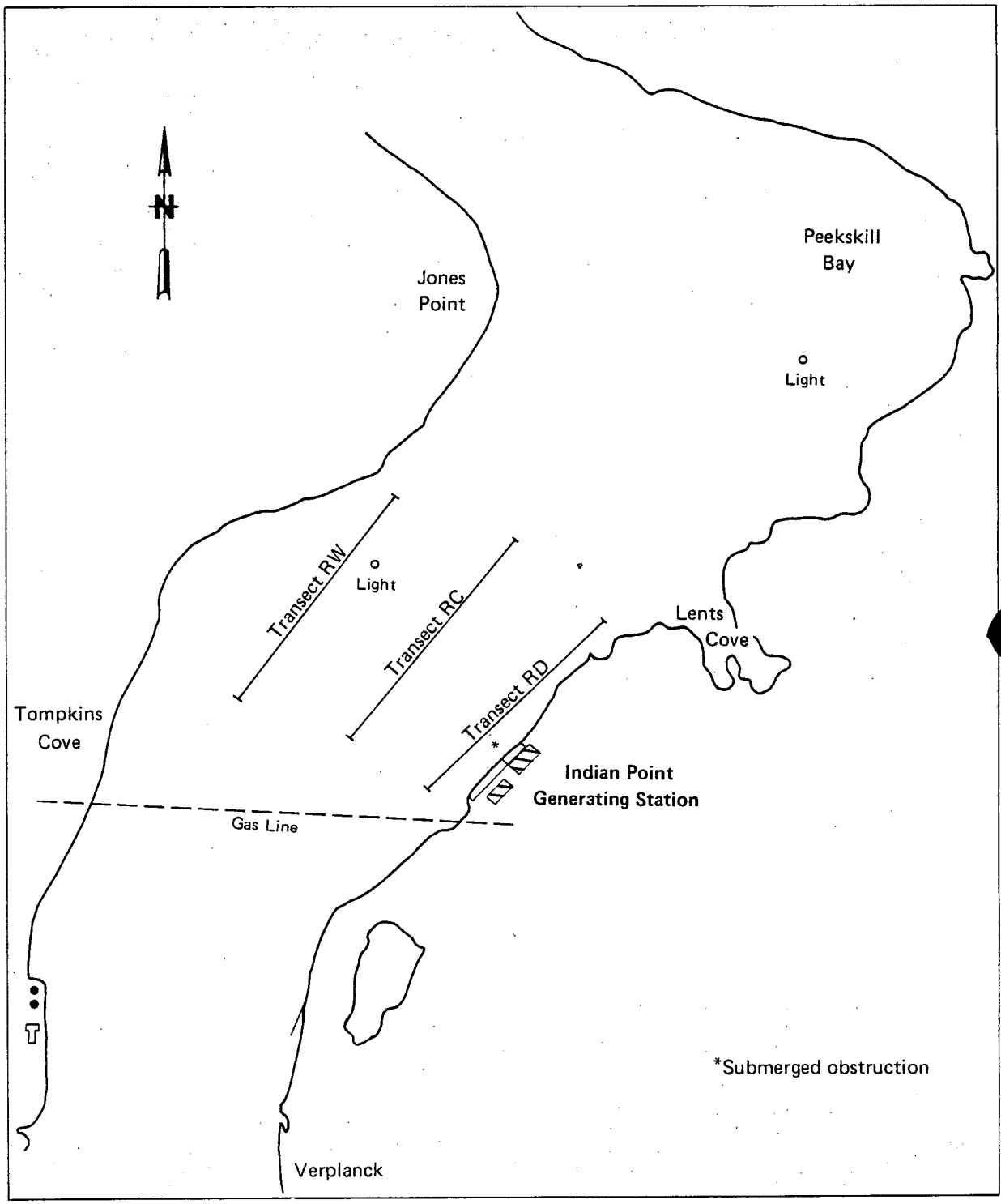

Figure B-1. River transect station locations in the vicinity of the Indian Point Generating Station, 1978.

At the end of each set of transect tows, water quality measurements were recorded at the midchannel transect (Station RC) at each sampling depth. Water temperature, dissolved oxygen, conductivity, and pH were measured with a Martek water quality analyzer. Secchi disk transparencies were measured during the day collections with a standard 20-cm Secchi disk.

B.2.2 Analytical Procedures

Density estimates were determined for early developmental stages of striped bass collected at the river transect stations to compare abundances in the river with abundances of comparable striped bass life stages collected concurrently at plant intake and discharge stations. Consistent with the procedures for estimating entrainment densities (Section 4.2.3.1), densities for striped bass life stages collected in transect samples were calculated as the ratio of the number of organisms collected in each sample to the volume of water sampled (number per 1,000 m^3). To examine seasonal fluctuations, diurnal fluctuations, and differences among the three transect stations, average densities at each station were determined by summing the density values for given depths, sampling dates, and/or collection periods (depending on the analysis), and dividing by the number of samples being averaged. Mean densities for all transect stations combined were calculated from average densities determined for each station, giving equal weight to each station.

Before density estimates were calculated, the volumes of water sampled during all transect collections were examined (based on analyses described in Section 4.1.3) to identify possibly aberrant flowmeter readings. As a result of this evaluation, three transect samples were excluded from the surface group, five samples were excluded from the middepth group, and two samples were excluded from the bottom group.

B.3 RESULTS AND DISCUSSION

B.3.1 Relative Abundance and Distribution of Striped Bass Ichthyoplankton

The relative abundance of striped bass ichthyoplankton collected during the river transect study (Figure B-2) was generally comparable to that observed for striped bass collected at standard stations during the near field river study (see Figure 5-8). Peak occurrence of striped bass eggs, yolk-sac larvae, and post yolk-sac larvae occurred within the same sampling week for both studies. Few striped bass juveniles were collected during either study.

Striped bass eggs were most abundant at the east and middle transect stations (Stations RD and RC), which had mean densities of 15.8 and 16.1 eggs per 1,000 m^3, respectively (averaged over all sampling dates, depths, and collection periods) (Table B-1). The mean density of eggs at Station RW, on the west shore opposite the Indian Point plant, was much lower, averaging only 3.3 per 1,000 m^3. Differences in the abundannce of striped bass eggs among stations were most pronounced for collections taken on 25 May, when the mean densities of eggs at Stations RD and RC were more than 10 times greater than the mean density at Station RW.

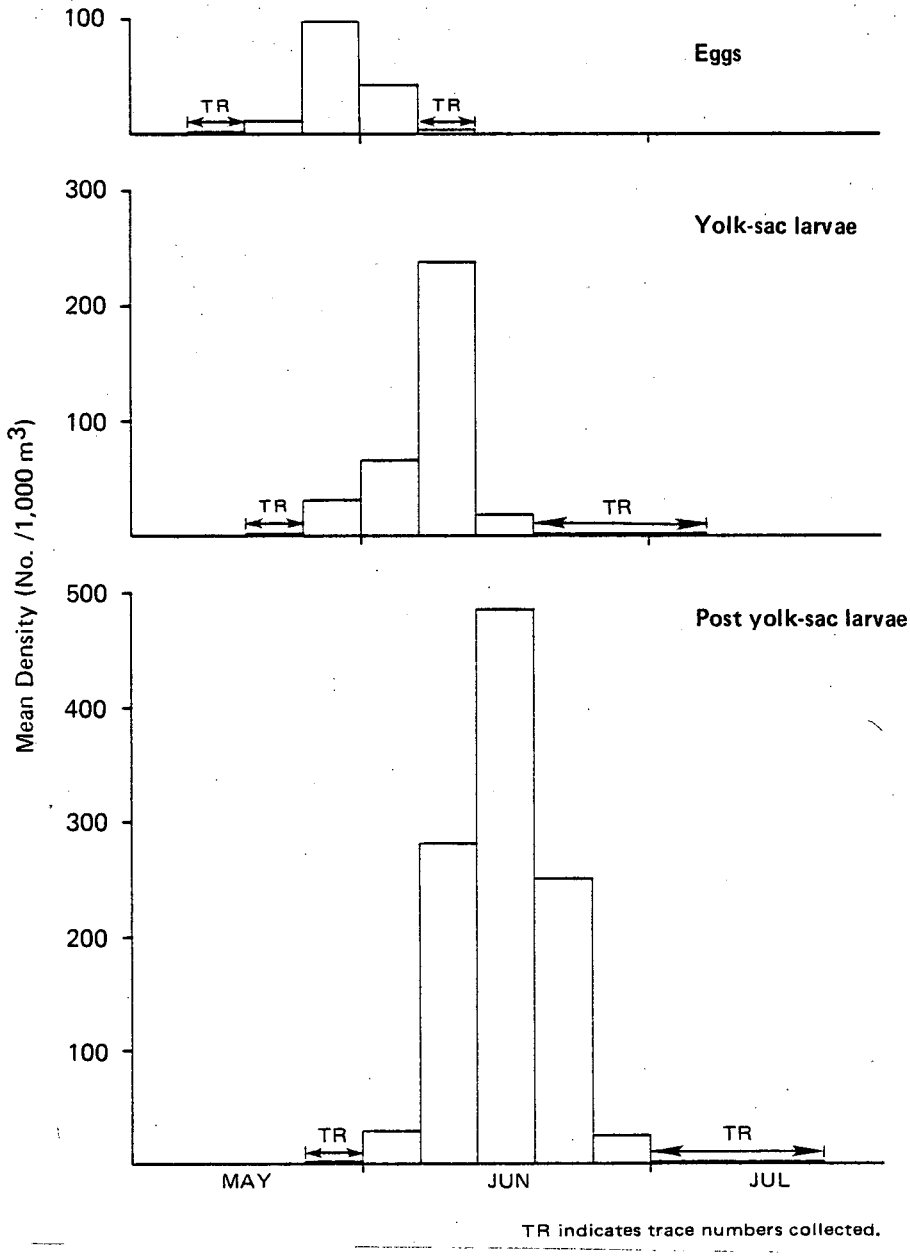

Figure B-2. Mean densities (averaged over all sampling depths, collection periods, and stations) of striped bass early developmental stages collected at the river transect stations, Indian Point Generating Station, 1978.

TABLE B-1 MEAN DENSITIES OF STRIPED BASS EARLY DEVELOPMENTAL STAGES COLLECTED DURING THE RIVER TRANSECT STUDY, INDIAN POINT GENERATING STATION, 1978[a]

Sampling Date	Mean Density (No. per 1,000 m^3)[b]															
	Station RD				Station RC				Station RW				All Stations[c]			
	Eggs	YSL	PYSL	Juv	Eggs	YSL	PYSL	Juv	Eggs	YSL	PYSL	Juv	Eggs	YSL	PYSL	Juv
4 MAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 MAY	0.3	0	0	0	0	0	0	0	0.6	0	0	0	0.3	0	0	0
18 MAY	8.6	2.0	0	0	20.3	2.8	0	0	5.4	1.6	0	0	11.4	2.1	0	0
25 MAY	171.8	41.2	0	0	110.9	35.0	3.2	0	10.4	17.1	0.8	0	97.7	31.1	1.3	0
1 JUN	22.5	29.1	29.1	0	77.3	113.4	34.8	0	26.7	58.2	21.9	0	42.2	66.9	28.6	0
8 JUN	1.7	193.0	311.9	0	0.7	278.8	296.3	0	0.3	244.6	234.3	0	0.9	238.8	280.8	0
15 JUN	0	27.7	433.1	0	0	8.0	531.8	0	0	17.5	494.1	0	0	17.7	486.3	0
22 JUN	0	1.9	386.3	0.6	0	0	172.8	0	0	3.5	192.9	0	0	1.8	250.7	0.2
29 JUN	0	0	17.5	0	0	0	14.7	0	0	0.7	42.5	0	0	0.2	24.9	0
5 JUL	0	0	1.5	0	0	0	3.4	0	0	0.3	3.0	0	0	0.1	2.6	0
13 JUL	0	0	0.7	0.5	0	0	0.8	0	0	0	0.3	0	0	0	0.6	0.2
17 JUL	0	0	0.3	0	0	0	0.2	0	0	0	0.5	0	0	0	1.4	0
24 JUL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean	15.8	22.7	90.8	0.1	16.1	33.7	81.4	0	3.3	26.4	76.2	0	11.7	27.6	82.8	0

(a) See Appendix Tables J.1-1, J.2-1, and J.3-1 for densities of striped bass collected during each collection period and at each sampling depth.

(b) Mean density $(\bar{Y}) = \frac{\sum^{a}\sum^{b} Y}{n}$

where

Y = density at a given sampling depth (a) and collection period (b).
n = number of samples collected during a specific 12 hour sampling effort.

(c) Average for all stations $= \frac{\sum^{c} \bar{Y}}{N}$

where:

$\bar{Y}$ = mean density for each station (c) during a 12-hour sampling effort.
N = number of stations sampled during a given sampling effort.

Note: YSL = yolk-sac larvae; PYSL = post yolk-sac larvae; Juv = juveniles.

Mean densities for yolk-sac larvae and post yolk-sac larvae were generally similar among the three river transect stations (Table B-1). Peak densities of yolk-sac larvae, observed on 8 June, ranged from 193.0 to 278.8 per 1,000 m^3 among the three stations (averaged over all sampling depths and collection periods). Peak densities of post yolk-sac larvae were observed on 15 June when average densities ranged from 433.1 to 531.8 per 1,000 m^3 among the three stations.

Juvenile striped bass were collected in low abundance during the river transect study (Table B-1). This life stage, which typically inhabits shoal and shorezone areas, occurred only at Station RD (the east transect) and was collected only in the 22 June and 13 July sampling efforts.

The length frequency of striped bass ichthyoplankton collected at the three river transect stations (Table B-2) was comparable to length frequency data recorded at the near field standard river stations (see Table 5-19). The majority of the striped bass collected at transect stations (49.7 percent) ranged from 6.0 to 8.9 mm total length. Striped bass ranging from 3.0 to 5.9 mm total length constituted the second most abundant length group, accounting for 34.8 percent of the striped bass collected. Less than 3 per-cent of the striped bass collected at transect stations exceeded a total length of 12.0 mm.

B.3.2 Comparison Between Striped Bass Early Developmental Stages Collected at the River Transect Stations and at the Indian Point Generating Station Intake and Discharge Stations

Comparisons of the abundance of striped bass ichthyoplankton between river transect stations and plant intake and discharge stations were limited as a result of unit outages. During May, the primary period of occurrence for striped bass eggs, only Unit 3 was operating, and plant sampling was conducted only at Intake Station I3. From 8 June through July, when striped bass yolk-sac larvae and post yolk-sac larvae were most abundant, only Unit 2 was operating and plant sampling was restricted to Intake Station I2 and Discharge Station D1. Comparisons between the transect stations and all three plant stations were possible only on the 1 June sampling effort, when both Unit 2 and Unit 3 were operating.

B.3.2.1. Relative Abundance

The abundances of prejuvenile striped bass life stages collected at plant stations and river transect stations are presented comparatively in Table B-3 and Figures B-3 and B-4; juveniles are not represented, since too few were collected for meaningful comparison.

Mean densities of striped bass eggs were consistently higher at the plant intake and discharge stations than at the river transect stations (Table B-3 and Figure B-3). During the 1 June sampling effort (the only sampling effort in the period May through July when all three plant stations were sampled simultaneously), differences in abundances between plant stations and river

TABLE B-2 LENGTH FREQUENCY OF STRIPED BASS COLLECTED DURING THE RIVER TRANSECT STUDY (ALL STATIONS COMBINED), INDIAN POINT GENERATING STATION, 1978

Sampling Date[a]	Number of Fish	Mean Length (mm)	Standard Deviation (mm)	Length Intervals (mm) 0.0 2.9	3.0 5.9	6.0 8.9	9.0 11.9	12.0 14.9	15.0 17.9	18.0 20.9	21.0 23.9	24.0 99.9	Range (mm) Min	Med	Max
18 MAY	18	5.3	0.6	0	13	5	0	0	0	0	0	0	4.5	5.3	6.2
25 MAY	335	4.8	0.7	0	304	31	0	0	0	0	0	0	3.1	4.7	7.1
1 JUN	665	6.1	0.8	0	225	440	0	0	0	0	0	0	3.0	6.3	7.8
8 JUN	1,337	5.9	0.9	0	714	621	2	0	0	0	0	0	3.0	5.9	9.6
15 JUN	1,325	7.7	1.7	0	258	749	307	11	0	0	0	0	3.5	7.8	12.9
22 JUN	855	9.0	2.5	0	78	404	265	88	19	0	1	0	3.4	8.5	21.5
29 JUN	258	7.3	1.7	0	82	133	41	1	1	0	0	0	4.6	7.2	15.6
5 JUL	28	6.9	1.7	0	9	14	5	0	0	0	0	0	4.8	6.5	11.4
13 JUL	8	18.2	15.9	0	0	2	4	0	0	0	0	2	7.0	9.8	48.0
17 JUL	4	9.6	1.8	0	0	2	2	0	0	0	0	0	7.2	9.8	11.7

(a) Includes all sampling dates when striped bass yolk-sac larvae, post yolk-sac larvae, or juveniles were collected.

Note: Min = shortest length; Med = median length; max = greatest length.

TABLE B-3 MEAN DENSITIES OF STRIPED BASS ICHTHYOPLANKTON COLLECTED AT INTAKE STATIONS I2 AND I3, DISCHARGE STATION D1, AND THE RIVER TRANSECT STATIONS, INDIAN POINT GENERATING STATION, 1978

	Mean Density (No. per 1,000 m^3)[a]															
	Eggs				Yolk-Sac Larvae				Post-Yolk-Sac Larvae				Juveniles			
Sampling Date	I3	I2	D1	Transect Stations[b]	I3	I2	D1	Transect Stations[c]	I3	I2	D1	Transect Stations[b]	I3	I2	D1	Transect Stations[b]
4 MAY	0	--	--	0	0	--	--	0	0	--	--	0	0	--	--	0
11 MAY	86.4	--	--	0.3	0	--	--	0	0	--	--	0	0	--	--	0
18 MAY	136.6	--	--	11.4	0	--	--	2.1	0	--	--	0	0	--	--	0
25 MAY	294.4	--	--	97.7	36.5	--	--	31.1	0	--	--	1.3	0	--	--	0
1 JUN	351.9[c]	140.4	60.8	42.2	152.8	73.4	86.4	66.9	0	0	0	28.6	0	0	0	0
8 JUN	--	23.2	8.3	0.9	--	168.3	228.6	238.8	--	93.2	220.3	280.8	--	0	0	0
15 JUN	--	0	0	0	--	2.8	20.9	17.7	--	373.3	466.8	486.3	--	0	0	0
22 JUN	--	0	0	0	--	4.2	10.5	1.8	--	207.6	429.4	250.7	--	3.9	0	0.2
29 JUN	--	0	0	0	--	0	0	0.2	--	43.6	30.8	24.9	--	67.8	1.7	0
5 JUL	--	0	0	0	--	0	0	0.4	--	0.9	1.0	2.6	--	0	0	0
13 JUL	--	0	0	0	--	0	0	0	--	10.8	4.3	0.6	--	9.8	2.0	0.2
17 JUL	--	0	0	0	--	0	0	0	--	0	2.1	1.4	--	0	0	0
24 JUL	--	0	0	0	--	0	0	0	--	0	2.1	0	--	10.7	0	0

(a) Densities at intake and discharge stations were averaged over all sampling depths and collection periods.
(b) Densities at transect stations were averaged over all sampling depths, collection periods, and stations.
(c) Mean densities at Station I3 may have been overestimated for the 1 June sampling effort, since samples with low flowmeter (volume) readings were excluded from analysis.

Note: Dashes (--) indicate sampling not conducted because of unit outages.

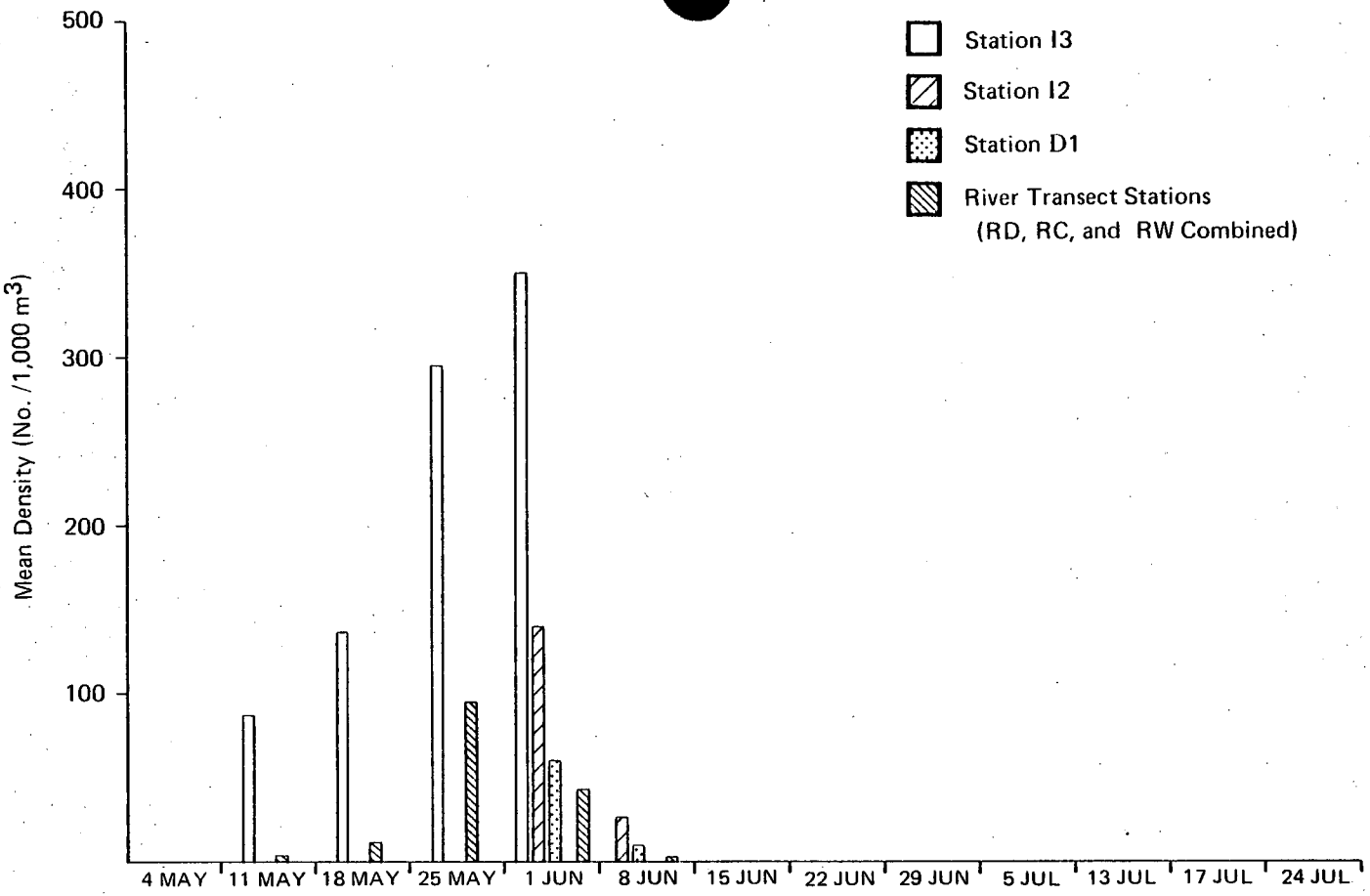

Figure B-3. Comparison of mean densities of striped bass eggs collected at Intake Stations I2 and I3, Discharge Station D1, and the river transect stations, Indian Point Generating Station, 1978.

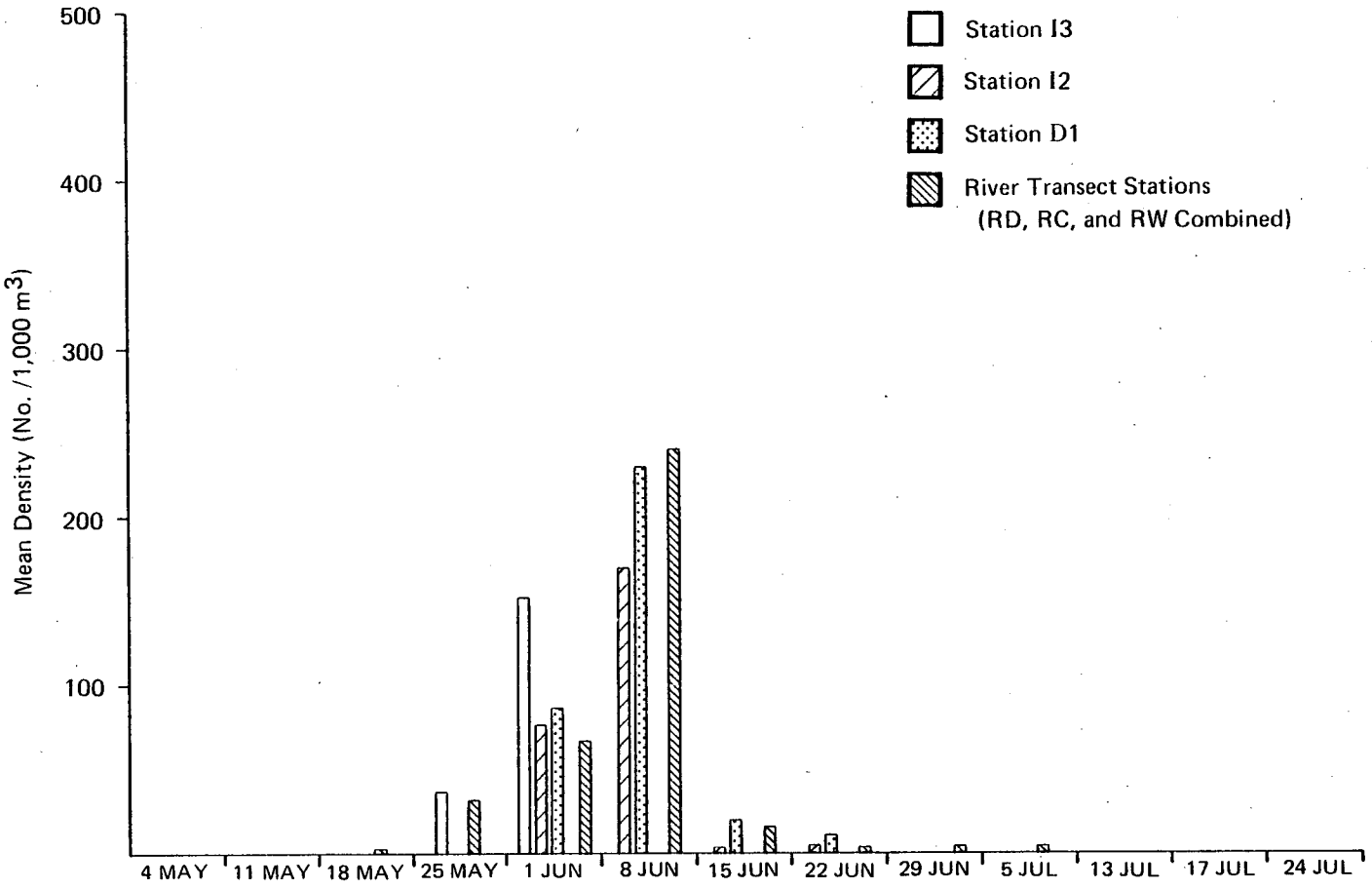

Figure B-4. Comparison of mean densities of striped bass yolk-sac larvae collected at Intake Stations I2 and I3, Discharge Station D1, and the river transect stations, Indian Point Generating Station, 1978.

nsect stations were most pronounced at Intake Station I3*. On this date, an egg densities at Intake Stations I3 and I2 varied from mean densities at the transect stations by factors of approximately 8 and 3, respectively, whereas the mean density at Discharge Station D1 was only slightly higher than the mean density at the transects.

The abundances of striped bass yolk-sac and post yolk-sac larvae at plant and river stations were generally similar in 1978 (Table B-3, Figures B-4 and B-5). Although differences in abundances were observed occasionally between stations on given sampling dates, no consistent trend toward higher or lower abundances was apparent at plant versus river stations or among plant stations.

B.3.2.2 Length Frequency

The length frequency of striped bass ichthyoplankton collected at the three river transect stations was comparable with the length frequency of striped bass collected at nearfield standard river stations; however, the incidence of occurrence of larger young was higher in plant samples than in river transect samples (Table B-4). Similar sizes of striped bass were collected at plant Intake Station I2 and Discharge Station D1, where 38.9 and 37.1 percent of the larvae, respectively, ranged from 9.0 to 11.9 mm total length. In contrast, only 14.0 percent of the larvae collected at the river transect stations were within this size range. Of the striped bass larvae collected at the river transect stations, 52.8 percent were from 6.0 to 8.9 mm total ngth, as compared to 29.0 and 36.3 percent at Stations I2 and I3, respec-vely. In addition, less than 17 percent of the larvae collected at the river transect stations exceeded a total length of 8.9 mm, whereas 59.7 and 53.0 percent collected at the plant Stations I2 and D1, respectively, exceeded this length.

As indicated in Section 5.2.1.1.1, mean densities at Station I3 may have been overestimated for the 1 June sampling effort as a result of the exclusion of samples with low flowmeter (volume) readings.

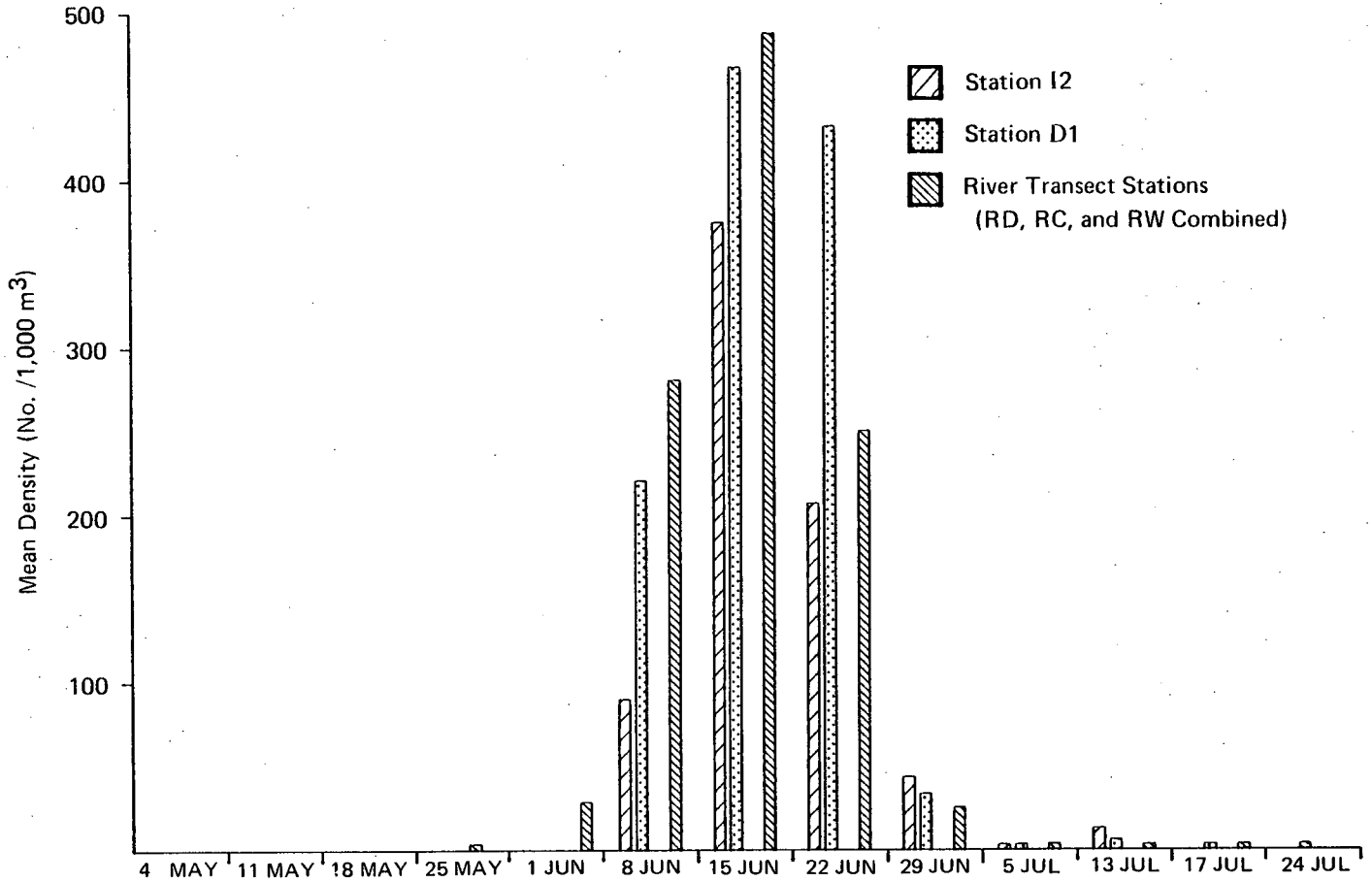

Figure B-5. Comparison of mean densities of striped bass post yolk-sac larvae collected at Intake Station I2, Discharge Station D1, and the river transect stations, Indian Point Generating Station, 1978.

TABLE B-4 LENGTH FREQUENCIES OF STRIPED BASS LARVAE COLLECTED DURING JUNE AND JULY AT PLANT INTAKE STATION I2, DISCHARGE STATION D1, AND THE RIVER TRANSECT STATIONS, INDIAN POINT GENERATING STATION, 1978

Station	Total Number of Fish	Percent Occurrence Length Intervals (mm) 0.0-2.9	3.0-5.9	6.0-8.9	9.0-11.9	12.0-14.9	15.0-17.9	18.0-20.9	21.0-23.9	24.0+
Intake Station I2	243	0.4	11.0	29.0	38.9	9.5	2.1	1.1	2.1	6.0
Discharge Station D1	1,120	0.0	10.7	36.3	37.1	12.9	2.3	0.2	0.1	0.4
River Transect Stations (RC, RD, & RW Combined)	4,480	0.0	30.5	52.8	14.0	2.2	0.4	0.0	<0.1	<0.1

APPENDIX C

WATER QUALITY DATA, 1978 ENTRAINMENT AND NEARFIELD RIVER STUDIES, INDIAN POINT GENERATING STATION

APPENDIX C TABLES

Title	Number
C.1 NEARFIELD RIVER STUDY	
Microzooplankton and Macrozooplankton	
Water Temperature (Day)	C.1-1
Water Temperature (Night)	C.1-2
Salinity (Day)	C.1-3
Salinity (Night)	C.1-4
Dissolved Oxygen (Day)	C.1-5
Dissolved Oxygen (Night)	C.1-6
Conductivity (Day)	C.1-7
Conductivity (Night)	C.1-8
pH (Day)	C.1-9
pH (Night)	C.1-10
Secchi Transparency	C.1-11
Ichthyoplankton	
Water Temperature (Day)	C.1-12
Water Temperature (Night)	C.1-13
Salinity (Day)	C.1-14
Salinity (Night)	C.1-15
Dissolved Oxygen (Day)	C.1-16
Dissolved Oxygen (Night)	C.1-17
Conductivity (Day)	C.1-18
Conductivity (Night)	C.1-19
pH (Day)	C.1-20
pH (Night)	C.1-21
Secchi Transparency	C.1-22
C.2 ENTRAINMENT ABUNDANCE AND SURVIVAL STUDY	
Average Water Temperature	C.2-1
Average Salinity	C.2-2
Average Dissolved Oxygen	C.2-3
Average Conductivity	C.2-4
Average pH	C.2-5
C.3 RIVER TRANSECT STUDY	
Average Water Temperature, Dissolved Oxygen, Conductivity, Salinity, and pH	C.3-1

TABLE C.1-1 WATER TEMPERATURES (C) RECORDED DURING MICROZOOPLANKTON AND MACROZOOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE DAY IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

	STATION							
DATE	A	B	C	D	E	F	G	MEAN
Surface								
5 MAY	11.0	11.0	10.9	10.9	12.0	11.2	11.1	11.2
17 MAY	13.6	13.6	12.9	13.2	12.9	12.8	12.8	13.1
31 MAY	18.2	18.1	20.3	21.0	19.4	19.7	19.0	19.3
14 JUN	20.5	20.9	20.9	20.9	20.2	20.8	20.8	20.7
26 JUN	22.6	22.5	22.6	22.8	23.1	23.5	23.2	22.9
10 JUL	25.3	24.3	25.6	26.8	25.2	25.7	25.9	25.5
25 JUL	26.8	26.4	26.9	26.7	26.8	26.6	26.6	26.7
8 AUG	28.5	28.0	27.9	31.6	28.4	27.8	28.0	28.6
22 AUG	28.0	27.2	28.2	28.2	27.0	27.1	27.3	27.6
5 SEP	27.1	28.0	28.6	28.5	26.8	26.5	26.7	27.5
18 SEP	23.6	23.7	23.6	24.3	23.7	23.7	23.6	23.7
5 OCT	20.3	20.5	20.1	21.2	20.0	20.1	20.0	20.3
17 OCT	18.2	18.2	18.5	18.4	18.0	18.0	18.1	18.2
31 OCT	15.0	14.8	15.3	15.5	16.3	15.0	14.8	15.2
14 NOV	14.3	14.3	14.4	14.3	16.2	14.3	14.0	14.5
28 NOV	8.8	8.6	8.8	8.7	8.4	8.5	8.5	8.6
MEAN	20.1	20.0	20.3	20.8	20.3	20.1	20.0	20.2
Middepth								
5 MAY	--	--	--	--	--	--	--	--
17 MAY	13.0	12.9	12.9	12.9	12.8	12.8	12.8	12.9
31 MAY	18.3	17.9	19.3	18.8	18.6	18.7	18.2	18.5
14 JUN	20.5	20.5	20.5	20.5	20.5	20.7	20.8	20.6
26 JUN	22.6	22.5	22.5	22.8	23.1	23.2	23.2	22.8
10 JUL	24.4	24.2	25.3	24.8	25.5	25.2	26.2	25.1
25 JUL	26.6	26.5	26.8	26.8	26.7	26.6	26.6	26.7
8 AUG	27.5	27.9	27.6	27.6	27.8	27.5	27.5	27.6
22 AUG	28.0	27.2	27.1	27.6	27.0	27.1	27.1	27.3
5 SEP	26.4	26.3	26.5	26.2	26.6	26.6	26.0	26.4
18 SEP	23.7	23.7	23.4	23.6	23.7	23.8	23.5	23.6
5 OCT	20.1	20.0	20.1	20.2	19.9	19.9	19.9	20.0
17 OCT	18.1	18.2	18.4	18.5	17.7	17.8	17.9	18.1
31 OCT	15.1	14.9	15.1	15.1	14.4	14.7	14.6	14.8
14 NOV	14.4	14.3	14.4	14.2	14.0	13.8	13.7	14.1
28 NOV	8.8	--	8.8	8.6	8.3	8.3	8.5	8.6
MEAN	20.5	21.2	20.6	20.6	20.4	20.5	20.4	20.5
Bottom								
5 MAY	10.9	11.0	10.9	10.8	11.5	11.1	11.0	11.0
17 MAY	12.8	12.8	12.8	12.8	12.4	12.8	12.9	12.8
31 MAY	18.8	17.9	18.7	18.5	18.3	18.8	18.1	18.4
14 JUN	20.3	20.3	20.3	20.3	20.2	20.6	20.6	20.4
26 JUN	22.7	22.6	22.3	22.7	23.0	22.8	22.9	22.7
10 JUL	24.1	--	24.6	24.5	24.8	25.6	24.9	24.8
25 JUL	26.6	26.4	26.6	26.8	26.7	26.5	26.6	26.6
8 AUG	27.6	27.3	27.6	27.6	27.5	27.3	27.4	27.5
22 AUG	27.8	27.1	26.9	27.1	26.8	26.7	27.0	27.1
5 SEP	25.9	28.0	26.5	26.2	26.2	26.2	26.1	26.4
18 SEP	23.6	23.6	23.4	23.6	25.2	23.5	23.4	23.8
5 OCT	20.1	20.0	20.0	19.9	19.8	19.7	19.8	19.9
17 OCT	17.9	18.1	17.8	17.8	17.4	17.5	17.7	17.7
31 OCT	15.2	15.0	15.2	15.0	14.5	14.4	14.4	14.8
14 NOV	14.4	14.4	14.3	14.3	13.5	13.6	13.7	14.0
28 NOV	8.8	8.6	8.6	8.3	8.2	8.5	8.4	8.5
MEAN	19.8	19.5	19.8	19.8	19.8	19.7	19.7	19.8

Note: Dashes (--) indicate data not available because of equipment malfunction.

TABLE C.1-2 WATER TEMPERATURES (C) RECORDED DURING MICROZOOPLANKTON AND MACROZOOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE NIGHT IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

	STATION							
DATE	A	B	C	D	E	F	G	MEAN
Surface								
3 MAY	10.7	--	11.0	11.2	11.4	11.5	11.4	11.2
17 MAY	12.7	12.8	12.8	12.8	12.8	12.8	--	12.8
30 MAY	17.9	18.0	18.6	18.9	18.5	19.2	19.8	18.7
14 JUN	--	--	20.3	20.4	21.3	20.5	20.7	20.6
26 JUN	22.6	22.6	22.8	22.8	23.1	23.3	23.3	22.9
10 JUL	23.4	23.4	23.6	23.6	24.0	24.6	--	23.8
25 JUL	25.9	25.7	25.9	26.2	26.3	26.8	26.6	26.2
8 AUG	26.4	26.7	26.7	26.7	27.3	27.6	27.2	26.9
20 AUG	26.4	26.3	27.6	27.6	26.6	27.1	26.7	26.9
6 SEP	27.5	26.8	28.3	27.3	27.7	27.3	27.2	27.4
19 SEP	24.6	22.8	23.0	23.1	23.4	23.3	23.5	23.3
4 OCT	20.0	19.9	19.8	20.0	21.3	19.9	20.6	20.2
18 OCT	17.7	16.9	18.1	18.0	19.0	17.8	18.3	18.0
1 NOV	15.8	15.7	15.2	16.5	15.1	15.6	15.3	15.6
15 NOV	13.7	12.8	14.1	13.8	14.4	14.6	13.9	13.9
29 NOV	8.6	8.6	8.6	8.8	8.8	8.7	8.7	8.7
MEAN	19.6	19.9	19.8	19.9	20.0	20.0	20.2	19.9
Middepth								
3 MAY	--	--	--	--	--	--	--	--
17 MAY	--	--	--	--	--	--	--	--
30 MAY	17.9	17.5	18.2	18.8	18.9	18.9	18.5	18.5
14 JUN	20.3	20.3	20.3	20.4	20.7	20.5	20.7	20.5
26 JUN	22.6	22.6	22.7	22.8	23.1	23.2	23.2	22.9
10 JUL	23.6	23.6	23.6	23.6	23.9	24.1	--	23.7
25 JUL	25.9	25.9	26.2	26.3	26.3	26.8	26.5	26.3
8 AUG	26.8	26.8	26.7	26.8	27.3	27.5	27.3	27.0
20 AUG	26.2	26.2	26.6	27.5	26.6	27.1	26.7	26.7
6 SEP	27.0	26.3	26.6	27.3	26.9	29.6	27.2	27.3
19 SEP	23.4	23.1	--	23.0	23.4	23.1	23.3	23.2
4 OCT	20.0	20.0	19.9	20.0	20.1	19.5	19.9	19.9
18 OCT	17.6	17.3	17.4	17.2	17.5	17.8	18.0	17.5
1 NOV	15.7	15.3	15.1	15.9	15.1	15.6	15.3	15.4
15 NOV	13.7	12.8	13.6	13.2	13.3	14.5	13.9	13.6
29 NOV	8.5	8.6	8.6	8.7	8.5	8.6	8.6	8.6
MEAN	20.7	20.4	20.4	20.8	20.7	21.2	20.7	20.7
Bottom								
3 MAY	10.7	11.1	11.1	--	11.1	11.1	--	11.0
17 MAY	12.7	12.7	12.6	12.7	12.7	12.0	12.9	12.6
30 MAY	17.9	17.5	18.2	18.5	19.9	19.0	18.6	18.8
14 JUN	20.2	20.1	20.3	20.3	20.3	20.4	20.5	20.3
26 JUN	22.4	22.5	22.6	22.7	22.9	22.9	23.1	22.7
10 JUL	23.6	23.7	23.8	23.6	23.9	24.1	--	23.8
25 JUL	25.8	25.9	26.2	26.3	26.3	26.5	26.4	26.2
8 AUG	26.8	26.9	26.8	26.8	27.3	27.4	27.3	27.0
20 AUG	26.7	26.2	26.5	27.0	26.5	26.9	26.7	26.6
6 SEP	26.1	26.9	26.7	27.0	26.7	26.5	27.0	26.7
19 SEP	24.6	22.8	23.0	23.9	23.2	22.7	23.2	23.3
4 OCT	20.0	19.9	19.9	19.9	20.1	19.5	19.8	19.9
18 OCT	17.6	17.3	17.5	17.2	17.4	17.5	17.8	17.5
1 NOV	15.5	15.0	15.0	15.2	15.0	15.5	15.3	15.2
15 NOV	13.5	12.9	13.5	12.7	13.4	14.4	13.7	13.4
29 NOV	8.3	8.4	8.5	8.5	8.4	8.5	8.5	8.4
MEAN	19.5	19.4	19.5	20.1	19.7	19.7	20.1	19.7

Note: Dashes (--) indicate data not available because of equipment malfunction.

TABLE C.1-3 SALINITY (ppt) RECORDED DURING MICROZOOPLANKTON AND MACROZOOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE DAY IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

	STATION							
DATE	A	B	C	D	E	F	G	MEAN
Surface								
5 MAY	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
17 MAY	0.2	0.2	0.3	0.2	0.2	0.4	0.4	0.3
31 MAY	--	--	--	--	--	--	--	--
14 JUN	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
26 JUN	0.2	0.2	0.2	0.3	0.5	0.8	0.6	0.4
10 JUL	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.3
25 JUL	1.8	1.7	2.2	2.1	2.4	2.6	2.5	2.2
8 AUG	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.3
22 AUG	2.5	2.1	2.2	2.1	1.9	2.4	1.9	2.2
5 SEP	4.1	4.2	4.7	4.5	4.3	4.3	4.2	4.3
18 SEP	4.2	4.1	4.6	4.0	4.1	4.3	4.3	4.2
5 OCT	5.3	5.2	5.1	4.9	5.0	5.2	5.1	5.1
17 OCT	3.4	3.2	3.2	3.4	3.6	3.5	3.3	3.4
31 OCT	1.7	1.5	1.9	1.8	2.6	2.4	2.8	2.1
14 NOV	1.6	1.4	2.1	1.5	2.3	2.6	2.6	2.0
28 NOV	5.0	4.8	5.9	5.8	6.2	6.1	6.4	5.7
MEAN	2.1	2.0	2.2	2.1	2.3	2.4	2.3	2.2
Middepth								
5 MAY	--	--	--	--	--	--	--	--
17 MAY	0.2	0.2	0.4	0.7	0.5	1.0	0.5	0.5
31 MAY	--	--	--	--	--	--	--	--
14 JUN	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
26 JUN	0.2	0.2	0.2	0.3	0.6	1.0	0.7	0.5
10 JUL	0.3	0.3	3.4	0.3	0.4	0.4	0.4	0.8
25 JUL	1.9	1.8	2.5	2.2	2.5	2.7	2.6	2.3
8 AUG	0.3	0.3	0.4	0.3	0.3	0.4	0.4	0.3
22 AUG	2.6	2.3	2.1	2.2	2.0	2.5	2.0	2.2
5 SEP	5.2	5.0	5.0	4.7	5.0	4.6	4.9	4.9
18 SEP	4.5	4.7	5.2	4.3	4.2	4.6	4.7	4.6
5 OCT	5.5	5.4	5.1	5.0	5.1	5.5	5.3	5.3
17 OCT	3.6	3.3	3.6	3.7	4.0	3.7	3.5	3.6
31 OCT	1.9	1.6	2.4	2.5	3.1	3.0	3.0	2.5
14 NOV	1.9	1.5	2.1	2.3	2.5	2.9	2.9	2.3
28 NOV	5.5	--	6.0	6.6	6.5	7.4	6.8	6.5
MEAN	2.4	2.1	2.8	2.5	2.6	2.8	2.7	2.6
Bottom								
5 MAY	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
17 MAY	0.3	0.7	1.7	1.1	2.8	0.9	0.8	1.2
31 MAY	--	--	--	--	--	--	--	--
14 JUN	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
26 JUN	0.2	0.2	0.2	0.4	0.6	1.1	0.7	0.5
10 JUL	0.2	--	0.3	0.4	0.4	0.5	0.4	0.4
25 JUL	2.0	1.8	2.4	2.2	2.6	2.8	2.6	2.3
8 AUG	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4
22 AUG	2.6	1.9	2.4	2.2	2.2	2.6	2.1	2.3
5 SEP	4.9	4.8	5.2	4.7	4.3	4.9	4.3	4.7
18 SEP	4.6	4.8	5.1	4.7	4.6	4.9	4.7	4.8
5 OCT	5.4	5.4	5.1	5.1	5.3	5.8	5.3	5.3
17 OCT	3.8	3.4	3.9	3.9	4.2	4.1	3.7	3.9
31 OCT	2.0	1.6	2.5	2.6	3.1	3.4	3.1	2.6
14 NOV	2.0	1.5	2.3	2.4	2.9	3.0	3.0	2.4
28 NOV	5.6	4.9	6.1	7.5	7.6	8.8	8.1	6.9
MEAN	2.3	2.3	2.5	2.5	2.7	2.9	2.6	2.6

Note: Dashes (--) indicate data not available because of equipment malfunction.

TABLE C.1-4 SALINITY (ppt) RECORDED DURING MICROZOOPLANKTON AND MACROZOOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE NIGHT IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

	STATION							
DATE	A	B	C	D	E	F	G	MEAN
Surface								
3 MAY	0.1	--	0.1	0.1	0.1	0.1	0.1	0.1
17 MAY	0.2	0.1	0.3	0.2	0.3	0.0	--	0.2
30 MAY	--	--	--	--	--	--	--	--
14 JUN	--	--	0.1	0.1	0.1	0.1	0.1	0.1
26 JUN	0.2	0.2	0.3	0.3	0.5	0.8	0.6	0.4
10 JUL	1.6	1.5	1.8	1.7	1.8	2.4	--	1.8
25 JUL	1.5	1.3	1.6	1.7	1.9	2.3	2.1	1.8
8 AUG	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2
20 AUG	0.2	--	0.2	0.2	0.3	0.3	0.3	0.3
6 SEP	4.1	3.8	3.8	3.8	4.5	4.4	4.1	4.1
19 SEP	3.4	2.8	3.1	3.1	3.7	4.5	3.7	3.5
4 OCT	4.8	4.7	4.5	4.8	5.1	6.2	5.4	5.1
18 OCT	2.7	2.0	2.2	2.2	2.3	3.5	2.8	2.5
1 NOV	1.6	1.5	1.4	1.4	1.4	1.7	1.4	1.5
15 NOV	1.0	0.6	0.7	0.6	0.8	1.4	1.0	0.9
29 NOV	5.3	5.2	5.0	4.9	5.0	5.5	5.0	5.1
MEAN	1.9	2.0	1.7	1.7	1.9	2.2	2.1	1.9
Middepth								
3 MAY	--	--	--	--	--	--	--	--
17 MAY	--	--	--	--	--	--	--	--
30 MAY	--	--	--	--	--	--	--	--
14 JUN	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
26 JUN	0.2	0.2	0.3	0.3	0.5	0.8	0.6	0.4
10 JUL	1.8	1.9	1.9	1.7	2.1	2.8	--	2.0
25 JUL	1.5	1.7	1.7	1.9	1.9	2.3	2.1	1.9
8 AUG	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2
20 AUG	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2
6 SEP	4.1	4.3	4.1	3.9	4.3	4.8	4.1	4.2
19 SEP	3.4	3.0	--	3.1	3.7	4.9	4.1	3.7
4 OCT	4.9	4.8	4.6	4.9	5.1	6.5	5.7	5.2
18 OCT	2.8	2.4	2.3	2.2	2.4	3.6	2.9	2.7
1 NOV	1.6	1.5	1.5	1.5	1.4	1.7	1.4	1.5
15 NOV	1.1	0.6	1.0	0.6	0.8	1.4	1.1	0.9
29 NOV	5.3	5.3	5.1	5.1	5.4	5.6	5.1	5.3
MEAN	2.1	2.0	1.9	2.0	2.2	2.7	2.3	2.2
Bottom								
3 MAY	0.1	0.1	0.1	--	0.1	0.1	--	0.1
17 MAY	0.2	0.3	0.4	0.2	0.1	0.2	0.1	0.2
30 MAY	--	--	--	--	--	--	--	--
14 JUN	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1
26 JUN	0.2	0.2	0.3	0.3	0.6	0.9	0.6	0.4
10 JUL	2.0	2.0	2.1	1.7	2.1	2.8	--	2.1
25 JUL	1.5	1.8	1.8	1.9	1.9	2.4	2.1	1.9
8 AUG	0.2	0.3	0.2	0.2	0.3	0.3	0.3	0.3
20 AUG	0.2	0.2	0.2	0.2	0.3	0.4	0.3	0.3
6 SEP	4.5	4.3	4.0	4.1	3.7	5.1	4.1	4.3
19 SEP	3.6	3.8	3.5	3.1	4.3	5.3	4.1	4.0
4 OCT	5.0	5.0	4.6	4.9	5.1	6.6	5.8	5.3
18 OCT	2.9	2.4	2.7	2.3	2.4	3.7	3.0	2.8
1 NOV	1.6	1.6	1.6	1.6	1.4	1.7	1.5	1.6
15 NOV	1.1	0.7	1.1	0.7	1.0	1.4	1.2	1.0
29 NOV	5.3	5.3	5.3	5.3	5.5	5.9	5.2	5.4
MEAN	1.9	1.9	1.9	1.9	1.9	2.5	2.2	2.0

Note: Dashes (--) indicate data not available because of equipment malfunction.

TABLE C.1-5 DISSOLVED OXYGEN (ppm) RECORDED DURING MICROZOOPLANKTON AND MACROZOOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE DAY IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Surface								
5 MAY	11.0	10.1	10.1	10.1	10.2	10.1	10.7	10.3
17 MAY	12.4	12.3	8.6	7.6	7.4	12.5	14.9	10.8
31 MAY	10.0	10.1	10.3	10.2	10.9	11.1	10.1	10.4
14 JUN	7.9	8.0	8.0	8.0	8.2	8.4	8.3	8.1
26 JUN	7.4	7.4	8.3	9.0	7.8	8.5	7.5	8.0
10 JUL	5.8	7.6	5.7	5.6	6.5	6.8	6.8	6.4
25 JUL	6.1	6.7	6.5	6.8	7.1	7.8	7.3	6.9
8 AUG	7.0	6.4	6.5	7.3	7.3	7.2	7.0	7.0
22 AUG	5.9	6.0	5.4	5.4	6.3	6.2	5.3	5.8
5 SEP	6.1	6.1	8.6	5.7	7.0	6.1	6.0	6.5
18 SEP	6.2	6.0	5.9	5.9	5.8	5.7	5.8	5.9
5 OCT	6.3	6.2	6.3	6.4	6.4	6.3	6.4	6.3
17 OCT	6.0	6.3	5.8	6.4	6.4	6.2	6.3	6.2
31 OCT	7.7	9.3	7.8	7.8	8.1	7.9	7.9	8.1
14 NOV	8.8	8.5	8.6	8.5	9.5	8.6	8.7	8.7
28 NOV	9.5	9.2	9.5	9.7	9.7	9.2	9.7	9.5
MEAN	7.8	7.9	7.6	7.5	7.8	8.0	8.0	7.8
Middepth								
5 MAY	--	--	--	--	--	--	--	--
17 MAY	9.0	7.2	8.7	14.3	7.4	9.4	7.2	9.0
31 MAY	10.1	10.1	10.6	10.3	10.4	10.3	9.9	10.2
14 JUN	7.9	7.8	7.8	7.8	8.1	8.4	8.3	8.0
26 JUN	7.4	7.3	8.6	9.8	7.1	11.7	7.3	8.5
10 JUL	--	--	--	--	--	--	--	--
25 JUL	5.3	6.7	5.8	6.8	7.1	7.4	6.9	6.6
8 AUG	6.5	6.2	6.0	6.0	7.0	6.8	6.8	6.5
22 AUG	6.2	5.4	6.2	6.7	7.7	6.4	6.3	6.4
5 SEP	6.3	5.8	6.5	5.8	5.8	5.8	5.7	6.0
18 SEP	6.1	5.9	5.8	5.9	5.8	5.7	5.8	5.9
5 OCT	6.2	6.1	6.3	6.4	6.4	6.3	6.4	6.3
17 OCT	5.8	6.2	5.7	6.4	6.3	6.1	6.2	6.1
31 OCT	7.6	7.7	7.6	7.6	7.5	7.8	7.8	7.7
14 NOV	9.1	8.7	8.7	8.3	8.9	8.4	8.5	8.7
28 NOV	9.9	--	9.5	9.6	9.7	9.3	9.8	9.6
MEAN	7.4	7.0	7.4	8.0	7.5	7.8	7.4	7.5
Bottom								
5 MAY	10.9	10.1	10.1	10.1	10.1	10.2	10.1	10.2
17 MAY	9.7	7.2	7.2	13.0	6.4	9.8	7.4	8.7
31 MAY	10.3	10.0	10.2	10.1	10.2	10.5	10.1	10.2
14 JUN	7.9	8.0	8.0	8.0	8.2	8.5	8.5	8.2
26 JUN	7.6	7.2	7.7	7.6	7.1	11.2	7.3	8.0
10 JUL	--	--	--	--	--	--	--	--
25 JUL	5.3	6.3	5.1	6.4	6.9	6.9	6.7	6.2
8 AUG	6.1	6.0	6.0	5.8	6.5	6.5	6.7	6.2
22 AUG	5.6	4.4	5.8	6.7	5.3	5.9	4.4	5.4
5 SEP	6.3	5.8	6.2	5.9	6.3	5.9	6.7	6.2
18 SEP	6.2	5.9	5.7	5.8	5.7	5.4	5.7	5.8
5 OCT	6.2	6.0	6.2	6.3	6.3	6.2	6.3	6.2
17 OCT	5.8	6.1	5.4	6.3	6.3	5.9	6.1	6.0
31 OCT	7.8	8.0	7.7	7.6	7.6	7.8	7.8	7.8
14 NOV	8.8	9.1	8.8	8.5	8.9	8.7	8.6	8.8
28 NOV	10.2	9.1	9.7	9.9	9.7	9.4	9.8	9.7
MEAN	7.6	7.3	7.3	7.9	7.4	7.9	7.5	7.6

Note: Dashes (--) indicate data not available because of equipment malfunction.

TABLE C.1-6 DISSOLVED OXYGEN (ppm) RECORDED DURING MICROZOOPLANKTON AND MACROZOOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE NIGHT IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

	STATION							
DATE	A	B	C	D	E	F	G	MEAN
Surface								
3 MAY	10.6	--	10.2	10.2	10.3	9.8	10.1	10.2
17 MAY	11.3	9.8	10.8	11.5	9.9	--	10.2	10.6
30 MAY	10.4	11.3	11.1	10.6	10.4	10.9	12.2	11.0
14 JUN	--	--	7.7	7.9	8.0	8.5	7.9	8.0
26 JUN	9.6	7.2	7.5	8.6	7.2	8.3	7.3	8.0
10 JUL	--	--	--	--	--	--	--	--
25 JUL	7.2	7.0	6.9	7.1	6.8	7.3	7.1	7.1
8 AUG	7.4	7.2	7.4	7.3	7.4	7.3	7.8	7.4
20 AUG	5.6	--	--	--	--	--	--	5.6
6 SEP	6.1	5.8	6.1	6.0	6.2	6.5	6.1	6.1
19 SEP	6.1	6.2	6.0	6.0	5.9	5.7	5.8	6.0
4 OCT	6.3	6.4	6.4	6.4	6.1	5.6	6.2	6.2
18 OCT	6.6	6.6	6.5	6.4	6.3	5.9	6.2	6.4
1 NOV	8.6	8.5	8.4	8.2	8.1	7.6	7.9	8.2
15 NOV	9.5	9.4	9.6	9.9	9.8	9.0	11.6	9.8
29 NOV	--	9.6	9.5	9.6	9.6	11.6	9.6	9.9
MEAN	8.1	7.9	8.2	8.3	8.2	8.0	8.3	8.1
Middepth								
3 MAY	--	--	--	--	--	--	--	--
17 MAY	--	--	--	--	--	--	--	--
30 MAY	10.2	11.0	10.6	10.5	10.7	10.8	10.5	10.6
14 JUN	7.8	7.8	7.8	7.9	8.0	8.5	8.0	8.0
26 JUN	8.7	7.2	7.4	9.2	7.3	8.8	7.3	8.0
10 JUL	--	--	--	--	--	--	--	--
25 JUL	7.1	7.2	7.2	7.0	7.0	7.2	7.0	7.1
8 AUG	6.8	6.4	6.5	6.4	6.5	6.4	6.7	6.5
20 AUG	5.5	4.0	--	--	--	--	--	4.8
6 SEP	6.2	5.9	6.1	6.0	5.9	6.3	6.3	6.1
19 SEP	6.3	6.1	6.0	5.9	5.9	5.6	5.7	5.9
4 OCT	6.3	6.4	6.4	6.3	6.3	5.9	6.1	6.2
18 OCT	6.6	6.5	6.5	6.4	6.3	5.9	6.1	6.3
1 NOV	8.6	8.5	8.4	8.2	8.0	7.5	7.8	8.1
15 NOV	9.7	9.5	9.5	9.8	9.5	8.9	9.5	9.5
29 NOV	--	9.6	9.5	9.8	9.5	9.6	9.7	9.6
MEAN	7.5	7.4	7.7	7.8	7.6	7.6	7.6	7.6
Bottom								
3 MAY	10.8	10.2	10.2	--	10.2	9.9	--	10.3
17 MAY	9.4	9.5	13.0	8.6	11.0	--	11.0	10.4
30 MAY	10.0	10.0	10.3	10.3	10.5	10.8	10.5	10.3
14 JUN	8.0	7.9	7.9	8.0	8.2	8.7	7.8	8.1
26 JUN	7.6	7.3	7.5	13.8	7.3	7.6	7.4	8.4
10 JUL	--	--	--	--	--	--	--	--
25 JUL	6.9	6.9	6.9	6.9	6.9	6.2	6.9	6.8
8 AUG	6.8	6.3	6.5	6.2	6.5	6.0	6.6	6.4
20 AUG	5.5	4.5	--	--	--	--	--	5.0
6 SEP	6.1	5.9	5.9	6.3	6.2	6.5	6.3	6.2
19 SEP	6.2	6.1	6.0	5.9	5.7	5.4	--	5.9
4 OCT	6.2	6.3	6.3	6.2	6.2	6.0	6.0	6.2
18 OCT	6.5	6.5	6.4	6.3	6.2	5.3	6.0	6.2
1 NOV	8.6	8.4	8.3	8.1	7.9	7.4	7.6	8.0
15 NOV	9.8	9.6	9.8	9.8	9.7	9.0	9.7	9.6
29 NOV	--	9.9	9.7	9.7	9.8	9.6	9.9	9.8
MEAN	7.7	7.7	8.2	8.2	8.0	7.6	8.0	7.[illegible]

Note: Dashes (--) indicate data not available because of equipment malfunction.

TABLE C.1-7 CONDUCTIVITY (μmho) RECORDED DURING MICROZOOPLANKTON AND MACROZOOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE DAY IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Surface								
5 MAY	111.0	110.0	108.0	108.0	118.0	117.0	117.0	112.7
17 MAY	304.0	221.0	432.0	333.0	356.0	578.0	547.0	395.9
31 MAY	--	--	--	--	--	--	--	--
14 JUN	152.0	155.0	155.0	155.0	151.0	153.0	153.0	153.4
26 JUN	336.0	305.0	406.0	642.0	930.0	1457.0	1210.0	755.1
10 JUL	528.0	500.0	620.0	618.0	712.0	762.0	748.0	641.1
25 JUL	3490.0	3420.0	4350.0	4070.0	4670.0	4910.0	4830.0	4248.6
8 AUG	660.0	610.0	690.0	730.0	650.0	750.0	750.0	691.4
22 AUG	4900.0	4140.0	4350.0	4300.0	3800.0	4700.0	3700.0	4270.0
5 SEP	7800.0	8000.0	9000.0	8600.0	8000.0	8000.0	7850.0	8178.6
18 SEP	7300.0	7300.0	8000.0	7200.0	7300.0	7600.0	7600.0	7471.4
5 OCT	8500.0	8400.0	8200.0	8100.0	8000.0	8300.0	8200.0	8242.9
17 OCT	5420.0	5020.0	5120.0	5440.0	5630.0	5440.0	5260.0	5332.9
31 OCT	2530.0	2240.0	2850.0	2710.0	4050.0	3610.0	4190.0	3168.6
14 NOV	2360.0	2100.0	3150.0	2310.0	3550.0	3820.0	3850.0	3020.0
28 NOV	6140.0	5910.0	7160.0	7080.0	7420.0	7360.0	7690.0	6965.7
MEAN	3368.7	3228.7	3639.4	3493.1	3689.1	3837.1	3779.7	3576.6
Middepth								
5 MAY	--	--	--	--	--	--	--	--
17 MAY	334.0	310.0	636.0	1105.0	779.0	1462.0	743.0	767.0
31 MAY	--	--	--	--	--	--	--	--
14 JUN	151.0	151.0	151.0	151.0	152.0	152.0	152.0	151.4
26 JUN	339.0	303.0	404.0	648.0	1172.0	1818.0	1361.0	863.6
10 JUL	560.0	564.0	6180.0	540.0	718.0	770.0	768.0	1442.9
25 JUL	3810.0	3500.0	4850.0	4250.0	4830.0	5170.0	4990.0	4485.7
8 AUG	670.0	620.0	750.0	720.0	730.0	850.0	800.0	734.3
22 AUG	5100.0	4420.0	4200.0	4300.0	4000.0	4900.0	4000.0	4417.1
5 SEP	9500.0	9200.0	9200.0	8700.0	9200.0	8600.0	9000.0	9057.1
18 SEP	7900.0	8200.0	8900.0	7500.0	7400.0	8100.0	8100.0	8014.3
5 OCT	8800.0	8700.0	8200.0	8000.0	8200.0	8700.0	8400.0	8428.6
17 OCT	5590.0	5230.0	5760.0	5830.0	6230.0	5810.0	5470.0	5702.9
31 OCT	2830.0	2410.0	3600.0	3730.0	4480.0	4350.0	4340.0	3677.1
14 NOV	2780.0	2300.0	3140.0	3330.0	3650.0	4130.0	4190.0	3360.0
28 NOV	6750.0	--	7260.0	7910.0	7710.0	8750.0	8125.0	7750.8
MEAN	3936.7	3531.4	4516.5	4051.0	4232.2	4540.1	4317.1	4160.7
Bottom								
5 MAY	110.0	110.0	108.0	109.0	117.0	130.0	118.0	114.6
17 MAY	479.0	1053.0	2443.0	1674.0	3897.0	1329.0	1188.0	1723.3
31 MAY	--	--	--	--	--	--	--	--
14 JUN	150.0	150.0	150.0	150.0	151.0	152.0	152.0	150.7
26 JUN	325.0	308.0	393.0	667.0	1153.0	2014.0	1347.0	886.7
10 JUL	374.0	--	620.0	690.0	851.0	974.0	862.0	728.5
25 JUL	3920.0	3560.0	4660.0	4320.0	4990.0	5280.0	5050.0	4540.0
8 AUG	690.0	680.0	800.0	780.0	810.0	880.0	840.0	782.9
22 AUG	5200.0	3700.0	4600.0	4400.0	4200.0	5100.0	4100.0	4471.4
5 SEP	9000.0	9200.0	9500.0	8700.0	8000.0	9000.0	8000.0	8771.4
18 SEP	8000.0	8300.0	8800.0	8200.0	8300.0	8500.0	8200.0	8328.6
5 OCT	8700.0	8700.0	8200.0	8100.0	8400.0	9200.0	8400.0	8528.6
17 OCT	5970.0	5300.0	6040.0	6070.0	6440.0	6320.0	5720.0	5980.0
31 OCT	3080.0	2480.0	3770.0	3940.0	4550.0	4990.0	4560.0	3910.0
14 NOV	3000.0	2320.0	3390.0	3570.0	4130.0	4280.0	4240.0	3561.4
28 NOV	6870.0	6000.0	7390.0	8870.0	8900.0	10370.0	9590.0	8284.3
MEAN	3724.5	3704.4	4057.6	4016.0	4325.9	4567.9	4157.8	4079.2

Note: Dashes (--) indicate data not available because of equipment malfunction.

TABLE C.1-8 CONDUCTIVITY (μmho) RECORDED DURING MICROZOOPLANKTON AND MACROZOOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE NIGHT IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Surface								
3 MAY	106.0	--	111.0	108.0	113.0	109.0	112.0	109.8
17 MAY	347.0	169.0	480.0	271.0	485.0	10.0	940.0	386.0
30 MAY	--	--	--	--	--	--	--	--
14 JUN	--	--	145.0	152.0	157.0	224.0	153.0	166.2
26 JUN	373.0	370.0	509.0	610.0	921.0	1535.0	1207.0	789.3
10 JUL	2970.0	2770.0	3360.0	3120.0	3430.0	4420.0	--	3345.0
25 JUL	2930.0	2620.0	3080.0	3290.0	3630.0	4410.0	4020.0	3425.7
8 AUG	440.0	410.0	440.0	440.0	540.0	600.0	540.0	487.1
20 AUG	310.0	--	360.0	445.0	510.0	710.0	600.0	489.2
6 SEP	7800.0	7100.0	7300.0	7300.0	8500.0	8300.0	7750.0	7721.4
19 SEP	6200.0	4900.0	5500.0	5500.0	6500.0	7800.0	6600.0	6142.9
4 OCT	7800.0	7600.0	7200.0	7800.0	8400.0	9800.0	8700.0	8185.7
18 OCT	4220.0	3140.0	3600.0	3540.0	3830.0	5430.0	4510.0	4038.6
1 NOV	2520.0	2330.0	2130.0	2230.0	2120.0	2580.0	2150.0	2294.3
15 NOV	1510.0	940.0	1130.0	1000.0	1240.0	2130.0	1590.0	1362.9
29 NOV	6450.0	6320.0	6060.0	6080.0	6100.0	6710.0	6150.0	6267.1
MEAN	3141.1	3222.4	2760.3	2792.4	3098.4	3651.2	3215.9	3126.0
Middepth								
3 MAY	--	--	--	--	--	--	--	--
17 MAY	--	--	--	--	--	--	--	--
30 MAY	--	--	--	--	--	--	--	--
14 JUN	151.0	149.0	151.0	151.0	154.0	212.0	153.0	160.1
26 JUN	373.0	385.0	542.0	637.0	1005.0	1550.0	1222.0	816.3
10 JUL	3250.0	3530.0	3430.0	3120.0	3790.0	5170.0	--	3715.0
25 JUL	2950.0	3380.0	3380.0	3630.0	3630.0	4480.0	4080.0	3647.1
8 AUG	470.0	490.0	450.0	470.0	560.0	650.0	590.0	525.7
20 AUG	330.0	290.0	370.0	450.0	520.0	720.0	600.0	468.6
6 SEP	7800.0	8000.0	7750.0	7500.0	8100.0	9500.0	7800.0	8064.3
19 SEP	6100.0	5400.0	5750.0	5500.0	6500.0	8500.0	7150.0	6414.3
4 OCT	7900.0	7800.0	7400.0	7900.0	8200.0	10200.0	9000.0	8342.9
18 OCT	4390.0	3810.0	3690.0	3500.0	3790.0	5590.0	4620.0	4198.6
1 NOV	2530.0	2260.0	2270.0	2340.0	2180.0	2590.0	2220.0	2341.4
15 NOV	1700.0	980.0	1540.0	980.0	1230.0	2150.0	1690.0	1467.1
29 NOV	6480.0	6460.0	6280.0	6215.0	6520.0	6830.0	6250.0	6433.6
MEAN	3417.2	3302.6	3307.9	3261.0	3552.2	4472.5	3781.3	3585.0
Bottom								
3 MAY	106.0	110.0	110.0	--	108.0	108.0	--	108.4
17 MAY	319.0	376.0	555.0	275.0	149.0	334.0	180.0	312.6
30 MAY	--	--	--	--	--	--	--	--
14 JUN	150.0	148.0	150.0	150.0	152.0	281.0	152.0	169.0
26 JUN	372.0	398.0	590.0	647.0	1065.0	1609.0	1213.0	842.0
10 JUL	3640.0	3640.0	3820.0	3150.0	3910.0	5080.0	--	3873.3
25 JUL	2956.0	3490.0	3490.0	3640.0	3640.0	4680.0	4090.0	3712.3
8 AUG	490.0	520.0	470.0	490.0	560.0	700.0	590.0	545.7
20 AUG	330.0	290.0	390.0	440.0	540.0	740.0	610.0	477.1
6 SEP	8300.0	8000.0	7450.0	7800.0	6900.0	9300.0	7700.0	7921.4
19 SEP	6500.0	6600.0	6200.0	5500.0	7400.0	9000.0	7200.0	6914.3
4 OCT	8000.0	8000.0	7400.0	7900.0	8200.0	10300.0	9200.0	8428.6
18 OCT	4610.0	3740.0	4240.0	3570.0	3810.0	5750.0	4770.0	4355.7
1 NOV	2550.0	2420.0	2430.0	2530.0	2190.0	2580.0	2270.0	2424.3
15 NOV	1700.0	1090.0	1610.0	990.0	1440.0	2200.0	1810.0	1548.6
29 NOV	6450.0	6420.0	6390.0	6440.0	6640.0	7080.0	6370.0	6541.4
MEAN	3098.2	3016.1	3019.7	3108.7	3113.6	3982.8	3550.4	3269.[illegible]

Note: Dashes (--) indicate data not available because of equipment malfunction.

TABLE C.1-9 pH RECORDED DURING MICROZOOPLANKTON AND MACROZOOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE DAY IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Surface								
5 MAY	8.1	8.0	8.1	8.0	8.1	8.0	8.1	8.1
17 MAY	8.1	8.9	8.0	8.0	8.0	8.0	8.0	8.1
31 MAY	8.0	7.8	7.8	7.8	7.8	7.9	7.7	7.8
14 JUN	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
26 JUN	7.4	7.3	7.6	7.6	7.5	7.7	7.6	7.5
10 JUL	--	--	--	--	--	--	--	--
25 JUL	7.6	7.4	7.5	7.5	--	7.5	7.5	7.5
8 AUG	7.4	7.5	7.5	7.4	7.5	7.5	7.5	7.5
22 AUG	7.6	7.4	7.6	7.6	7.6	7.7	7.4	7.6
5 SEP	--	--	--	--	--	--	--	--
18 SEP	7.6	7.6	7.7	7.6	7.4	6.9	6.9	7.4
5 OCT	--	7.1	7.5	7.1	7.8	7.1	7.1	7.3
17 OCT	8.1	8.0	7.9	8.0	7.9	8.2	7.9	8.0
31 OCT	7.5	7.5	7.6	7.6	7.6	7.6	7.6	7.6
14 NOV	7.5	7.5	7.6	7.6	7.6	7.6	7.6	7.6
28 NOV	7.7	7.6	7.7	7.7	7.7	7.7	7.7	7.7
MEAN	7.7	7.7	7.7	7.6	7.7	7.6	7.6	7.7
Middepth								
5 MAY	--	--	--	--	--	--	--	--
17 MAY	8.0	7.9	7.9	7.9	7.9	7.9	7.9	7.9
31 MAY	8.0	8.0	7.9	7.8	7.8	7.8	7.8	7.9
14 JUN	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
26 JUN	7.2	7.2	7.6	7.6	7.6	7.8	7.6	7.5
10 JUL	--	--	--	--	--	--	--	--
25 JUL	7.5	7.4	7.5	7.5	7.5	7.5	7.5	7.5
8 AUG	7.4	7.5	7.4	7.5	7.5	7.5	7.5	7.5
22 AUG	7.7	7.3	7.7	7.7	7.6	7.7	7.6	7.6
5 SEP	--	--	--	--	--	--	--	--
18 SEP	--	--	--	--	--	--	--	--
5 OCT	--	7.1	7.1	7.1	7.1	7.1	7.1	7.1
17 OCT	7.8	8.0	8.0	8.0	7.9	8.0	8.0	8.0
31 OCT	7.5	7.5	7.6	7.6	7.6	7.6	7.6	7.6
14 NOV	7.6	7.5	7.6	7.6	7.6	7.6	7.6	7.6
28 NOV	7.7	--	7.7	7.7	7.7	7.7	7.7	7.7
MEAN	7.6	7.5	7.6	7.6	7.6	7.6	7.6	7.6
Bottom								
5 MAY	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
17 MAY	7.9	7.9	7.7	7.8	7.6	7.8	7.6	7.8
31 MAY	7.9	7.9	7.9	7.8	7.9	8.0	7.8	7.9
14 JUN	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
26 JUN	7.1	7.1	7.5	7.5	7.6	7.8	7.6	7.5
10 JUL	--	--	--	--	--	--	--	--
25 JUL	7.5	7.4	7.5	7.6	7.6	7.6	7.5	7.5
8 AUG	7.4	7.5	7.4	7.5	7.5	7.5	7.5	7.5
22 AUG	7.7	7.1	8.0	7.8	7.7	7.9	7.8	7.7
5 SEP	--	--	--	--	--	--	--	--
18 SEP	--	--	--	--	--	--	--	--
5 OCT	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
17 OCT	8.1	8.0	8.0	8.0	7.9	7.9	7.9	8.0
31 OCT	7.6	7.5	7.6	7.6	7.6	7.6	7.6	7.6
14 NOV	7.6	7.6	7.6	7.6	7.6	7.7	8.6	7.8
28 NOV	7.7	7.6	7.7	7.6	7.7	7.7	7.7	7.7
MEAN	7.6	7.6	7.7	7.7	7.6	7.7	7.7	7.7

Note: Dashes (--) indicate data not available because of equipment malfunction.

TABLE C.1-10 pH RECORDED DURING MICROZOOPLANKTON AND MACROZOOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE NIGHT IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

	STATION							
DATE	A	B	C	D	E	F	G	MEAN
Surface								
3 MAY	--	--	--	--	--	--	--	--
17 MAY	7.9	8.0	7.9	8.1	7.9	8.1	8.0	8.0
30 MAY	7.9	8.1	8.1	7.9	7.8	7.9	8.1	8.0
14 JUN	--	--	7.5	7.5	7.5	7.5	7.5	7.5
26 JUN	7.4	7.4	7.3	7.5	7.5	7.0	7.5	7.4
10 JUL	7.4	7.5	7.5	7.5	7.5	7.5	--	7.5
25 JUL	7.4	7.4	7.4	7.4	7.4	7.5	7.4	7.4
8 AUG	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
20 AUG	7.2	7.2	7.2	7.1	7.3	7.1	7.1	7.2
6 SEP	--	--	--	--	--	--	--	--
19 SEP	6.8	6.9	7.0	7.1	6.9	7.0	--	7.0
4 OCT	7.1	--	7.6	7.1	7.6	7.1	7.6	7.4
18 OCT	7.9	7.6	7.5	7.8	7.8	8.4	8.2	7.9
1 NOV	7.7	7.9	7.7	7.9	7.9	7.8	7.7	7.8
15 NOV	7.7	7.5	7.5	7.5	7.5	7.5	7.6	7.5
29 NOV	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
MEAN	7.5	7.6	7.5	7.5	7.6	7.5	7.7	7.6
Middepth								
3 MAY	--	--	--	--	--	--	--	--
17 MAY	--	--	--	--	--	--	--	--
30 MAY	7.8	7.9	7.9	7.9	7.9	7.9	7.8	7.[illegible]
14 JUN	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
26 JUN	7.4	7.5	7.4	7.5	7.6	6.8	7.5	7.4
10 JUL	7.4	7.3	7.4	7.4	7.4	7.4	--	7.4
25 JUL	7.4	7.4	7.4	7.4	7.5	7.5	7.4	7.4
8 AUG	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
20 AUG	7.1	7.2	7.1	7.2	7.1	7.1	7.1	7.1
6 SEP	--	--	--	--	--	--	--	--
19 SEP	--	--	--	--	--	--	--	--
4 OCT	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
18 OCT	7.9	7.9	7.8	7.9	8.0	8.0	8.1	7.9
1 NOV	7.3	7.3	7.3	7.3	7.8	7.9	7.7	7.5
15 NOV	7.5	7.4	7.5	7.5	7.5	7.5	7.6	7.5
29 NOV	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
MEAN	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Bottom								
3 MAY	--	--	--	--	--	--	--	--
17 MAY	7.9	7.9	7.9	7.7	7.9	8.0	8.0	7.9
30 MAY	7.1	7.6	7.7	7.8	7.9	7.9	7.8	7.7
14 JUN	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
26 JUN	7.3	7.5	7.4	7.5	7.6	6.6	7.5	7.3
10 JUL	7.3	7.3	7.3	7.4	7.3	7.3	--	7.3
25 JUL	7.5	7.4	7.4	7.5	7.5	7.5	6.8	7.4
8 AUG	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
20 AUG	7.1	7.1	7.2	7.1	7.2	7.1	7.3	7.2
6 SEP	--	--	--	--	--	--	--	--
19 SEP	--	--	--	--	--	--	--	--
4 OCT	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
18 OCT	8.2	8.0	8.0	8.0	8.1	8.3	8.1	8.1
1 NOV	7.3	7.3	7.3	7.3	7.8	7.9	7.7	7.5
15 NOV	7.5	7.5	7.6	7.5	7.5	7.6	7.6	7.5
29 NOV	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
MEAN	7.5	7.5	7.5	7.5	7.6	7.5	7.5	7.5

Note: Dashes (--) indicate data not available because of equipment malfunction.

TABLE C.1-11 SECCHI DISK TRANSPARENCY (meters) RECORDED DURING MICROZOOPLANKTON AND MACROZOOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE DAY IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

Date	Station						
	A	B	C	D	E	F	G
5 MAY	0.5	0.5	0.5	0.5	0.5	0.5	0.5
17 MAY	0.3	--	--	--	0.5	0.5	0.5
31 MAY	0.7	0.7	0.7	0.7	0.7	0.7	0.7
14 JUN	1.0	1.0	1.0	1.0	1.0	1.0	1.0
26 JUN	0.7	0.7	0.5	0.7	0.8	0.8	0.7
10 JUL	1.0	1.1	1.0	0.5	1.0	1.0	1.0
25 JUL	0.8	0.8	0.7	0.7	0.8	0.7	0.7
8 AUG	1.0	1.0	1.0	1.0	1.0	1.0	1.0
22 AUG	0.7	0.8	1.0	0.7	0.5	0.7	0.7
5 SEP	0.4	0.4	0.2	0.2	0.4	0.4	0.4
18 SEP	1.0	1.0	1.0	1.0	1.0	1.0	1.0
5 OCT	0.4	0.4	0.3	0.3	0.3	0.5	0.3
17 OCT	0.3	0.3	0.2	0.2	0.2	0.3	0.2
31 OCT	0.2	0.2	0.2	0.2	0.2	0.2	0.2
14 NOV	0.2	0.2	0.2	0.2	0.2	0.2	0.2
28 NOV	0.2	0.3	0.3	0.2	0.3	0.4	0.3

Note: Dashes (--) indicate data not available.

TABLE C.1-12 WATER TEMPERATURES (C) RECORDED DURING ICHTHYOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE DAY IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

	STATION							
DATE	A	B	C	D	E	F	G	MEAN
				Surface				
21 MAR	1.6	1.6	1.6	1.7	2.1	3.2	2.7	2.1
20 APR	7.7	7.7	7.6	7.7	8.0	8.0	8.4	7.9
5 MAY	11.0	11.0	10.9	10.9	12.0	11.2	11.1	11.2
12 MAY	13.5	13.1	13.7	12.6	13.5	12.8	13.0	13.2
17 MAY	13.6	13.6	12.9	13.2	12.9	12.8	12.8	13.1
24 MAY	15.1	15.2	15.2	15.4	15.6	15.6	15.8	15.4
31 MAY	18.2	18.1	20.3	21.0	19.4	19.7	19.0	19.4
5 JUN	20.1	20.0	20.3	20.8	21.9	20.7	21.0	20.7
14 JUN	20.5	20.9	20.9	20.9	20.2	20.8	20.8	20.7
21 JUN	21.9	22.0	22.3	22.3	23.4	23.3	22.7	22.6
26 JUN	22.6	22.5	22.6	22.8	23.1	23.5	23.2	22.9
6 JUL	--	23.4	23.4	24.9	24.2	23.3	23.2	23.7
10 JUL	25.3	24.3	25.6	26.8	25.2	25.7	25.9	25.5
18 JUL	24.2	24.1	24.3	24.3	25.3	25.6	24.7	24.6
25 JUL	26.8	26.4	26.9	26.7	26.8	26.6	26.6	26.7
22 AUG	28.0	27.2	28.2	28.2	27.0	27.1	27.3	27.6
18 SEP	23.6	23.7	23.6	24.3	23.7	23.7	23.6	23.7
17 OCT	18.2	18.2	18.5	18.4	18.0	18.0	18.1	18.2
14 NOV	14.3	14.3	14.4	14.3	16.2	14.3	14.0	14.5
4 DEC	8.8	8.6	8.5	10.2	8.6	8.4	8.6	8.8
MEAN	17.6	17.8	18.1	18.4	18.4	18.2	18.1	18.1
				Middepth				
21 MAR	--	--	--	--	--	--	--	--
20 APR	--	--	--	--	--	--	--	--
5 MAY	--	--	--	--	--	--	--	--
12 MAY	12.9	12.7	13.2	12.3	12.8	--	12.9	12.8
17 MAY	13.0	12.9	12.9	12.9	12.8	12.8	12.8	12.9
24 MAY	15.1	15.2	15.2	15.4	15.6	15.6	15.7	15.[illegible]
31 MAY	18.3	17.9	19.3	18.8	18.6	18.7	18.2	18.5
5 JUN	19.7	19.9	19.9	20.3	20.2	20.5	20.4	20.1
14 JUN	20.5	20.5	20.5	20.5	20.5	20.7	20.8	20.6
21 JUN	21.8	21.9	22.1	22.1	22.2	22.4	22.2	22.1
26 JUN	22.6	22.5	22.5	22.8	23.1	23.2	23.2	22.8
6 JUL	22.8	23.2	22.9	23.0	22.9	22.7	22.7	22.9
10 JUL	24.4	24.2	25.3	24.8	25.5	25.2	26.2	25.1
18 JUL	24.2	24.2	24.3	24.3	24.3	24.8	24.5	24.4
25 JUL	26.6	26.5	26.8	26.8	26.7	26.6	26.6	26.7
22 AUG	28.0	27.2	27.1	27.6	27.0	27.1	27.1	27.3
18 SEP	23.7	23.7	23.4	23.6	23.7	23.8	23.5	23.6
17 OCT	18.1	18.2	18.4	18.5	17.7	17.8	17.9	18.1
14 NOV	14.4	14.3	14.4	14.2	14.0	13.8	13.7	14.1
4 DEC	8.3	8.5	8.3	9.3	8.3	7.6	8.3	8.4
MEAN	19.7	19.6	19.8	19.8	19.8	20.2	19.8	19.8
				Bottom				
21 MAR	1.6	2.3	1.7	3.6	2.1	2.9	2.5	2.4
20 APR	7.5	7.7	7.6	7.7	7.7	7.1	7.5	7.5
5 MAY	10.9	11.0	10.9	10.8	11.5	11.1	11.0	11.0
12 MAY	12.6	12.4	12.6	12.2	12.3	12.5	12.8	12.5
17 MAY	12.8	12.8	12.8	12.8	12.4	12.8	12.9	12.8
24 MAY	15.1	15.2	15.2	15.4	15.5	15.6	15.7	15.4
31 MAY	18.8	17.9	18.7	18.5	18.3	18.8	18.1	18.4
5 JUN	19.6	19.7	19.7	20.3	20.1	20.5	20.2	20.0
14 JUN	20.3	20.3	20.3	20.3	20.2	20.6	20.6	20.4
21 JUN	21.9	21.9	22.1	22.0	22.1	22.3	22.2	22.1
26 JUN	22.7	22.6	22.3	22.7	23.0	22.8	22.9	22.7
6 JUL	22.8	23.5	22.5	22.8	22.1	22.2	22.2	22.6
10 JUL	24.1	--	24.6	24.5	24.8	25.6	24.9	24.8
18 JUL	24.2	24.3	24.3	24.4	24.4	24.5	24.5	24.4
25 JUL	26.6	26.4	26.6	26.8	26.7	26.5	26.6	26.6
22 AUG	27.8	27.1	26.9	27.1	26.8	26.7	27.0	27.1
18 SEP	23.6	23.6	23.4	23.6	25.2	23.5	23.4	23.8
17 OCT	17.9	18.1	17.8	17.8	17.4	17.5	17.7	17.7
14 NOV	14.4	14.4	14.3	14.3	13.5	13.6	13.7	14.0
4 DEC	8.3	8.4	8.4	8.4	8.2	7.7	8.0	8.2
MEAN	17.7	17.4	17.6	17.8	17.7	17.7	17.7	17.[illegible]

Note: Dashes (--) indicate data not available because of equipment malfunction.

TABLE C.1-13 WATER TEMPERATURES (C) RECORDED DURING ICHTHYOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE NIGHT IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Surface								
29 MAR	--	--	--	--	2.1	1.9	2.4	2.1
18 APR	7.9	8.3	7.8	7.7	8.7	8.6	8.5	8.2
3 MAY	10.7	--	11.0	11.2	11.4	11.5	11.4	11.2
10 MAY	11.4	11.5	11.6	13.4	11.6	11.8	11.9	11.9
17 MAY	12.7	12.8	12.8	12.8	12.8	12.8	--	12.8
24 MAY	15.6	15.5	15.3	17.8	15.3	15.4	15.3	15.7
30 MAY	17.9	18.0	18.6	18.9	18.5	19.2	19.8	18.7
5 JUN	19.6	19.1	21.6	21.4	20.0	--	19.5	20.2
14 JUN	--	--	20.3	20.4	21.3	20.5	20.7	20.6
21 JUN	21.6	21.6	21.8	22.3	22.5	22.1	22.2	22.0
26 JUN	22.6	22.6	22.8	22.8	23.1	23.3	23.3	22.9
6 JUL	22.8	22.8	23.0	25.1	23.0	22.8	22.9	23.2
10 JUL	23.4	23.4	23.6	23.6	24.0	24.6	--	23.8
18 JUL	24.6	24.6	25.0	24.2	25.8	24.9	24.9	24.9
25 JUL	25.9	25.7	25.9	26.2	26.3	26.8	26.6	26.2
20 AUG	26.4	26.3	27.6	27.6	26.6	27.1	26.7	26.9
19 SEP	24.6	22.8	23.0	23.1	23.4	23.3	23.5	23.4
18 OCT	17.7	16.9	18.1	18.0	19.0	17.8	18.3	18.0
15 NOV	13.7	12.8	14.1	13.8	14.4	14.6	13.9	13.9
5 DEC	7.6	7.7	8.3	8.1	10.1	8.6	8.5	8.4
MEAN	18.1	18.4	18.5	18.9	18.0	17.6	17.8	18.2
Middepth								
29 MAR	--	--	--	--	--	--	--	--
18 APR	--	--	--	--	--	--	--	--
3 MAY	--	--	--	--	--	--	--	--
[illegible] MAY	11.4	11.5	11.5	11.8	11.5	--	11.7	11.6
[illegible] MAY	--	--	--	--	--	--	--	--
[illegible]4 MAY	15.6	15.4	15.3	17.0	15.3	15.4	15.3	15.6
30 MAY	17.9	17.5	18.2	18.8	18.9	18.9	18.5	18.4
5 JUN	19.5	19.0	20.3	21.3	19.9	19.6	19.8	19.9
14 JUN	20.3	20.3	20.3	20.4	20.7	20.5	20.7	20.5
21 JUN	21.6	21.6	21.8	22.0	22.1	22.2	22.3	21.9
26 JUN	22.6	22.6	22.7	22.8	23.1	23.2	23.2	22.9
6 JUL	22.6	22.6	22.7	22.9	22.8	22.8	22.9	22.8
10 JUL	23.6	23.6	23.6	23.6	23.9	24.1	--	23.7
18 JUL	24.5	24.6	24.7	24.9	25.2	24.6	24.7	24.7
25 JUL	25.9	25.9	26.2	26.3	26.3	26.8	26.5	26.3
20 AUG	26.2	26.2	26.6	27.5	26.6	27.1	26.7	26.7
19 SEP	23.4	23.1	--	23.0	23.4	23.1	23.3	23.2
18 OCT	17.6	17.3	17.4	17.2	17.5	17.8	18.0	17.5
15 NOV	13.7	12.8	13.6	13.2	13.3	14.5	13.9	13.6
5 DEC	7.6	7.8	8.3	8.3	8.6	8.3	8.2	8.2
MEAN	19.6	19.5	19.5	20.1	19.9	20.6	19.7	19.8
Bottom								
29 MAR	--	--	--	--	2.3	1.9	2.4	2.2
18 APR	7.6	7.6	7.7	7.7	7.6	7.5	8.2	7.7
3 MAY	10.7	11.1	11.1	--	11.1	11.1	--	11.0
10 MAY	11.4	11.5	11.5	11.8	11.5	11.6	11.6	11.6
17 MAY	12.7	12.7	12.6	12.7	12.7	12.0	12.9	12.6
24 MAY	15.4	15.4	15.3	17.5	15.3	15.3	15.3	15.6
30 MAY	17.9	17.5	18.2	18.5	19.9	19.0	18.6	18.5
5 JUN	19.5	19.0	19.4	19.8	19.7	19.6	19.7	19.5
14 JUN	20.2	20.1	20.3	20.3	20.3	20.4	20.5	20.3
21 JUN	21.6	21.6	21.8	21.9	22.1	22.3	22.4	22.0
26 JUN	22.4	22.5	22.6	22.7	22.9	22.9	23.1	22.7
6 JUL	22.4	22.5	22.6	22.8	22.8	22.6	22.8	22.6
10 JUL	23.6	23.7	23.8	23.6	23.9	24.1	--	23.8
18 JUL	24.5	24.4	24.6	23.9	24.2	24.6	24.4	24.4
25 JUL	25.8	25.9	26.2	26.3	26.3	26.5	26.4	26.2
20 AUG	26.7	26.2	26.5	27.0	26.5	26.9	26.7	26.6
19 SEP	24.6	22.8	23.0	23.9	23.2	22.7	23.2	23.3
[illegible]8 OCT	17.6	17.3	17.5	17.2	17.4	17.5	17.8	17.5
[illegible]5 NOV	13.5	12.9	13.5	12.7	13.4	14.4	13.7	13.4
[illegible]5 DEC	7.5	7.7	8.2	8.2	8.5	8.1	8.2	8.1
MEAN	18.2	18.0	18.2	18.8	17.6	17.6	17.7	18.0

Note: Dashes (--) indicate data not available because of equipment malfunction.

TABLE C.1-14 SALINITY (ppt) RECORDED DURING ICHTHYOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE DAY IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
				Surface				
21 MAR	0.1	0.2	0.1	0.2	0.2	0.6	0.3	0.2
20 APR	0.8	0.5	1.3	0.9	1.1	1.4	1.6	1.1
5 MAY	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
12 MAY	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
17 MAY	0.2	0.2	0.3	0.2	0.2	0.4	0.4	0.3
24 MAY	--	--	--	--	--	--	--	--
31 MAY	--	--	--	--	--	--	--	--
5 JUN	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
14 JUN	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
21 JUN	0.3	0.3	0.5	0.5	0.9	1.0	0.9	0.6
26 JUN	0.2	0.2	0.2	0.3	0.5	0.8	0.6	0.4
6 JUL	--	1.4	1.7	1.7	2.1	2.6	2.2	2.0
10 JUL	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.3
18 JUL	1.4	1.2	1.6	1.5	1.6	2.2	1.8	1.6
25 JUL	1.8	1.7	2.2	2.1	2.4	2.6	2.5	2.2
22 AUG	2.5	2.1	2.2	2.1	1.9	2.4	1.9	2.2
18 SEP	4.2	4.1	4.6	4.0	4.1	4.3	4.3	4.2
17 OCT	3.4	3.2	3.2	3.4	3.6	3.5	3.3	3.4
14 NOV	1.6	1.4	2.1	1.5	2.3	2.6	2.6	2.0
4 DEC	4.9	5.2	5.2	4.9	4.8	4.8	4.7	4.9
MEAN	1.3	1.2	1.4	1.5	1.5	1.7	1.6	1.5
				Middepth				
21 MAR	--	--	--	--	--	--	--	--
20 APR	--	--	--	--	--	--	--	--
5 MAY	--	--	--	--	--	--	--	--
12 MAY	0.1	0.1	0.1	0.1	0.1	--	0.1	0.1
17 MAY	0.2	0.2	0.4	0.7	0.5	1.0	0.5	0.[illegible]
24 MAY	--	--	--	--	--	--	--	--
31 MAY	--	--	--	--	--	--	--	--
5 JUN	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
14 JUN	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
21 JUN	0.4	0.4	0.7	0.8	1.0	1.3	1.1	0.8
26 JUN	0.2	0.2	0.2	0.3	0.6	1.0	0.7	0.5
6 JUL	2.0	1.6	2.1	2.4	2.5	2.8	2.7	2.3
10 JUL	0.3	0.3	3.4	0.3	0.4	0.4	0.4	0.8
18 JUL	1.5	1.6	1.7	1.5	1.8	2.5	2.0	1.8
25 JUL	1.9	1.8	2.5	2.2	2.5	2.7	2.6	2.3
22 AUG	2.6	2.3	2.1	2.2	2.0	2.5	2.0	2.2
18 SEP	4.5	4.7	5.2	4.3	4.2	4.6	4.7	4.6
17 OCT	3.6	3.3	3.6	3.7	4.0	3.7	3.5	3.6
14 NOV	1.9	1.5	2.1	2.3	2.5	2.9	2.9	2.3
4 DEC	5.2	5.3	5.4	5.0	4.9	5.9	5.0	5.2
MEAN	1.6	1.6	2.0	1.7	1.8	2.3	1.9	1.8
				Bottom				
21 MAR	0.1	0.4	0.1	0.2	0.2	1.5	0.4	0.4
20 APR	2.1	0.9	1.8	2.6	2.1	2.5	3.0	2.1
5 MAY	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
12 MAY	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
17 MAY	0.3	0.7	1.7	1.1	2.8	0.9	0.8	1.2
24 MAY	--	--	--	--	--	--	--	--
31 MAY	--	--	--	--	--	--	--	--
5 JUN	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
14 JUN	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
21 JUN	0.5	0.4	0.7	0.8	1.1	1.4	1.2	0.9
26 JUN	0.2	0.2	0.2	0.4	0.6	1.1	0.7	0.5
6 JUL	2.1	1.8	2.8	2.6	3.5	3.3	3.0	2.7
10 JUL	0.2	--	0.3	0.4	0.4	0.5	0.4	0.4
18 JUL	1.5	1.7	1.8	1.5	2.0	3.0	2.1	1.9
25 JUL	2.0	1.8	2.4	2.2	2.6	2.8	2.6	2.3
22 AUG	2.6	1.9	2.4	2.2	2.2	2.6	2.1	2.3
18 SEP	4.6	4.8	5.1	4.7	4.6	4.9	4.7	4.8
17 OCT	3.8	3.4	3.9	3.9	4.2	4.1	3.7	3.9
14 NOV	2.0	1.5	2.3	2.4	2.9	3.0	3.0	2.[illegible]
4 DEC	5.3	5.4	5.4	5.3	5.5	5.9	5.5	5.[illegible]
MEAN	1.5	1.5	1.7	1.7	2.0	2.1	1.9	1.[illegible]

Note: Dashes (--) indicate data not available because of equipment malfunction.

TABLE C.1-15 SALINITY (ppt) RECORDED DURING ICHTYOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE NIGHT IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Surface								
29 MAR	--	--	--	--	0.1	0.1	0.1	0.1
18 APR	0.6	0.5	0.5	0.4	0.8	0.7	0.5	0.6
3 MAY	0.1	--	0.1	0.1	0.1	0.1	0.1	0.1
10 MAY	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
17 MAY	0.2	0.1	0.3	0.2	0.3	0.0	--	0.2
24 MAY	--	--	--	--	--	--	--	--
30 MAY	--	--	--	--	--	--	--	--
5 JUN	0.1	0.1	0.1	0.1	0.1	--	0.1	0.1
14 JUN	--	--	0.1	0.1	0.1	0.1	0.1	0.1
21 JUN	0.2	0.2	0.3	0.4	0.5	0.8	0.8	0.5
26 JUN	0.2	0.2	0.3	0.3	0.5	0.8	0.6	0.4
6 JUL	1.3	1.2	1.6	1.8	1.7	2.0	2.0	1.7
10 JUL	1.6	1.5	1.8	1.7	1.8	2.4	--	1.8
18 JUL	2.3	1.9	2.6	1.7	2.5	2.8	2.9	2.4
25 JUL	1.5	1.3	1.6	1.7	1.9	2.3	2.1	1.8
20 AUG	0.2	--	0.2	0.2	0.3	0.3	0.3	0.3
19 SEP	3.4	2.8	3.1	3.1	3.7	4.5	3.7	3.5
18 OCT	2.7	2.0	2.2	2.2	2.3	3.5	2.8	2.5
15 NOV	1.0	0.6	0.7	0.6	0.8	1.4	1.0	0.9
5 DEC	3.2	3.2	3.9	3.7	4.1	4.6	4.7	3.9
MEAN	1.2	1.1	1.1	1.1	1.2	1.6	1.4	1.2
Middepth								
29 MAR	--	--	--	--	--	--	--	--
18 APR	--	--	--	--	--	--	--	--
3 MAY	--	--	--	--	--	--	--	--
[illegible] MAY	0.1	0.1	0.1	0.1	0.1	--	0.7	0.2
[illegible] MAY	--	--	--	--	--	--	--	--
[illegible] MAY	--	--	--	--	--	--	--	--
30 MAY	--	--	--	--	--	--	--	--
5 JUN	0.1	0.1	0.8	0.1	0.1	0.1	0.1	0.2
14 JUN	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
21 JUN	0.2	0.2	0.4	0.4	0.7	1.2	0.8	0.6
26 JUN	0.2	0.2	0.3	0.3	0.5	0.8	0.6	0.4
6 JUL	1.7	1.9	1.3	1.7	2.0	2.4	2.1	1.9
10 JUL	1.8	1.9	1.9	1.7	2.1	2.8	--	2.0
18 JUL	2.6	2.0	2.7	2.7	2.7	3.0	3.0	2.7
25 JUL	1.5	1.7	1.7	1.9	1.9	2.3	2.1	1.9
20 AUG	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2
19 SEP	3.4	3.0	--	3.1	3.7	4.9	4.1	3.7
18 OCT	2.8	2.4	2.3	2.2	2.4	3.6	2.9	2.7
15 NOV	1.1	0.6	1.0	0.6	0.8	1.4	1.1	0.9
5 DEC	3.2	3.3	3.9	3.8	4.9	5.1	5.2	4.2
MEAN	1.4	1.4	1.3	1.4	1.6	2.2	1.8	1.6
Bottom								
29 MAR	--	--	--	--	0.1	0.1	0.1	0.1
18 APR	2.1	2.1	1.1	0.5	2.5	1.4	0.7	1.5
3 MAY	0.1	0.1	0.1	--	0.1	0.1	--	0.1
10 MAY	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
17 MAY	0.2	0.3	0.4	0.2	0.1	0.2	0.1	0.2
24 MAY	--	--	--	--	--	--	--	--
30 MAY	--	--	--	--	--	--	--	--
5 JUN	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
14 JUN	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1
21 JUN	0.2	0.2	0.4	0.4	0.9	1.4	0.9	0.6
26 JUN	0.2	0.2	0.3	0.3	0.6	0.9	0.6	0.4
6 JUL	2.5	2.3	1.8	1.7	2.4	2.8	2.2	2.2
10 JUL	2.0	2.0	2.1	1.7	2.1	2.8	--	2.1
18 JUL	2.5	2.2	2.8	3.0	3.2	3.1	3.3	2.9
25 JUL	1.5	1.8	1.8	1.9	1.9	2.4	2.1	1.9
20 AUG	0.2	0.2	0.2	0.2	0.3	0.4	0.3	0.3
19 SEP	3.6	3.3	3.5	3.1	4.3	5.3	4.1	4.0
[illegible]8 OCT	2.9	2.4	2.7	2.3	2.4	3.7	3.0	2.8
[illegible] NOV	1.1	0.7	1.1	0.7	1.0	1.4	1.2	1.0
[illegible] DEC	3.4	3.5	4.0	3.9	4.9	5.3	5.2	4.3
MEAN	1.3	1.3	1.3	1.3	1.5	1.8	1.5	1.4

Note: Dashes (--) indicate data not available because of equipment malfunction.

TABLE C.1-16 DISSOLVED OXYGEN (ppm) RECORDED DURING ICHTHYOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE DAY IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
				Surface				
21 MAR	10.2	10.3	10.2	10.2	10.2	10.2	10.3	10.2
20 APR	10.8	10.8	10.8	10.8	11.0	10.8	10.8	10.8
5 MAY	11.0	10.1	10.1	10.1	10.2	10.1	10.7	10.3
12 MAY	10.9	10.9	10.0	9.5	10.8	9.5	10.3	10.3
17 MAY	12.4	12.3	8.6	7.6	7.4	12.5	14.9	10.8
24 MAY	10.4	10.4	10.6	10.7	10.8	11.1	10.6	10.7
31 MAY	10.0	10.1	10.3	10.2	10.9	11.1	10.1	10.4
5 JUN	8.2	8.4	8.7	9.1	8.6	9.3	9.8	8.9
14 JUN	7.9	8.0	8.0	8.0	8.2	8.4	8.3	8.1
21 JUN	7.6	7.1	7.1	7.4	6.7	6.8	6.9	7.1
26 JUN	7.4	7.4	8.3	9.0	7.8	8.5	7.5	8.0
6 JUL	10.6	10.4	9.9	10.3	10.6	10.2	9.9	10.3
10 JUL	5.8	7.6	5.7	5.6	6.5	6.8	6.8	6.4
18 JUL	8.0	8.0	7.7	7.6	7.6	6.7	7.7	7.6
25 JUL	6.1	6.7	6.5	6.8	7.1	7.8	7.3	6.9
22 AUG	5.9	6.0	5.4	5.4	6.3	6.2	5.3	5.8
18 SEP	6.2	6.0	5.9	5.9	5.8	5.7	5.8	5.9
17 OCT	6.0	6.3	5.8	6.4	6.4	6.2	6.3	6.2
14 NOV	8.8	8.5	8.6	8.5	9.5	8.6	8.7	8.7
4 DEC	8.3	8.4	8.4	8.8	8.4	8.3	8.5	8.4
MEAN	8.6	8.7	8.3	8.4	8.5	8.7	8.8	8.6
				Middepth				
21 MAR	--	--	--	--	--	--	--	--
20 APR	--	--	--	--	--	--	--	--
5 MAY	--	--	--	--	--	--	--	--
12 MAY	12.4	12.7	10.9	10.4	11.0	--	10.8	11.4
17 MAY	9.0	7.2	8.7	14.3	7.4	9.4	7.2	9.0
24 MAY	10.5	10.5	10.8	11.0	10.9	11.1	10.8	10.[illegible]
31 MAY	10.1	10.1	10.6	10.3	10.4	10.3	9.9	10.[illegible]
5 JUN	8.0	8.3	8.2	8.9	8.5	9.6	9.9	8.8
14 JUN	7.9	7.8	7.8	7.8	8.1	8.4	8.3	8.0
21 JUN	7.6	7.1	7.1	7.4	6.7	6.8	6.9	7.1
26 JUN	7.4	7.3	8.6	9.8	7.1	11.7	7.3	8.5
6 JUL	10.5	10.5	9.6	9.6	10.3	10.1	9.8	10.1
10 JUL	--	--	--	--	--	--	--	--
18 JUL	8.0	8.0	7.7	7.8	7.7	6.0	7.4	7.5
25 JUL	5.3	6.7	5.8	6.8	7.1	7.4	6.9	6.6
22 AUG	6.2	5.4	6.2	6.7	7.7	6.4	6.3	6.4
18 SEP	6.1	5.9	5.8	5.9	5.8	5.7	5.8	5.9
17 OCT	5.8	6.2	5.7	6.4	6.3	6.1	6.2	6.1
14 NOV	9.1	8.7	8.7	8.3	8.9	8.4	8.5	8.7
4 DEC	8.1	8.2	8.2	8.7	8.3	8.3	8.2	8.3
MEAN	8.3	8.2	8.1	8.8	8.3	8.4	8.1	8.3
				Bottom				
21 MAR	10.5	10.3	10.2	10.3	10.2	10.2	10.4	10.3
20 APR	10.4	10.8	10.4	10.5	10.6	10.6	10.3	10.5
5 MAY	10.9	10.1	10.1	10.1	10.1	10.2	10.1	10.2
12 MAY	11.5	--	13.9	10.6	10.9	10.9	12.8	11.8
17 MAY	9.7	7.2	7.2	13.0	6.4	9.8	7.4	8.7
24 MAY	10.8	10.9	11.2	11.6	11.0	11.0	10.9	11.1
31 MAY	10.3	10.0	10.2	10.1	10.2	10.5	10.1	10.2
5 JUN	7.9	8.3	7.3	8.6	8.5	9.7	9.7	8.6
14 JUN	7.9	8.0	8.0	8.0	8.2	8.5	8.5	8.2
21 JUN	7.6	7.1	7.1	7.4	6.7	6.8	6.9	7.1
26 JUN	7.6	7.2	7.7	7.6	7.1	11.2	7.3	8.0
6 JUL	10.7	10.7	9.6	9.4	9.8	9.3	9.5	9.9
10 JUL	--	--	--	--	--	--	--	--
18 JUL	7.8	7.6	7.6	7.6	7.4	5.5	7.4	7.3
25 JUL	5.3	6.3	5.1	6.4	6.9	6.9	6.7	6.2
22 AUG	5.6	4.4	5.8	6.7	5.3	5.9	4.4	5.4
18 SEP	6.2	5.9	5.7	5.8	5.7	5.4	5.7	5.8
17 OCT	5.8	6.1	5.4	6.3	6.3	5.9	6.1	6.0
14 NOV	8.8	9.1	8.8	8.5	8.9	8.7	8.6	8.8
4 DEC	8.0	8.2	8.0	8.2	8.0	7.9	8.1	8.1
MEAN	8.6	8.2	8.4	8.9	8.3	8.7	8.5	8.[illegible]

Note: Dashes (--) indicate data not available because of equipment malfunction.

TABLE C.1-17 DISSOLVED OXYGEN (ppm) RECORDED DURING ICHTHYOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE NIGHT IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
				Surface				
29 MAR	--	--	--	--	10.4	10.5	10.4	10.4
18 APR	11.3	11.6	11.3	11.2	11.6	11.1	11.1	11.3
3 MAY	10.6	--	10.2	10.2	10.3	9.8	10.1	10.2
10 MAY	9.2	11.4	11.3	7.9	11.3	10.8	10.0	10.3
17 MAY	11.3	9.8	10.8	11.5	9.9	--	10.2	10.6
24 MAY	10.3	10.4	10.4	10.3	10.4	10.6	10.5	10.4
30 MAY	10.4	11.3	11.1	10.6	10.4	10.9	12.2	11.0
5 JUN	8.2	8.2	8.1	8.2	8.8	--	9.1	8.4
14 JUN	--	--	7.7	7.9	8.0	8.5	7.9	8.0
21 JUN	7.1	6.8	6.7	7.0	6.9	6.9	6.6	6.9
26 JUN	9.6	7.2	7.5	8.6	7.2	8.3	7.3	8.0
6 JUL	11.1	12.3	12.7	13.5	13.3	14.2	13.6	13.0
10 JUL	--	--	--	--	--	--	--	--
18 JUL	7.6	7.4	8.8	8.7	8.6	8.4	8.8	8.3
25 JUL	7.2	7.0	6.9	7.1	6.8	7.3	7.1	7.1
20 AUG	5.6	--	--	--	--	--	--	5.6
19 SEP	6.1	6.2	6.0	6.0	5.9	5.7	5.8	6.0
18 OCT	6.6	6.6	6.5	6.4	6.3	5.9	6.2	6.4
15 NOV	9.5	9.4	9.6	9.9	9.8	9.0	11.6	9.8
5 DEC	8.3	7.9	8.2	7.9	8.5	7.6	8.1	8.1
MEAN	8.8	8.9	9.0	9.0	9.1	9.1	9.3	9.0
				Middepth				
29 MAR	--	--	--	--	--	--	--	--
18 APR	--	--	--	--	--	--	--	--
3 MAY	--	--	--	--	--	--	--	--
10 MAY	8.2	10.1	7.0	7.0	10.6	--	7.9	8.5
17 MAY	--	--	--	--	--	--	--	--
24 MAY	10.5	10.5	10.6	10.4	10.5	10.6	10.6	10.5
30 MAY	10.2	11.0	10.6	10.5	10.7	10.8	10.5	10.6
5 JUN	8.1	8.1	8.0	7.9	8.4	8.6	8.9	8.3
14 JUN	7.8	7.8	7.8	7.9	8.0	8.5	8.0	8.0
21 JUN	7.1	6.8	6.7	7.0	6.9	6.9	6.6	6.9
26 JUN	8.7	7.2	7.4	9.2	7.3	8.8	7.3	8.0
6 JUL	10.8	11.5	12.5	13.1	12.5	13.6	13.3	12.5
10 JUL	--	--	--	--	--	--	--	--
18 JUL	8.3	7.6	8.0	8.8	9.3	8.4	8.9	8.5
25 JUL	7.1	7.2	7.2	7.0	7.0	7.2	7.0	7.1
20 AUG	5.5	4.0	--	--	--	--	--	4.8
19 SEP	6.3	6.1	6.0	5.9	5.9	5.6	5.7	5.9
18 OCT	6.6	6.5	6.5	6.4	6.3	5.9	6.1	6.3
15 NOV	9.7	9.5	9.5	9.8	9.5	8.9	9.5	9.5
5 DEC	8.4	7.8	8.6	7.9	8.2	7.7	8.1	8.1
MEAN	8.2	8.1	8.3	8.5	8.7	8.6	8.5	8.4
				Bottom				
29 MAR	--	--	--	--	10.6	10.1	10.6	10.4
18 APR	10.8	10.8	11.2	11.2	10.6	10.8	11.1	10.9
3 MAY	10.8	10.2	10.2	--	10.2	9.9	--	10.3
10 MAY	5.1	8.7	7.0	7.4	9.9	9.6	9.0	8.1
17 MAY	9.4	9.5	13.0	8.6	11.0	--	11.0	10.4
24 MAY	10.7	10.7	10.7	10.7	10.7	10.8	10.7	10.7
30 MAY	10.0	10.0	10.3	10.3	10.5	10.8	10.5	10.3
5 JUN	8.0	8.0	7.9	8.0	8.2	8.6	8.6	8.2
14 JUN	8.0	7.9	7.9	8.0	8.2	8.7	7.8	8.1
21 JUN	7.1	6.8	6.7	7.0	6.9	6.9	6.6	6.9
26 JUN	7.6	7.3	7.5	13.8	7.3	7.6	7.4	8.4
6 JUL	10.3	11.0	11.9	12.5	12.2	13.1	13.5	12.1
10 JUL	--	--	--	--	--	--	--	--
18 JUL	8.0	6.8	7.1	8.6	8.8	8.5	8.7	8.1
25 JUL	6.9	6.9	6.9	6.9	6.9	6.2	6.9	6.8
20 AUG	5.5	4.5	--	--	--	--	--	5.0
19 SEP	6.2	6.1	6.0	5.9	5.7	5.4	--	5.9
18 OCT	6.5	6.5	6.4	6.3	6.2	5.3	6.0	6.2
15 NOV	9.8	9.6	9.8	9.8	9.7	9.0	9.7	9.6
5 DEC	8.5	8.4	9.3	8.1	8.5	8.1	8.5	8.5
MEAN	8.3	8.3	8.8	8.4	9.0	8.8	9.1	8.8

Note: Dashes (--) indicate data not available because of equipment malfunction.

TABLE C.1-18 CONDUCTIVITY (μmho) RECORDED DURING ICHTHYOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE DAY IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
				Surface				
21 MAR	129.0	268.0	139.0	195.0	233.0	714.0	365.0	291.9
20 APR	1093.0	631.0	1625.0	1167.0	1381.0	1777.0	2129.0	1400.4
5 MAY	111.0	110.0	108.0	108.0	118.0	117.0	117.0	112.7
12 MAY	112.0	111.0	113.0	109.0	113.0	108.0	110.0	110.9
17 MAY	304.0	221.0	432.0	333.0	356.0	578.0	547.0	395.9
24 MAY	--	--	--	--	--	--	--	--
31 MAY	--	--	--	--	--	--	--	--
5 JUN	138.0	140.0	142.0	144.0	147.0	148.0	147.0	143.7
14 JUN	152.0	155.0	155.0	155.0	151.0	153.0	153.0	153.4
21 JUN	510.0	590.0	970.0	980.0	1630.0	1810.0	1720.0	1172.9
26 JUN	336.0	305.0	406.0	612.0	930.0	1402.0	1210.0	743.0
6 JUL	2520.0	2530.0	3210.0	3230.0	3890.0	4300.0	3980.0	3380.0
10 JUL	528.0	500.0	620.0	618.0	712.0	732.0	748.0	636.9
18 JUL	2560.0	2210.0	3060.0	2770.0	3050.0	4180.0	3460.0	3041.4
25 JUL	3490.0	3420.0	4350.0	4070.0	4670.0	4910.0	4830.0	4248.6
22 AUG	4900.0	4140.0	4350.0	4300.0	3800.0	4700.0	3700.0	4270.0
18 SEP	7300.0	7300.0	8000.0	7200.0	7300.0	7600.0	7600.0	7471.4
17 OCT	5420.0	5020.0	5120.0	5440.0	5630.0	5440.0	5260.0	5332.9
14 NOV	2360.0	2100.0	3150.0	2310.0	3550.0	3820.0	3850.0	3020.0
4 DEC	6030.0	6380.0	6340.0	6260.0	5830.0	5850.0	5810.0	6071.4
MEAN	2110.7	2007.3	2349.4	2222.3	2416.2	2685.5	2540.9	2333.2
				Middepth				
21 MAR	--	--	--	--	--	--	--	--
20 APR	--	--	--	--	--	--	--	--
5 MAY	--	--	--	--	--	--	--	--
12 MAY	110.0	109.0	110.0	108.0	109.0	--	109.0	109.2
17 MAY	334.0	310.0	636.0	1105.0	779.0	1462.0	743.0	767.0
24 MAY	--	--	--	--	--	--	--	--
31 MAY	--	--	--	--	--	--	--	--
5 JUN	138.0	140.0	139.0	144.0	143.0	152.0	146.0	143.1
14 JUN	151.0	151.0	151.0	151.0	152.0	152.0	152.0	151.4
21 JUN	820.0	780.0	1320.0	1440.0	1910.0	2440.0	2040.0	1535.7
26 JUN	339.0	303.0	404.0	648.0	1172.0	1818.0	1361.0	863.6
6 JUL	3560.0	2980.0	3850.0	4230.0	4420.0	5000.0	4740.0	4111.4
10 JUL	560.0	564.0	6180.0	540.0	718.0	770.0	768.0	1442.9
18 JUL	2770.0	2940.0	3190.0	2790.0	3320.0	4640.0	3800.0	3350.0
25 JUL	3810.0	3500.0	4850.0	4250.0	4830.0	5170.0	4990.0	4485.7
22 AUG	5100.0	4420.0	4200.0	4300.0	4000.0	4900.0	4000.0	4417.1
18 SEP	7900.0	8200.0	8900.0	7500.0	7400.0	8100.0	8100.0	8014.3
17 OCT	5590.0	5230.0	5760.0	5830.0	6230.0	5810.0	5470.0	5702.9
14 NOV	2780.0	2300.0	3140.0	3330.0	3650.0	4130.0	4190.0	3360.0
4 DEC	6270.0	6440.0	6470.0	6270.0	5990.0	6920.0	6040.0	6342.9
MEAN	2682.1	2557.8	3286.7	2342.4	2988.2	3676.0	3109.9	3020.4
				Bottom				
21 MAR	127.0	401.0	139.0	274.0	242.0	1655.0	442.0	468.6
20 APR	2666.0	1120.0	2247.0	3180.0	2669.0	3095.0	3643.0	2660.0
5 MAY	110.0	110.0	108.0	109.0	117.0	130.0	118.0	114.6
12 MAY	108.0	108.0	109.0	107.0	108.0	107.0	108.0	107.9
17 MAY	479.0	1053.0	2443.0	1674.0	3897.0	1329.0	1188.0	1723.3
24 MAY	--	--	--	--	--	--	--	--
31 MAY	--	--	--	--	--	--	--	--
5 JUN	137.0	140.0	140.0	142.0	141.0	155.0	146.0	143.0
14 JUN	150.0	150.0	150.0	150.0	151.0	152.0	152.0	150.7
21 JUN	930.0	790.0	1340.0	1420.0	2050.0	2480.0	2230.0	1605.7
26 JUN	325.0	308.0	393.0	667.0	1153.0	2014.0	1347.0	886.7
6 JUL	3790.0	3290.0	4860.0	4650.0	6100.0	5660.0	5280.0	4804.3
10 JUL	374.0	--	620.0	690.0	851.0	974.0	862.0	728.5
18 JUL	2830.0	3200.0	3310.0	2820.0	3770.0	5430.0	3860.0	3602.9
25 JUL	3920.0	3560.0	4660.0	4320.0	4990.0	5280.0	5050.0	4540.0
22 AUG	5200.0	3700.0	4600.0	4400.0	4200.0	5100.0	4100.0	4471.4
18 SEP	8000.0	8300.0	8800.0	8200.0	8300.0	8500.0	8200.0	8328.6
17 OCT	5970.0	5300.0	6040.0	6070.0	6440.0	6320.0	5720.0	5980.0
14 NOV	3000.0	2320.0	3390.0	3570.0	4130.0	4280.0	4240.0	3561.4
4 DEC	6380.0	6520.0	6550.0	6410.0	6580.0	6970.0	6610.0	6574.3
MEAN	2472.0	2374.7	2772.2	2714.1	3104.9	3312.8	2960.9	2815.[illegible]

Note: Dashes (--) indicate data not available because of equipment malfunction.

TABLE C.1-19 CONDUCTIVITY (µmho) RECORDED DURING ICHTHYOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE NIGHT IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
				Surface				
29 MAR	--	--	--	--	112.0	111.0	114.0	112.3
18 APR	810.0	637.0	710.0	547.0	1107.0	915.0	652.0	768.3
3 MAY	106.0	--	111.0	108.0	113.0	109.0	112.0	109.8
10 MAY	106.0	106.0	106.0	112.0	106.0	105.0	106.0	106.7
17 MAY	347.0	169.0	480.0	271.0	485.0	10.0	940.0	386.0
24 MAY	--	--	--	--	--	--	--	--
30 MAY	--	--	--	--	--	--	--	--
5 JUN	139.0	137.0	146.0	147.0	143.0	--	143.0	142.5
14 JUN	--	--	145.0	152.0	157.0	224.0	153.0	166.2
21 JUN	390.0	300.0	490.0	760.0	990.0	1460.0	1400.0	827.1
26 JUN	373.0	370.0	509.0	610.0	921.0	1535.0	1207.0	789.3
6 JUL	2440.0	2250.0	2850.0	3360.0	3090.0	3550.0	3650.0	3027.1
10 JUL	2970.0	2770.0	3360.0	3120.0	3430.0	4420.0	--	3345.0
18 JUL	4280.0	3500.0	4780.0	3150.0	4760.0	5260.0	5270.0	4428.6
25 JUL	2930.0	2620.0	3080.0	3290.0	3630.0	4410.0	4020.0	3425.7
20 AUG	310.0	--	360.0	445.0	510.0	710.0	600.0	489.2
19 SEP	6200.0	4900.0	5500.0	5500.0	6500.0	7800.0	6600.0	6142.9
18 OCT	4220.0	3140.0	3600.0	3540.0	3830.0	5430.0	4510.0	4038.6
15 NOV	1510.0	940.0	1130.0	1000.0	1240.0	2130.0	1590.0	1362.9
5 DEC	3870.0	3980.0	4820.0	4510.0	5290.0	5700.0	5800.0	4852.9
MEAN	1937.6	1844.2	1892.8	1801.3	2023.0	2581.1	2168.6	1831.8
				Middepth				
29 MAR	--	--	--	--	--	--	--	--
18 APR	--	--	--	--	--	--	--	--
3 MAY	--	--	--	--	--	--	--	--
10 MAY	106.0	105.0	105.0	106.0	105.0	--	1060.0	264.5
17 MAY	--	--	--	--	--	--	--	--
24 MAY	--	--	--	--	--	--	--	--
30 MAY	--	--	--	--	--	--	--	--
5 JUN	138.0	136.0	1390.0	144.0	139.0	141.0	142.0	318.6
14 JUN	151.0	149.0	151.0	151.0	154.0	212.0	153.0	160.1
21 JUN	370.0	310.0	680.0	800.0	1250.0	2230.0	1570.0	1030.0
26 JUN	373.0	385.0	542.0	637.0	1005.0	1550.0	1222.0	816.3
6 JUL	3050.0	3420.0	2400.0	3070.0	3610.0	4350.0	3870.0	3395.7
10 JUL	3250.0	3530.0	3430.0	3120.0	3790.0	5170.0	--	3715.0
18 JUL	4850.0	3760.0	4980.0	4960.0	5030.0	5480.0	5420.0	4925.7
25 JUL	2950.0	3380.0	3380.0	3630.0	3630.0	4480.0	4080.0	3647.1
20 AUG	330.0	290.0	370.0	450.0	520.0	720.0	600.0	468.6
19 SEP	6100.0	5400.0	5750.0	5500.0	6500.0	8500.0	7150.0	6414.3
18 OCT	4390.0	3810.0	3690.0	3500.0	3790.0	5590.0	4620.0	4198.6
15 NOV	1700.0	980.0	1540.0	980.0	1230.0	2150.0	1690.0	2727.1
5 DEC	3930.0	4030.0	4850.0	4710.0	5980.0	6200.0	6310.0	5144.3
MEAN	2263.4	1979.0	2375.6	2268.4	2623.8	3597.9	2914.4	2659.0
				Bottom				
29 MAR	--	--	--	--	113.0	111.0	113.0	112.3
18 APR	2670.0	2578.0	1486.0	603.0	3080.0	1758.0	982.0	1885.7
3 MAY	106.0	110.0	110.0	--	108.0	108.0	--	108.4
10 MAY	110.0	105.0	105.0	105.0	104.0	104.0	104.0	105.3
17 MAY	319.0	376.0	555.0	275.0	149.0	334.0	180.0	312.6
24 MAY	--	--	--	--	--	--	--	--
30 MAY	--	--	--	--	--	--	--	--
5 JUN	137.0	135.0	136.0	138.0	138.0	141.0	141.0	138.0
14 JUN	150.0	148.0	150.0	150.0	152.0	281.0	152.0	169.0
21 JUN	370.0	330.0	730.0	810.0	1620.0	2460.0	1620.0	1134.3
26 JUN	372.0	398.0	590.0	647.0	1065.0	1609.0	1213.0	842.0
6 JUL	4370.0	4080.0	3210.0	3170.0	4310.0	5000.0	4030.0	4024.3
10 JUL	3640.0	3640.0	3820.0	3150.0	3910.0	5080.0	--	3873.3
18 JUL	4580.0	4050.0	5110.0	5440.0	5780.0	5650.0	5960.0	5224.3
25 JUL	2956.0	3490.0	3490.0	3640.0	3640.0	4680.0	4090.0	3712.3
20 AUG	330.0	290.0	390.0	440.0	540.0	740.0	610.0	477.1
19 SEP	6500.0	6600.0	6200.0	5500.0	7400.0	9000.0	7200.0	6914.3
18 OCT	4610.0	3740.0	4240.0	3570.0	3810.0	5750.0	4770.0	4355.7
15 NOV	1700.0	1090.0	1610.0	990.0	1440.0	2200.0	1810.0	1548.6
5 DEC	4130.0	4250.0	4870.0	4750.0	6020.0	6410.0	6330.0	5251.4
MEAN	2179.4	2082.9	2164.8	2086.1	2409.9	2856.4	2456.6	2232.7

Note: Dashes (--) indicate data not available because of equipment malfunction.

TABLE C.1-20 pH RECORDED DURING ICHTHYOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE DAY IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
				Surface				
21 MAR	7.8	7.8	7.9	7.8	7.9	8.0	7.9	7.9
20 APR	--	--	--	--	--	--	--	--
5 MAY	8.1	8.0	8.1	8.0	8.1	8.0	8.1	8.1
12 MAY	8.2	8.1	8.1	8.2	8.2	8.1	8.1	8.1
17 MAY	8.1	8.9	8.0	8.0	8.0	8.0	8.0	8.1
24 MAY	7.8	7.8	7.7	7.7	7.8	8.1	7.8	7.8
31 MAY	8.0	7.8	7.8	7.8	7.8	7.9	7.7	7.8
5 JUN	6.7	6.5	6.6	6.8	7.0	7.4	7.6	6.9
14 JUN	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
21 JUN	7.6	7.7	7.6	7.7	7.6	7.5	7.6	7.6
26 JUN	7.4	7.3	7.6	7.6	7.5	7.7	7.6	7.5
6 JUL	7.4	7.3	7.0	7.3	7.3	7.1	7.2	7.2
10 JUL	--	--	--	--	--	--	--	--
18 JUL	7.4	7.4	7.4	7.4	7.3	7.5	7.4	7.4
25 JUL	7.6	7.4	7.5	7.5	--	7.5	7.5	7.5
22 AUG	7.6	7.4	7.6	7.6	7.6	7.7	7.4	7.6
18 SEP	7.6	7.6	7.7	7.6	7.4	6.9	6.9	7.4
17 OCT	8.1	8.0	7.9	8.0	7.9	8.2	7.9	8.0
14 NOV	7.5	7.5	7.6	7.6	7.6	7.6	7.6	7.6
4 DEC	7.7	7.7	7.8	7.7	7.7	7.8	7.8	7.7
MEAN	7.7	7.7	7.6	7.7	7.7	7.7	7.6	7.7
				Middepth				
21 MAR	--	--	--	--	--	--	--	--
20 APR	--	--	--	--	--	--	--	--
5 MAY	--	--	--	--	--	--	--	--
12 MAY	8.1	8.1	8.1	8.0	8.1	--	8.0	8.1
17 MAY	8.0	7.9	7.9	7.9	7.9	7.9	7.9	7.9
24 MAY	7.8	7.8	7.8	7.7	7.9	8.0	7.9	7.[illegible]
31 MAY	8.0	8.0	7.9	7.8	7.8	7.8	7.8	7.9
5 JUN	6.6	6.6	6.7	7.0	7.1	7.5	7.4	7.0
14 JUN	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
21 JUN	7.5	7.5	7.5	7.5	7.4	7.4	7.4	7.5
26 JUN	7.2	7.2	7.6	7.6	7.6	7.8	7.6	7.5
6 JUL	7.1	7.1	6.9	7.1	7.1	6.9	7.0	7.0
10 JUL	--	--	--	--	--	--	--	--
18 JUL	7.4	7.4	7.4	7.4	7.3	7.5	7.4	7.4
25 JUL	7.5	7.4	7.5	7.5	7.5	7.5	7.5	7.5
22 AUG	7.7	7.3	7.7	7.7	7.6	7.7	7.6	7.6
18 SEP	--	--	--	--	--	--	--	--
17 OCT	7.8	8.0	8.0	8.0	7.9	8.0	8.0	8.0
14 NOV	7.6	7.5	7.6	7.6	7.6	7.6	7.6	7.6
4 DEC	7.7	7.7	7.8	7.7	7.7	7.8	7.8	7.7
MEAN	7.6	7.5	7.6	7.6	7.6	7.6	7.6	7.6
				Bottom				
21 MAR	7.8	7.8	8.0	7.8	7.9	7.9	7.9	7.9
20 APR	--	--	--	--	--	--	--	--
5 MAY	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
12 MAY	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
17 MAY	7.9	7.9	7.7	7.8	7.6	7.8	7.6	7.8
24 MAY	7.9	7.9	7.8	7.7	7.9	8.0	7.8	7.9
31 MAY	7.9	7.9	7.9	7.8	7.9	8.0	7.8	7.9
5 JUN	6.6	6.6	6.8	7.2	7.2	7.6	7.2	7.0
14 JUN	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
21 JUN	7.5	7.4	7.4	7.6	7.4	7.4	7.4	7.4
26 JUN	7.1	7.1	7.5	7.5	7.6	7.8	7.6	7.5
6 JUL	7.0	7.0	6.8	7.0	6.9	6.8	6.9	6.9
10 JUL	--	--	--	--	--	--	--	--
18 JUL	7.4	7.4	7.5	7.4	7.4	7.5	7.4	7.4
25 JUL	7.5	7.4	7.5	7.6	7.6	7.6	7.5	7.5
22 AUG	7.7	7.1	8.0	7.8	7.7	7.9	7.8	7.7
18 SEP	--	--	--	--	--	--	--	--
17 OCT	8.1	8.0	8.0	8.0	7.9	7.9	7.9	8.0
14 NOV	7.6	7.6	7.6	7.6	7.6	7.7	8.6	7.8
4 DEC	7.7	7.7	7.8	7.8	7.8	7.8	7.8	7.8
MEAN	7.6	7.6	7.6	7.7	7.6	7.7	7.7	7.[illegible]

Note: Dashes (--) indicate data not available because of equipment malfunction.

TABLE C.1-21 pH RECORDED DURING ICHTHYOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE NIGHT IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Surface								
29 MAR	--	--	--	--	8.0	7.9	8.0	8.0
18 APR	--	--	--	--	--	--	--	--
3 MAY	--	--	--	--	--	--	--	--
10 MAY	7.9	8.0	8.0	8.0	8.1	8.2	8.0	8.0
17 MAY	7.9	8.0	7.9	8.1	7.9	8.1	8.0	8.0
24 MAY	7.7	7.8	7.8	7.8	7.8	7.9	7.8	7.8
30 MAY	7.9	8.1	8.1	7.9	7.8	7.9	8.1	8.0
5 JUN	6.8	6.7	6.5	6.7	6.8	--	6.8	6.7
14 JUN	--	--	7.5	7.5	7.5	7.5	7.5	7.5
21 JUN	7.9	7.7	7.7	7.7	7.6	7.7	7.6	7.7
26 JUN	7.4	7.4	7.3	7.5	7.5	7.0	7.5	7.4
6 JUL	6.9	7.0	7.0	7.0	7.0	7.0	7.0	7.0
10 JUL	7.4	7.5	7.5	7.5	7.5	7.5	--	7.5
18 JUL	7.5	7.4	7.4	7.5	7.4	7.5	7.4	7.4
25 JUL	7.4	7.4	7.4	7.4	7.4	7.5	7.4	7.4
20 AUG	7.2	7.2	7.2	7.1	7.3	7.1	7.1	7.2
19 SEP	6.8	6.9	7.0	7.1	6.9	7.0	--	7.0
18 OCT	7.9	7.6	7.5	7.8	7.8	8.4	8.2	7.9
15 NOV	7.7	7.5	7.5	7.5	7.5	7.5	7.6	7.5
5 DEC	7.8	7.8	7.8	7.8	7.8	8.0	7.9	7.8
MEAN	7.5	7.5	7.5	7.5	7.5	7.6	7.6	7.5
Middepth								
29 MAR	--	--	--		--	--	--	--
18 APR	--	--	--	--	--	--	--	--
3 MAY	--	--	--	--	--	--	--	--
10 MAY	7.9	7.9	8.0	7.9	7.9	--	7.9	7.9
17 MAY	--	--	--	--	--	--	--	--
24 MAY	7.7	7.8	7.9	7.8	7.8	7.9	7.7	7.8
30 MAY	7.8	7.9	7.9	7.9	7.9	7.9	7.8	7.9
5 JUN	6.6	6.3	6.4	6.3	6.7	6.6	6.8	6.5
14 JUN	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
21 JUN	7.8	7.7	7.5	7.6	7.5	7.5	7.5	7.6
26 JUN	7.4	7.5	7.4	7.5	7.6	6.8	7.5	7.4
6 JUL	7.0	7.0	7.0	7.1	7.1	7.0	7.0	7.0
10 JUL	7.4	7.3	7.4	7.4	7.4	7.4	--	7.4
18 JUL	7.6	7.6	7.4	7.4	7.5	7.5	7.5	7.5
25 JUL	7.4	7.4	7.4	7.4	7.5	7.5	7.4	7.4
20 AUG	7.1	7.2	7.1	7.2	7.1	7.1	7.1	7.1
19 SEP	--	--	--	--	--	--	--	--
18 OCT	7.9	7.9	7.8	7.9	8.0	8.0	8.1	7.9
15 NOV	7.5	7.4	7.5	7.5	7.5	7.5	7.6	7.5
5 DEC	7.8	7.8	7.8	7.9	7.9	8.0	7.9	7.9
MEAN	7.5	7.5	7.5	7.5	7.5	7.4	7.5	7.5
Bottom								
29 MAR	--	--	--	--	8.1	7.9	8.0	8.0
18 APR	--	--	--	--	--	--	--	--
3 MAY	--	--	--	--	--	--	--	--
10 MAY	7.2	7.9	7.7	7.9	7.8	7.8	7.7	7.7
17 MAY	7.9	7.9	7.9	7.7	7.9	8.0	8.0	7.9
24 MAY	7.7	7.8	7.9	7.8	7.8	8.0	7.7	7.8
30 MAY	7.1	7.6	7.7	7.8	7.9	7.9	7.8	7.7
5 JUN	6.5	6.0	6.4	--	6.6	6.8	6.8	6.5
14 JUN	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
21 JUN	7.7	7.6	7.5	7.5	7.5	7.5	7.5	7.5
26 JUN	7.3	7.5	7.4	7.5	7.6	6.6	7.5	7.3
6 JUL	6.9	7.0	7.1	7.2	7.1	7.1	7.1	7.1
10 JUL	7.3	7.3	7.3	7.4	7.3	7.3	--	7.3
18 JUL	7.6	7.4	7.4	7.4	7.4	7.4	7.5	7.4
25 JUL	7.5	7.4	7.4	7.5	7.5	7.5	6.8	7.4
20 AUG	7.1	7.1	7.2	7.1	7.2	7.1	7.3	7.2
19 SEP	--	--	--	--	--	--	--	--
18 OCT	8.2	8.0	8.0	8.0	8.1	8.3	8.1	8.1
15 NOV	7.5	7.5	7.6	7.5	7.5	7.6	7.6	7.5
5 DEC	7.8	7.8	8.2	7.8	7.9	8.1	7.9	7.9
MEAN	7.4	7.5	7.5	7.6	7.6	7.6	7.6	7.5

Note: Dashes (--) indicate data not available because of equipment malfunction.

TABLE C.1-22 SECCHI DISK TRANSPARENCY (meters) RECORDED DURING ICHTHYOPLANKTON SAMPLING AT STANDARD RIVER STATIONS DURING THE DAY IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

Date	Station A	B	C	D	E	F	G
MAR	--	--	--	--	--	--	--
APR	--	--	--	--	--	--	--
5 MAY	0.5	0.5	0.5	0.5	0.5	0.5	0.5
12 MAY	0.5	0.5	0.5	0.5	0.5	0.5	0.5
17 MAY	0.3	--	--	--	0.5	0.5	0.5
24 MAY	0.5	0.3	0.5	0.5	0.7	0.7	0.7
31 MAY	0.7	0.7	0.7	0.7	0.7	0.7	0.7
5 JUN	1.0	1.0	1.0	1.0	1.0	1.0	1.0
14 JUN	1.0	1.0	1.0	1.0	1.0	1.0	1.0
21 JUN	0.8	0.8	1.0	0.8	1.0	1.0	1.0
26 JUN	0.7	0.7	0.5	0.7	0.8	0.8	0.7
6 JUL	1.3	1.4	1.4	1.3	1.3	1.3	1.4
10 JUL	1.0	1.1	1.0	0.5	1.0	1.0	1.0
18 JUL	0.8	0.8	0.8	0.8	0.8	0.8	0.8
25 JUL	0.8	0.8	0.7	0.7	0.8	0.7	0.7
22 AUG	0.7	0.8	1.0	0.7	0.5	0.7	0.7
18 SEP	1.0	1.0	1.0	1.0	1.0	1.0	1.0
17 OCT	0.3	0.3	0.2	0.2	0.2	0.3	0.2
14 NOV	0.2	0.2	0.2	0.2	0.2	0.2	0.2
4 DEC	0.2	0.3	0.3	0.2	0.3	0.4	0.3

Note: Dashes (--) indicate data not available.

TABLE C.2-1 AVERAGE WATER TEMPERATURES (C) RECORDED DURING THE ENTRAINMENT ABUNDANCE AND SURVIVAL STUDY AT THE INDIAN POINT GENERATING STATION, 1978[a]

Date	Sampling Station		
	I2	I3	D1
16 MAR	--	2.2	--
17 MAR	--	7.9	--
4 MAY	--	11.4	--
11 MAY	--	12.5	--
18 MAY	--	13.1	--
25 MAY	--	16.0	--
1 JUN	19.1	18.7	26.6
8 JUN	21.2	--	30.8
15 JUN	20.7	--	30.0
22 JUN	22.4	--	32.5
29 JUN	24.1	--	33.9
5 JUL	23.2	--	31.0
13 JUL	24.4	--	34.1
17 JUL	24.4	--	34.3
24 JUL	26.5	--	36.0
7 AUG	27.7	--	38.0
11 SEP	25.8	25.8	34.7
10 OCT	19.2	19.2	29.0
6 NOV	15.8	15.4	29.5
11 DEC	6.9	--	15.7

(a) Averaged over all sampling depths and collection periods.

Note: Dashes (--) indicate that samples were not collected because of unit outages.

TABLE C.2-2 AVERAGE SALINITY (ppt) RECORDED DURING THE ENTRAINMENT ABUNDANCE AND SURVIVAL STUDY AT THE INDIAN POINT GENERATING STATION, 1978[a]

Date	Sampling Station		
	I2	I3	D1
16 MAR	--	0.1	--
17 MAR	--	0.2	--
4 MAY	--	0.1	--
11 MAY	--	0.1	--
18 MAY	--	0.2	--
25 MAY	--	(b)	--
1 JUN	(b)	(b)	(b)
8 JUN	0.1	--	0.1
15 JUN	0.1	--	0.1
22 JUN	0.4	--	0.4
29 JUN	0.3	--	0.2
5 JUL	0.2	--	0.2
13 JUL	1.9	--	1.5
17 JUL	2.1	--	1.3
24 JUL	1.6	--	1.8
7 AUG	0.3	--	0.3
11 SEP	4.0	4.0	4.2
10 OCT	3.8	3.8	3.8
6 NOV	1.7	1.8	1.7
11 DEC	1.7	--	1.8

(a) Averaged over all sampling depths and collection periods.
(b) Data not available because of equipment malfunction.

Note: Dashes (--) indicate that samples were not collected because of unit outages.

TABLE C.2-3 AVERAGE DISSOLVED OXYGEN (ppm) RECORDED DURING THE ENTRAINMENT ABUNDANCE AND SURVIVAL STUDY AT THE INDIAN POINT GENERATING STATION, 1978[a]

Date	Sampling Station		
	I2	I3	D1
16 MAR	--	10.4	--
17 MAR	--	11.0	--
4 MAY	--	10.0	--
11 MAY	--	11.9	--
18 MAY	--	11.0	--
25 MAY	--	10.5	--
1 JUN	10.4	10.1	9.9
8 JUN	8.6	--	7.4
15 JUN	8.3	--	7.7
22 JUN	(b)	--	6.9
29 JUN	10.7	--	12.1
5 JUL	11.4	--	12.6
13 JUL	8.3	--	9.2
17 JUL	7.8	--	8.8
24 JUL	6.8	--	7.6
7 AUG	6.5	--	6.6
11 SEP	7.0	6.9	6.6
10 OCT	6.3	6.3	6.3
6 NOV	7.3	7.3	7.4
11 DEC	7.6	--	10.7

(a) Averaged over all sampling depths and collection times.
(b) Data not available because of equipment malfunction.

Note: Dashes (--) indicate that samples were not collected because of unit outages.

TABLE C.2-4 AVERAGE CONDUCTIVITY (μmho) RECORDED DURING THE ENTRAINMENT ABUNDANCE AND SURVIVAL STUDY AT THE INDIAN POINT GENERATING STATION, 1978[a]

Date	Sampling Station		
	I2	I3	D1
16 MAR	--	116.8	--
17 MAR	--	184.8	--
4 MAY	--	104.6	--
11 MAY	--	108.3	--
18 MAY	--	342.4	--
25 MAY	--	(b)	--
1 JUN	(b)	(b)	(b)
8 JUN	187.5	--	222.8
15 JUN	180.3	--	303.6
22 JUN	743.3	--	884.3
29 JUN	546.3	--	535.7
5 JUL	304.3	--	380.6
13 JUL	3,513.1	--	3,338.9
17 JUL	3,805.5	--	2,927.7
24 JUL	3,095.6	--	4,048.5
7 AUG	636.2	--	803.4
11 SEP	7,420.0	7,385.7	9,074.0
10 OCT	6,044.4	6,181.2	7,365.7
6 NOV	2,666.3	2,798.6	3,511.4
11 DEC	2,092.4	--	2,702.9

(a) Averaged over all sampling depths and collection periods.
(b) Data not available because of equipment malfunction.

Note: Dashes (--) indicate that samples were not collected because of unit outages.

TABLE C.2-5 AVERAGE pH RECORDED DURING THE ENTRAINMENT ABUNDANCE AND SURVIVAL STUDY AT THE INDIAN POINT GENERATING STATION, 1978[a]

Date	Sampling Station		
	I2	I3	D1
16 MAR	--	7.8	--
17 MAR	--	8.1	--
4 MAY	--	8.0	--
11 MAY	--	8.0	--
18 MAY	--	8.0	--
25 MAY	--	7.9	--
1 JUN	7.8	7.7	7.8
8 JUN	7.6	--	7.7
15 JUN	8.0	--	7.5
22 JUN	7.6	--	7.5
29 JUN	7.2	--	7.1
5 JUL	7.0	--	7.0
13 JUL	7.3	--	7.4
17 JUL	7.4	--	7.4
24 JUL	7.4	--	7.4
7 AUG	7.4	--	7.4
11 SEP	(b)	(b)	(b)
10 OCT	7.0	7.0	7.4
6 NOV	7.7	7.6	7.7
11 DEC	7.9	--	7.8

(a) Averaged over all sampling depths and collection periods.
(b) Data not available because of equipment malfunction.

Note: Dashes (--) indicate that samples were not collected because of unit outages.

TABLE C.3-1 AVERAGE WATER TEMPERATURE, DISSOLVED OXYGEN, CONDUCTIVITY, SALINITY, AND PH RECORDED AT THE MIDCHANNEL STATION (RC) DURING THE RIVER TRANSECT STUDY AT THE INDIAN POINT GENERATING STATION, 1978[a]

Date	Temperature (C)	Dissolved Oxygen (ppm)	Conductivity (µmho)	Salinity (ppt)	pH
4 MAY	11.2	10.0	212.7	0.2	--
11 MAY	12.2	10.0	152.0	0.1	8.0
18 MAY	12.9	8.3	629.4	0.5	8.0
25 MAY	15.7	10.3	--	--	7.8
1 JUN	19.2	10.3	--	--	7.9
8 JUN	21.4	8.6	186.5	0.1	7.6
15 JUN	21.0	8.2	251.5	0.1	7.5
22 JUN	22.5	6.7	816.7	0.4	7.6
29 JUN	24.1	10.0	1,677.6	0.9	7.3
5 JUL	22.9	10.1	335.6	0.2	7.0
13 JUL	24.5	7.9	3,557.1	1.9	7.4
17 JUL	24.4	6.9	3,904.0	2.1	7.4
24 JUL	26.6	6.0	3,431.6	1.8	7.5
Mean	19.9	8.7	1,377.7	0.8	7.6

(a) Averaged over all sampling depths and collection periods.

Note: Dashes (--) indicate data not available because of equipment malfunction.

APPENDIX D

ABUNDANCE OF SELECTED TAXA COLLECTED AT STANDARD RIVER STATIONS, INDIAN POINT GENERATING STATION, 1978

APPENDIX D TABLES

Title	Number
D.1 MICROZOOPLANKTON ABUNDANCE	
Total Microzooplankton	D.1-1
Total Crustaceans	D.1-2
Total Rotifers	D.1-3
Total Copepods (all life stages)	D.1-4
Total Adult Copepods	D.1-5
Total Copepodids	D.1-6
Total Copepod Nauplii	D.1-7
Acartia tonsa (copepodids and adults)	D.1-8
Eurytemora affinis (copepodids and adults)	D.1-9
Total Cladocerans	D.1-10
Bosmina longirostris	D.1-11
Diaphanosoma brachyurum	D.1-12
Cyclops bicuspidatus	D.1-13
Halicyclops fosteri	D.1-14
D.2 MACROZOOPLANKTON ABUNDANCE	
Total Macrozooplankton	D.2-1
Gammarus spp. (Surface)	D.2-2
Gammarus spp. (Middepth)	D.2-3
Gammarus spp. (Bottom)	D.2-4
Neomysis americana (Surface)	D.2-5
Neomysis americana (Middepth)	D.2-6
Neomysis americana (Bottom)	D.2-7
Monoculodes edwardsi (Surface)	D.2-8
Monoculodes edwardsi (Middepth)	D.2-9
Monoculodes edwardsi (Bottom)	D.2-10
Chaoborus punctipennis (Surface)	D.2-11
Chaoborus punctipennis (Middepth)	D.2-12
Chaoborus punctipennis (Bottom)	D.2-13
D.3 ICHTHYOPLANKTON ABUNDANCE	
Total Ichthyoplankton Eggs	D.3-1
Total Ichthyoplankton Yolk-Sac Larvae	D.3-2
Total Ichthyoplankton Post Yolk-Sac Larvae	D.3-3
Total Ichthyoplankton Juveniles	D.3-4
Striped Bass Eggs (Surface)	D.3-5
Striped Bass Eggs (Middepth)	D.3-6
Striped Bass Eggs (Bottom)	D.3-7
Striped Bass Yolk-Sac Larvae (Surface)	D.3-8
Striped Bass Yolk-Sac Larvae (Middepth)	D.3-9
Striped Bass Yolk-Sac Larvae (Bottom)	D.3-10
Striped Bass Post Yolk-Sac Larvae (Surface)	D.3-11
Striped Bass Post Yolk-Sac Larvae (Middepth)	D.3-12
Striped Bass Post Yolk-Sac Larvae (Bottom)	D.3-13
Striped Bass Juveniles	D.3-14

Title	Number
White Perch Eggs	D.3-15
White Perch Yolk-Sac Larvae	D.3-16
White Perch Post Yolk-Sac Larvae	D.3-17
Alosa spp. Eggs	D.3-18
Alosa spp. Yolk-Sac Larvae	D.3-19
Alosa spp. Post Yolk-Sac Larvae	D.3-20
Alosa spp. Juveniles	D.3-21
Atlantic Tomcod Yolk-Sac Larvae	D.3-22
Atlantic Tomcod Post Yolk-Sac Larvae	D.3-23
Atlantic Tomcod Juveniles	D.3-24
Bay Anchovy Eggs	D.3-25
Bay Anchovy Yolk-Sac Larvae	D.3-26
Bay Anchovy Post Yolk-Sac Larvae	D.3-27
Bay Anchovy Juveniles	D.3-28

BLE D.1-1. DENSITIES (No./liter) OF TOTAL MICROZOOPLANKTON COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

Date	Station A	B	C	D	E	F	G	Mean
				Day				
5 MAY	6.9	8.3	2.4	5.9	5.5	4.1	9.8	6.1
17 MAY	15.1	33.0	34.8	33.2	23.4	36.5	40.7	31.0
31 MAY	102.9	22.7	99.8	76.0	133.6	115.9	97.1	92.6
14 JUN	60.7	85.3	39.5	111.4	56.8	95.7	61.5	73.0
26 JUN	31.0	39.8	58.9	34.6	80.8	129.8	87.6	66.1
10 JUL	53.8	20.8	121.6	156.4	106.5	186.4	260.1	129.4
25 JUL	161.9	195.2	88.6	152.2	169.1	134.9	64.4	138.0
8 AUG	180.3	65.4	37.1	16.7	13.9	16.3	10.4	48.6
22 AUG	80.5	10.3	31.0	11.3	21.4	13.5	12.3	25.8
5 SEP	22.8	24.2	154.0	156.2	48.7	24.9	54.4	69.3
18 SEP	48.1	16.7	19.5	31.4	42.2	70.1	44.4	38.9
5 OCT	58.3	41.1	104.5	80.1	84.7	51.7	39.7	65.7
17 OCT	36.3	47.6	44.6	14.9	19.3	23.8	21.8	29.8
31 OCT	14.8	16.5	15.3	43.3	10.5	26.5	27.5	22.0
14 NOV	19.1	9.6	9.4	12.4	116.3	21.2	8.0	28.0
[illegible] NOV	5.1	9.0	12.7	23.8	8.2	9.1	14.3	11.7
[illegible]ean	56.1	40.3	54.6	60.0	58.8	60.0	53.4	54.7
				Night				
3 MAY	4.2	7.1	6.1	5.6	7.7	18.9	6.9	8.1
17 MAY	11.4	24.5	28.7	34.2	42.0	74.3	53.4	38.3
30 MAY	77.6	55.6	54.1	127.9	127.9	90.0	105.1	91.2
14 JUN	84.8	38.7	30.8	71.3	82.9	29.6	61.3	57.0
26 JUN	12.8	16.5	8.9	10.6	26.3	89.2	44.4	29.8
10 JUL	119.2	65.4	68.8	116.3	69.9	117.4	116.9	96.3
25 JUL	44.4	47.9	12.4	51.5	81.1	128.9	98.2	66.3
8 AUG	22.8	16.1	17.5	17.1	15.9	38.1	4.7	18.9
20 AUG	16.3	0.0	34.4	19.6	53.0	28.9	50.3	28.9
6 SEP	30.0	23.6	25.5	29.5	32.2	50.3	29.1	31.4
19 SEP	34.8	29.3	24.2	18.1	7.9	24.8	8.0	21.0
4 OCT	40.5	54.8	53.2	43.6	26.3	22.2	31.2	38.8
18 OCT	12.4	12.1	17.1	19.6	12.5	13.0	14.2	14.4
1 NOV	29.1	20.0	28.5	14.2	21.6	17.9	21.8	21.9
15 NOV	17.4	10.3	7.2	11.0	14.1	9.6	10.0	11.4
29 NOV	20.1	10.0	17.1	8.0	4.6	8.6	13.5	11.7
Mean	36.1	27.0	27.2	37.4	39.1	47.6	41.8	36.6

TABLE D.1-2 DENSITIES (No./liter) OF TOTAL CRUSTACEANS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

Date	Station A	B	C	D	E	F	G	Mean
				Day				
5 MAY	6.3	5.9	2.0	4.6	4.6	3.1	8.1	4.9
17 MAY	3.9	4.1	13.8	10.4	3.9	10.4	15.9	8.9
31 MAY	21.8	5.1	33.6	28.9	46.3	36.9	27.3	28.5
14 JUN	57.0	79.8	37.7	106.5	51.3	83.5	57.0	67.6
26 JUN	30.6	39.0	58.1	34.6	79.6	129.1	87.4	65.5
10 JUL	49.3	20.4	116.9	151.8	72.7	139.5	232.8	111.9
25 JUL	142.2	180.3	79.0	144.2	149.3	120.6	57.7	124.8
8 AUG	168.7	62.7	31.4	14.3	12.8	11.0	8.1	44.1
22 AUG	77.8	9.4	30.0	10.7	20.3	11.2	11.4	24.4
5 SEP	20.8	23.0	141.6	147.9	41.6	22.6	51.2	64.1
18 SEP	32.6	9.8	15.9	29.1	34.0	50.9	35.5	29.7
5 OCT	53.0	37.5	97.6	77.2	79.9	48.5	35.7	61.3
17 OCT	35.0	44.8	42.2	13.8	19.3	21.0	20.4	28.1
31 OCT	13.1	14.7	14.8	37.0	9.8	24.0	26.7	20.0
14 NOV	18.3	8.9	8.7	11.4	110.6	20.3	7.8	26.6
28 NOV	5.0	8.6	12.4	23.2	7.5	7.9	13.7	11.2
Mean	46.0	34.6	46.0	52.9	46.5	46.3	43.5	45.1
				Night				
3 MAY	2.5	4.9	4.9	4.4	6.9	16.9	6.7	6.7
17 MAY	5.3	4.9	9.2	8.5	16.5	29.1	32.2	15.1
30 MAY	23.8	16.9	23.8	43.2	30.6	26.5	30.6	27.9
14 JUN	78.1	36.3	28.9	66.0	76.8	25.4	50.3	51.7
26 JUN	12.2	16.5	8.9	10.4	25.7	87.0	44.4	29.3
10 JUL	113.9	62.3	65.6	110.0	59.7	80.5	93.1	83.6
25 JUL	41.2	42.6	11.0	46.6	75.6	119.2	90.0	60.9
8 AUG	21.6	13.6	16.5	15.5	15.1	33.2	3.7	17.0
20 AUG	14.5	0.0	32.8	18.7	50.5	26.5	46.8	27.1
6 SEP	29.1	23.2	24.8	27.5	29.7	42.8	26.7	29.1
19 SEP	33.4	27.9	23.6	17.5	7.8	19.3	7.3	19.6
4 OCT	38.5	51.9	50.7	41.6	24.5	18.8	29.7	36.5
18 OCT	11.9	11.1	17.0	19.1	12.2	12.4	13.7	13.9
1 NOV	24.0	17.9	22.4	10.9	19.0	16.0	18.3	18.4
15 NOV	13.3	6.2	5.9	5.8	9.2	8.4	9.3	8.3
29 NOV	19.9	9.9	16.8	7.9	4.3	8.6	13.1	11.5
Mean	30.2	21.6	22.7	28.3	29.0	35.7	32.2	28.5

TABLE D.1-3 DENSITIES (No./liter) OF TOTAL ROTIFERS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

Date	Station A	B	C	D	E	F	G	Mean
				Day				
5 MAY	0.6	2.4	0.4	1.3	0.9	1.0	1.6	1.2
17 MAY	11.2	28.9	21.0	22.8	19.5	26.1	24.7	22.0
31 MAY	81.1	17.6	66.2	47.0	87.4	79.0	69.8	64.0
14 JUN	3.7	5.5	1.8	4.9	5.5	12.2	4.5	5.4
26 JUN	0.4	0.7	0.8	0.0	1.0	0.0	0.2	0.4
10 JUL	3.5	0.2	3.7	2.6	30.2	45.2	24.2	15.7
25 JUL	19.8	12.0	9.4	6.9	19.1	13.6	0.4	11.6
8 AUG	10.2	1.0	0.0	0.0	0.0	0.0	0.0	1.6
22 AUG	2.0	0.7	0.7	0.1	0.8	0.0	0.3	0.7
5 SEP	0.0	0.8	11.4	7.1	1.6	0.7	1.2	3.3
18 SEP	14.9	5.1	2.7	1.8	7.1	17.5	7.7	8.1
5 OCT	4.7	2.8	6.7	2.7	4.5	2.4	3.5	3.9
17 OCT	0.8	2.8	2.4	0.9	0.0	2.2	1.2	1.5
31 OCT	1.5	1.7	0.5	6.1	0.5	1.6	0.6	1.8
14 NOV	0.8	0.7	0.5	1.0	5.7	0.9	0.1	1.4
[illegible] NOV	0.1	0.2	0.1	0.2	0.0	0.4	0.0	0.1
[illegible]ean	9.7	5.2	8.0	6.6	11.5	12.7	8.8	8.9
				Night				
3 MAY	1.6	2.0	1.2	1.2	0.6	2.0	0.2	1.3
17 MAY	6.1	19.6	19.6	25.7	25.5	45.2	21.2	23.2
30 MAY	53.8	38.5	30.3	84.7	97.4	63.6	74.5	63.3
14 JUN	6.6	2.4	1.8	5.3	6.1	4.3	11.0	5.4
26 JUN	0.6	0.0	0.0	0.2	0.1	0.0	0.0	0.1
10 JUL	1.6	1.0	1.4	0.8	4.7	26.7	13.6	7.1
25 JUL	1.8	2.4	0.2	2.9	3.9	6.5	6.5	3.5
8 AUG	0.2	0.0	0.0	0.0	0.0	0.4	0.0	0.1
20 AUG	1.2	0.0	1.0	0.4	1.2	0.0	0.4	0.6
6 SEP	0.2	0.0	0.4	0.4	0.8	6.5	1.2	1.4
19 SEP	0.8	0.8	0.2	0.6	0.0	3.7	0.1	0.9
4 OCT	1.4	2.4	2.0	1.6	1.2	3.0	1.2	1.8
18 OCT	0.5	0.8	0.1	0.5	0.3	0.4	0.2	0.4
1 NOV	5.1	2.0	6.1	3.3	2.6	1.9	3.5	3.5
15 NOV	4.1	4.1	1.3	5.2	4.9	1.2	0.6	3.1
29 NOV	0.2	0.1	0.3	0.0	0.2	0.0	0.4	0.2
Mean	5.4	4.8	4.1	8.3	9.3	10.3	8.4	7.2

TABLE D.1-4 DENSITIES (No./liter) OF TOTAL COPEPODS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

Date	Station A	B	C	D	E	F	G	Mean
				Day				
5 MAY	6.3	5.9	2.0	4.6	4.6	3.1	8.1	4.9
17 MAY	3.9	4.1	13.6	10.4	3.7	10.2	15.9	8.8
31 MAY	18.1	5.0	33.0	27.5	45.4	35.6	25.5	27.2
14 JUN	54.8	76.4	34.2	99.6	48.9	75.2	53.8	63.3
26 JUN	30.1	37.8	57.2	33.2	78.8	129.1	87.0	64.8
10 JUL	48.7	20.4	116.9	150.1	71.7	139.1	232.4	111.3
25 JUL	142.2	179.5	79.0	143.0	146.3	119.0	56.8	123.7
8 AUG	168.3	62.7	30.8	14.1	12.8	10.4	7.9	43.9
22 AUG	76.8	8.7	28.7	9.8	18.3	10.7	10.4	23.3
5 SEP	20.6	22.8	141.4	147.9	40.1	22.6	49.8	63.6
18 SEP	31.2	9.6	15.1	28.1	33.6	50.5	34.8	29.0
5 OCT	52.5	37.3	97.4	77.2	79.9	48.3	35.7	61.2
17 OCT	34.4	44.0	42.0	13.6	18.7	20.8	19.8	27.6
31 OCT	13.0	14.6	14.8	37.0	9.8	24.0	26.7	20.0
14 NOV	18.3	8.8	8.7	11.3	110.6	20.2	7.8	26.5
28 NOV	5.0	8.6	12.4	23.2	7.4	7.9	13.7	11.2
Mean	45.3	34.1	45.5	51.9	45.7	45.4	42.9	44.4
				Night				
3 MAY	2.4	4.9	4.9	4.4	6.9	16.9	6.7	6.7
17 MAY	4.7	4.8	8.9	8.3	15.5	28.9	31.9	14.7
30 MAY	23.0	16.3	23.4	41.8	29.1	25.7	29.9	27.0
14 JUN	71.9	33.0	26.1	61.9	72.5	23.7	45.6	47.8
26 JUN	11.6	15.7	8.7	9.6	25.5	87.0	43.8	28.8
10 JUL	113.1	62.1	65.4	110.0	59.5	79.3	92.7	83.1
25 JUL	39.5	38.3	10.4	45.6	75.4	117.3	89.8	59.5
8 AUG	21.0	12.4	15.9	14.9	14.1	32.0	3.3	16.2
20 AUG	13.8	0.0	30.8	17.3	46.9	25.9	44.6	25.6
6 SEP	28.9	22.2	24.6	27.1	29.7	42.6	26.5	28.8
19 SEP	33.0	26.9	23.2	16.9	7.8	19.1	7.2	19.2
4 OCT	38.5	51.1	50.7	41.6	24.5	18.8	29.7	36.4
18 OCT	11.8	10.9	16.4	18.5	11.9	12.2	13.1	13.6
1 NOV	24.0	17.9	22.4	10.9	19.0	15.9	18.3	18.3
15 NOV	13.3	6.2	5.9	5.7	9.2	8.3	9.2	8.3
29 NOV	19.9	9.9	16.8	7.9	4.3	8.6	13.1	11.5
Mean	29.4	20.8	22.2	27.6	28.2	35.1	31.6	27.9

TABLE D.1-5 DENSITIES (No./liter) OF TOTAL ADULT COPEPODS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

Date	Station A	B	C	D	E	F	G	Mean
				Day				
5 MAY	3.3	1.4	1.8	1.8	1.3	1.2	2.2	1.9
17 MAY	1.8	1.2	3.7	2.8	1.4	2.8	5.1	2.7
31 MAY	0.2	0.5	2.8	7.1	2.0	1.6	1.2	2.2
14 JUN	3.3	4.1	8.6	7.7	5.3	15.7	6.9	7.4
26 JUN	5.1	8.5	16.5	8.1	10.6	5.7	5.5	8.6
10 JUL	11.2	9.6	11.6	7.1	7.9	4.3	7.1	8.4
25 JUL	6.1	15.9	10.2	19.4	12.0	15.1	25.1	14.8
8 AUG	13.0	12.4	11.2	4.5	6.9	5.7	6.5	8.6
22 AUG	13.9	3.0	3.5	4.4	4.2	5.6	4.4	5.5
5 SEP	2.7	0.6	2.4	2.9	3.5	0.9	2.1	2.2
18 SEP	1.6	1.4	1.6	2.0	1.8	4.1	0.0	1.8
5 OCT	1.8	2.5	1.8	1.2	1.8	3.3	5.3	2.5
17 OCT	5.3	0.4	3.3	0.6	2.0	1.2	1.0	2.0
31 OCT	4.2	4.1	3.2	0.5	2.3	3.5	3.1	3.0
14 NOV	6.3	2.3	2.8	1.3	0.8	1.4	3.9	2.7
[illegible] NOV	1.1	0.5	3.0	0.4	1.0	0.8	0.8	1.1
[illegible]ean	5.1	4.3	5.5	4.5	4.1	4.6	5.0	4.7
				Night				
3 MAY	1.3	1.6	2.7	2.7	3.3	9.4	3.9	3.5
17 MAY	2.6	1.7	1.9	1.8	2.0	4.7	3.8	2.7
30 MAY	1.8	1.8	4.5	3.1	1.4	1.6	1.4	2.2
14 JUN	7.2	3.5	0.8	5.1	13.4	3.3	6.7	5.7
26 JUN	2.9	5.3	2.8	2.6	3.9	6.1	4.5	4.0
10 JUL	9.4	6.9	4.1	8.4	11.4	15.1	7.7	9.0
25 JUL	6.7	4.9	3.9	7.9	21.2	23.0	25.3	13.3
8 AUG	5.5	2.2	2.6	1.8	2.2	8.6	0.6	3.4
20 AUG	3.9	0.0	6.3	5.7	17.1	12.8	15.9	8.8
6 SEP	2.5	2.0	1.8	0.8	2.4	1.2	2.9	1.9
19 SEP	3.5	3.1	2.2	1.8	1.4	1.4	1.6	2.2
4 OCT	2.7	2.2	3.9	5.9	2.7	1.1	2.7	3.0
18 OCT	2.1	4.7	1.4	1.7	2.2	2.2	2.8	2.5
1 NOV	2.4	3.7	3.7	4.0	2.7	3.0	2.6	3.1
15 NOV	6.1	1.9	2.6	1.6	3.7	1.2	2.9	2.9
29 NOV	4.2	3.5	2.1	0.9	0.7	2.1	2.6	2.3
Mean	4.0	3.1	3.0	3.5	5.7	6.1	5.5	4.4

TABLE D.1-6 DENSITIES (No./liter) OF TOTAL COPEPODIDS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

Date	Station A	B	C	D	E	F	G	Mean
				Day				
5 MAY	1.2	2.0	0.2	0.8	0.5	0.0	0.6	0.8
17 MAY	0.2	0.0	0.2	0.0	0.2	0.6	0.8	0.3
31 MAY	0.8	0.6	0.4	1.4	0.8	0.6	0.8	0.8
14 JUN	0.6	0.6	0.2	1.0	0.6	0.4	1.2	0.7
26 JUN	0.0	0.6	1.4	0.8	1.2	1.0	0.6	0.8
10 JUL	0.0	0.2	0.0	3.1	0.0	0.0	0.0	0.5
25 JUL	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.4
8 AUG	0.0	4.1	2.2	0.8	0.0	1.6	0.0	1.2
22 AUG	3.1	0.6	2.7	0.7	0.6	0.5	0.6	1.3
5 SEP	4.5	2.6	10.2	7.3	7.7	2.6	8.4	6.2
18 SEP	1.0	0.8	1.4	1.0	1.6	1.8	0.8	1.2
5 OCT	2.8	3.5	5.1	1.4	4.1	3.5	3.1	3.3
17 OCT	5.3	0.4	1.2	1.4	1.8	0.8	0.4	1.6
31 OCT	0.8	2.0	3.1	0.5	1.3	2.7	2.2	1.8
14 NOV	4.5	1.2	1.4	2.5	1.0	4.2	2.8	2.5
28 NOV	1.4	2.1	4.8	5.1	4.8	2.9	7.2	4.1
Mean	1.6	1.3	2.2	1.8	1.8	1.5	1.8	1.7
				Night				
3 MAY	0.3	1.2	0.2	0.5	1.8	3.5	0.4	1.1
17 MAY	0.0	0.5	0.4	0.0	0.2	0.2	1.0	0.3
30 MAY	1.0	0.2	0.2	0.4	0.6	0.2	0.4	0.4
14 JUN	2.0	0.6	0.4	2.2	0.6	1.5	0.6	1.1
26 JUN	0.6	0.0	0.2	1.6	0.9	0.8	0.0	0.6
10 JUL	0.2	0.0	0.0	0.0	0.8	0.0	2.0	0.4
25 JUL	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
8 AUG	1.2	0.2	0.0	0.2	0.8	0.6	0.6	0.5
20 AUG	1.0	0.0	1.0	1.6	2.2	1.0	3.1	1.4
6 SEP	3.7	4.3	2.6	3.7	4.3	7.7	2.7	4.1
19 SEP	2.8	1.2	1.4	0.6	0.9	1.6	1.4	1.4
4 OCT	3.7	2.4	2.4	2.7	1.2	1.8	2.6	2.4
18 OCT	1.4	1.8	1.3	0.5	1.2	2.4	4.1	1.8
1 NOV	0.8	0.4	0.6	0.7	1.0	1.1	0.6	0.8
15 NOV	0.0	0.0	0.4	0.6	0.2	0.9	0.5	0.4
29 NOV	5.8	2.0	4.0	1.6	0.7	2.4	4.3	3.0
Mean	1.5	0.9	1.0	1.1	1.1	1.6	1.5	1.2

TABLE D.1-7 DENSITIES (No./liter) OF TOTAL COPEPOD NAUPLII COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

Date	Station A	B	C	D	E	F	G	Mean
				Day				
5 MAY	1.8	2.4	0.0	1.9	2.8	1.8	5.3	2.3
17 MAY	1.8	2.8	9.8	7.5	2.0	6.7	10.0	5.8
31 MAY	17.1	3.9	29.7	19.0	42.6	33.4	23.4	24.2
14 JUN	50.9	71.7	25.5	90.9	43.0	59.1	45.6	55.2
26 JUN	25.1	28.7	39.3	24.3	67.0	122.4	80.9	55.4
10 JUL	37.5	10.6	105.3	139.9	63.8	134.9	225.3	102.5
25 JUL	136.1	163.6	68.9	123.7	131.4	103.9	31.8	108.5
8 AUG	155.2	46.2	17.3	8.8	5.9	3.1	1.4	34.0
22 AUG	59.9	5.1	22.6	4.7	13.6	4.6	5.4	16.5
5 SEP	13.4	19.7	128.8	137.7	28.9	19.1	39.3	55.3
18 SEP	28.5	7.3	12.0	25.1	30.1	44.6	34.0	26.0
5 OCT	47.9	31.4	90.4	74.6	73.9	41.6	27.3	55.3
17 OCT	23.8	43.2	37.5	11.6	14.9	18.7	18.3	24.0
31 OCT	8.1	8.4	8.4	36.0	6.1	17.9	21.4	15.2
14 NOV	7.5	5.2	4.6	7.4	108.8	14.6	1.2	21.3
[illegible] NOV	2.4	5.9	4.7	17.7	1.6	4.2	5.6	6.0
[illegible]ean	38.6	28.5	37.8	45.7	39.8	39.4	36.0	38.0
				Night				
3 MAY	0.8	2.0	2.0	1.1	1.8	4.1	2.4	2.0
17 MAY	2.0	2.5	6.5	6.5	13.2	24.0	27.1	11.7
30 MAY	20.2	14.3	18.7	38.3	27.1	23.8	28.1	24.4
14 JUN	62.6	28.9	24.9	54.6	58.5	19.0	38.3	41.0
26 JUN	8.1	10.4	5.7	5.3	20.7	80.1	39.3	24.2
10 JUL	103.5	55.2	61.3	101.7	47.3	64.2	82.9	73.7
25 JUL	32.8	33.2	6.5	37.7	54.2	94.3	64.6	46.2
8 AUG	14.3	10.0	13.2	12.8	11.0	22.8	2.0	12.3
20 AUG	9.0	0.0	23.4	10.0	27.5	12.0	25.7	15.4
6 SEP	22.8	15.9	20.2	22.6	23.0	33.6	21.0	22.7
19 SEP	26.7	22.6	19.6	14.5	5.5	16.1	4.2	15.6
4 OCT	32.2	46.5	44.4	33.0	20.6	15.9	24.5	31.0
18 OCT	8.3	4.4	13.6	16.3	8.4	7.5	6.3	9.3
1 NOV	20.8	13.9	18.1	6.2	15.3	11.8	15.1	14.4
15 NOV	7.2	4.3	2.8	3.5	5.3	6.1	5.8	5.0
29 NOV	9.9	4.4	10.7	5.4	2.9	4.0	6.2	6.2
Mean	23.8	16.8	18.2	23.1	21.4	27.5	24.6	22.2

TABLE D.1-8 DENSITIES (No./liter) OF *ACARTIA TONSA* COPEPODIDS AND ADULTS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

Date	Station A	B	C	D	E	F	G	Mean
				Day				
5 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
10 JUL	2.2	2.2	3.5	2.0	4.3	2.7	3.5	2.9
25 JUL	2.4	14.7	6.5	17.5	12.0	14.9	23.6	13.1
8 AUG	10.8	12.2	10.6	3.5	5.9	5.5	4.9	7.6
22 AUG	13.4	0.9	3.0	2.3	2.3	3.5	3.4	4.1
5 SEP	4.3	2.8	12.6	8.8	8.8	3.1	8.2	6.9
18 SEP	2.0	1.4	2.9	2.0	2.5	3.5	0.4	2.1
5 OCT	2.4	3.9	5.1	1.2	3.1	4.5	2.0	3.2
17 OCT	5.5	0.2	3.5	0.5	3.7	1.2	0.8	2.2
31 OCT	0.0	0.0	0.1	0.2	0.3	1.6	1.0	0.5
14 NOV	0.0	0.0	0.0	0.1	0.8	0.3	0.2	0.2
28 NOV	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.1
Mean	2.7	2.4	3.0	2.4	2.8	2.6	3.0	2.7
				Night				
3 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
10 JUL	2.4	0.6	0.8	0.8	1.2	8.4	1.6	2.3
25 JUL	4.3	1.4	3.1	4.9	17.5	21.4	22.4	10.7
8 AUG	2.8	0.8	1.0	1.2	0.2	7.5	0.6	2.0
20 AUG	0.2	0.0	0.6	0.6	12.4	10.4	13.6	5.4
6 SEP	3.1	3.1	1.8	1.2	3.5	8.1	4.3	3.6
19 SEP	1.2	0.4	0.6	0.4	0.5	1.8	1.8	1.0
4 OCT	2.2	1.2	2.4	3.5	0.4	2.8	3.9	2.3
18 OCT	0.5	0.1	0.2	0.3	0.1	0.6	0.5	0.3
1 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29 NOV	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Mean	1.1	0.5	0.7	0.8	2.2	3.8	3.0	1.7

BLE D.1-9 DENSITIES (No./liter) OF EURYTEMORA AFFINIS COPEPODIDS AND ADULTS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

Date	Station A	B	C	D	E	F	G	Mean
				Day				
5 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
17 MAY	0.6	0.0	2.7	2.4	0.6	0.8	2.0	1.3
31 MAY	0.2	0.3	0.2	0.6	0.6	0.2	1.0	0.5
14 JUN	2.8	3.3	7.1	4.1	2.2	7.1	4.7	4.5
26 JUN	0.2	0.2	1.6	1.4	1.4	3.5	2.8	1.6
10 JUL	8.4	6.9	7.1	5.1	2.4	0.8	3.3	4.9
25 JUL	3.3	0.4	3.7	0.6	2.8	0.2	0.4	1.6
8 AUG	2.0	4.1	2.9	1.4	0.8	1.8	1.6	2.1
22 AUG	3.1	1.1	2.7	0.6	1.3	1.3	1.0	1.6
5 SEP	2.4	0.4	0.0	1.2	2.2	0.4	2.3	1.3
18 SEP	0.6	0.6	0.0	1.0	0.6	1.8	0.4	0.7
5 OCT	2.0	2.0	1.4	1.4	2.7	2.2	5.5	2.5
17 OCT	5.1	0.2	1.0	1.3	0.0	0.6	0.4	1.2
31 OCT	3.8	3.8	5.5	0.8	2.8	4.3	3.9	3.5
14 NOV	7.7	3.1	3.3	3.4	1.0	5.0	6.2	4.2
[illegible] NOV	2.0	2.6	7.3	5.5	5.6	3.3	7.6	4.8
[illegible]ean	2.8	1.8	2.9	1.9	1.7	2.1	2.7	2.3
				Night				
3 MAY	0.1	0.2	0.0	0.0	0.2	0.0	0.0	0.1
17 MAY	0.2	0.6	1.2	1.2	0.6	3.1	1.8	1.3
30 MAY	0.6	0.8	1.8	1.0	0.2	0.0	0.0	0.6
14 JUN	5.8	0.8	0.6	1.6	6.9	1.9	3.9	3.1
26 JUN	0.0	0.2	0.0	1.0	1.2	3.9	3.3	1.4
10 JUL	4.7	5.1	2.8	5.5	8.6	6.3	5.5	5.5
25 JUL	1.6	1.6	0.8	1.8	2.2	1.0	2.2	1.6
8 AUG	1.6	0.4	0.2	0.2	1.4	1.0	0.6	0.8
20 AUG	2.7	0.0	2.0	1.8	3.0	2.9	3.9	2.3
6 SEP	2.7	3.3	2.2	3.0	3.1	0.8	1.0	2.3
19 SEP	3.5	3.3	3.0	2.0	1.7	1.2	1.1	2.3
4 OCT	3.7	2.4	3.9	4.3	3.0	0.2	1.4	2.7
18 OCT	1.9	5.0	2.2	1.2	2.9	2.9	5.8	3.1
1 NOV	1.6	3.1	2.9	2.1	3.1	3.0	2.7	2.6
15 NOV	4.6	0.5	1.7	1.2	1.7	1.8	2.4	2.0
29 NOV	9.2	4.9	5.9	2.4	1.0	4.3	6.6	4.9
Mean	2.8	2.0	2.0	1.9	2.6	2.1	2.6	2.3

TABLE D.1-10 DENSITIES (No./liter) OF TOTAL CLADOCERANS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

Date	Station A	B	C	D	E	F	G	Mean
				Day				
5 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.2	0.0	0.2	0.2	0.0	0.1
31 MAY	3.7	0.1	0.6	1.4	0.8	1.2	1.8	1.4
14 JUN	2.2	3.5	3.5	6.9	2.4	8.4	3.3	4.3
26 JUN	0.4	1.2	0.8	1.4	0.8	0.0	0.2	0.7
10 JUL	0.6	0.0	0.0	0.0	0.2	0.0	0.0	0.1
25 JUL	0.0	0.8	0.0	0.2	0.0	0.0	0.0	0.1
8 AUG	0.0	0.0	0.4	0.0	0.0	0.2	0.0	0.1
22 AUG	0.2	0.7	1.3	0.8	1.9	0.2	0.9	0.9
5 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 OCT	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 OCT	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0
28 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean	0.5	0.4	0.4	0.7	0.4	0.6	0.4	0.5
				Night				
3 MAY	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.6	0.1	0.3	0.2	1.0	0.2	0.3	0.4
30 MAY	0.8	0.6	0.4	1.4	1.4	0.8	0.6	0.9
14 JUN	6.2	3.3	2.9	4.1	4.3	1.6	4.7	3.9
26 JUN	0.6	0.8	0.2	0.8	0.2	0.0	0.6	0.5
10 JUL	0.8	0.2	0.2	0.0	0.2	0.0	0.2	0.2
25 JUL	1.6	4.3	0.6	1.0	0.0	0.0	0.2	1.1
8 AUG	0.6	0.8	0.6	0.6	0.6	0.0	0.2	0.5
20 AUG	0.6	0.0	1.8	1.4	3.3	0.4	1.4	1.3
6 SEP	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.1
19 SEP	0.0	0.4	0.3	0.4	0.0	0.0	0.0	0.2
4 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 OCT	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
1 NOV	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
15 NOV	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0
29 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean	0.8	0.7	0.5	0.6	0.7	0.2	0.5	0.6

LE D.1-11 DENSITIES (No./liter) OF BOSMINA LONGIROSTRIS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

Date	Station A	B	C	D	E	F	G	Mean
				Day				
5 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
31 MAY	1.0	0.1	0.2	1.0	0.4	0.8	0.6	0.6
14 JUN	1.2	0.4	1.8	1.6	0.6	5.3	1.6	1.8
26 JUN	0.4	0.2	0.4	0.0	0.6	0.0	0.0	0.2
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 AUG	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
22 AUG	0.0	0.2	0.1	0.1	0.3	0.1	0.0	0.1
5 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ean	0.2	0.1	0.2	0.2	0.1	0.4	0.1	0.2
				Night				
3 MAY	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.6	0.0	0.2	0.2	0.4	0.0	0.2	0.2
30 MAY	0.4	0.2	0.4	0.6	0.4	0.6	0.4	0.4
14 JUN	0.3	1.0	0.6	1.2	1.0	0.7	3.1	1.1
26 JUN	0.4	0.4	0.0	0.2	0.1	0.0	0.2	0.2
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	1.2	0.4	0.2	0.0	0.2	0.3
6 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 OCT	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
1 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 NOV	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
29 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean	0.1	0.1	0.2	0.2	0.1	0.1	0.3	0.1

TABLE D.1-12 DENSITIES (No./liter) OF DIAPHANOSOMA BRACHYURUM COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

Date	Station A	B	C	D	E	F	G	Mean
				Day				
5 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.1
26 JUN	0.0	0.1	0.0	0.2	0.0	0.0	0.2	0.1
10 JUL	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.1
25 JUL	0.0	0.8	0.0	0.2	0.0	0.0	0.0	0.1
8 AUG	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.1
22 AUG	0.2	0.5	1.2	0.7	1.6	0.1	0.9	0.8
5 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1
				Night				
3 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
10 JUL	0.8	0.0	0.2	0.0	0.0	0.0	0.0	0.1
25 JUL	1.6	4.3	0.6	1.0	0.0	0.0	0.2	1.1
8 AUG	0.6	0.8	0.6	0.6	0.6	0.0	0.2	0.5
20 AUG	0.6	0.0	0.4	1.0	3.1	0.2	1.2	0.9
6 SEP	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.1
19 SEP	0.0	0.4	0.3	0.4	0.0	0.0	0.0	0.2
4 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean	0.2	0.4	0.1	0.2	0.2	0.0	0.1	0.2

LE D.1-13 DENSITIES (No./liter) OF CYCLOPS BICUSPIDATUS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

Date	Station A	B	C	D	E	F	G	Mean
				Day				
5 MAY	0.0	0.2	0.2	0.2	0.0	0.2	0.0	0.1
17 MAY	0.0	0.2	0.0	0.2	0.2	1.4	1.2	0.5
31 MAY	0.0	0.0	0.0	0.6	0.0	0.2	0.0	0.1
14 JUN	0.0	0.0	0.2	0.8	0.0	0.2	0.0	0.2
26 JUN	0.0	0.0	0.2	0.0	0.2	0.0	0.0	0.1
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ean	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1
				Night				
3 MAY	0.2	0.0	0.0	0.1	0.2	0.4	0.0	0.1
17 MAY	0.8	0.3	0.5	0.2	0.0	0.4	0.7	0.4
30 MAY	0.2	0.0	0.2	0.0	0.0	0.2	0.0	0.1
14 JUN	0.1	0.4	0.0	0.2	0.0	0.0	0.0	0.1
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0

TABLE D.1-14 DENSITIES (No./liter) OF HALICYCLOPS FOSTERI COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

Date	Station A	B	C	D	E	F	G	Mean
				Day				
5 MAY	0.6	0.0	0.8	0.6	0.6	0.6	1.0	0.6
17 MAY	0.4	0.4	0.4	0.0	0.2	0.2	0.8	0.3
31 MAY	0.0	0.1	1.2	3.3	0.6	0.6	0.0	0.8
14 JUN	0.2	0.6	0.6	1.4	2.7	7.1	2.0	2.1
26 JUN	4.9	8.1	14.5	5.1	4.1	1.0	0.4	5.4
10 JUL	0.4	0.0	0.2	0.0	0.0	0.0	0.0	0.1
25 JUL	0.2	0.0	0.0	0.0	0.0	0.0	0.4	0.1
8 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 AUG	0.0	0.2	0.0	0.2	0.1	0.0	0.0	0.1
5 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.1
31 OCT	0.7	0.6	0.1	0.0	0.2	0.0	0.0	0.2
14 NOV	1.2	0.3	0.2	0.3	0.0	0.2	0.0	0.3
28 NOV	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Mean	0.5	0.7	1.1	0.7	0.5	0.6	0.3	0.6
				Night				
3 MAY	0.7	0.4	0.6	1.6	1.6	1.0	1.6	1.1
17 MAY	1.2	0.5	0.1	0.0	0.2	0.2	0.7	0.4
30 MAY	0.2	0.6	1.6	1.6	0.0	0.4	0.2	0.7
14 JUN	1.0	1.2	0.2	0.8	4.1	1.3	2.0	1.5
26 JUN	2.7	3.9	1.6	0.2	1.8	0.2	0.8	1.6
10 JUL	0.0	0.2	0.0	0.4	0.2	0.0	0.0	0.1
25 JUL	0.2	0.6	0.0	0.2	0.4	0.0	0.0	0.2
8 AUG	0.2	0.0	0.2	0.0	0.4	0.0	0.0	0.1
20 AUG	0.2	0.0	0.6	0.2	0.0	0.0	0.0	0.1
6 SEP	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
19 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 OCT	0.0	0.2	0.2	0.3	0.2	0.2	0.0	0.2
1 NOV	0.6	0.6	0.6	1.2	0.6	0.5	0.2	0.6
15 NOV	0.5	1.0	1.1	0.6	1.3	0.0	0.6	0.7
29 NOV	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Mean	0.5	0.6	0.4	0.5	0.7	0.2	0.4	0.5

TABLE D.2-1 MEAN DENSITIES (No./1,000 m^3) OF TOTAL MACROZOOPLANKTON COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Date	Station A	B	C	D	E	F	G	Mean
				Day				
5 MAY	5,209.0	1,855.3	5,048.8	765.9	1,976.0	2,746.0	780.9	2,626.0
17 MAY	2,165.1	16,572.7	2,788.7	6,491.9	6,522.7	1,790.9	3,563.7	5,699.4
31 MAY	6,542.6	2,484.4	2,286.7	10,331.3	3,368.7	1,907.5	1,986.7	4,129.7
14 JUN	6,596.2	5,623.2	13,319.1	5,759.0	11,087.2	4,297.7	14,515.1	8,742.5
26 JUN	4,921.6	4,276.3	4,277.8	2,976.1	1,729.8	2,207.3	2,237.9	3,232.4
10 JUL	3,561.9	1,946.0	2,224.8	2,982.8	1,674.3	760.2	873.1	2,003.3
25 JUL	1,543.6	2,191.0	1,793.5	2,291.5	1,888.1	649.4	675.0	1,576.0
8 AUG	1,020.1	2,760.3	1,401.0	1,248.9	830.8	1,589.9	1,494.5	1,477.9
22 AUG	634.4	751.6	2,247.5	1,811.9	3,086.4	1,414.6	1,094.3	1,577.2
5 SEP	851.9	1,649.0	536.2	1,963.0	645.0	2,379.5	253.9	1,186.6
18 SEP	868.1	1,494.5	1,638.1	3,503.4	553.2	576.6	459.7	1,299.1
5 OCT	629.4	1,159.9	820.5	909.8	2,789.2	1,162.6	1,090.2	1,223.1
17 OCT	1,089.4	1,206.6	593.5	3,024.9	943.9	1,989.4	1,426.4	1,467.7
31 OCT	3,803.8	2,046.9	852.6	1,432.3	1,574.4	1,155.0	1,269.9	1,733.6
14 NOV	2,181.7	1,339.2	1,152.5	985.3	1,458.9	692.2	2,261.9	1,438.8
28 NOV	1,251.7	752.3	1,020.5	649.0	2,796.6	186.1	1,213.2	1,124.2
Mean	2,679.4	3,006.8	2,625.1	2,945.4	2,682.8	1,594.1	2,199.8	2,533.3
				Night				
3 MAY	11,522.0	6,757.8	9,952.8	4,429.1	10,098.3	2,370.2	1,009.4	6,591.4
[illegible] MAY	3,593.2	2,685.6	3,227.0	2,380.5	1,249.3	1,573.8	976.7	2,240.9
[illegible] MAY	22,262.8	18,976.5	18,872.1	21,307.4	32,719.8	7,030.0	35,300.0	22,352.7
14 JUN	6,327.9	7,670.4	11,461.5	14,779.3	6,885.7	2,558.7	8,288.0	8,281.6
26 JUN	4,725.2	4,477.0	5,436.0	3,561.6	3,419.0	2,920.7	4,303.2	4,120.4
10 JUL	3,226.6	3,810.4	3,860.1	3,101.1	2,522.7	4,969.3	2,079.1	3,367.0
25 JUL	3,478.8	3,832.5	4,258.2	4,017.3	3,301.0	3,338.0	4,107.9	3,762.0
8 AUG	3,261.0	3,612.4	3,548.2	5,913.5	5,662.3	4,299.7	2,725.0	4,146.0
20 AUG	3,114.6	3,016.4	4,176.2	5,296.9	3,100.1	5,077.2	7,718.4	4,500.0
6 SEP	3,445.4	4,813.8	3,355.9	3,205.2	4,982.6	4,918.3	4,626.5	4,192.5
19 SEP	1,960.9	4,525.5	3,775.5	1,900.1	2,330.1	2,610.6	4,339.5	3,063.2
4 OCT	2,837.5	2,580.7	2,552.5	1,856.2	3,001.4	1,087.5	5,136.8	2,721.8
18 OCT	4,185.9	6,552.8	4,003.9	4,739.1	3,737.1	3,310.2	4,932.5	4,494.5
1 NOV	4,958.6	6,305.3	3,404.0	2,391.7	3,640.4	6,983.9	5,810.1	4,784.9
15 NOV	5,021.5	4,568.0	4,091.7	2,513.5	3,578.8	4,721.1	5,037.7	4,218.9
29 NOV	1,576.1	3,533.2	3,618.2	3,229.5	3,792.8	2,601.0	3,339.6	3,098.6
Mean	5,343.6	5,482.4	5,599.6	5,288.9	5,876.3	3,773.1	6,233.2	5,371.0

(a) Averaged over all three sampling depths--surface, middepth, and bottom.

TABLE D.2-2 SURFACE DENSITIES (No./1,000 m3) OF GAMMARUS SPP. COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
03 MAY	0.0	0.0	0.0	0.0	28.8	9.4	0.0	4.1
17 MAY	43.5	25.2	0.0	19.2	5.9	0.0	0.0	15.6
30 MAY	836.2	0.0	295.9	1515.9	19.5	11.7	39.8	388.4
14 JUN	7.3	15.0	0.0	18.4	0.0	0.0	0.0	5.8
26 JUN	0.0	32.7	53.1	64.3	23.6	0.0	11.8	26.5
10 JUL	26.1	66.9	0.0	11.2	4.4	0.0	5.9	16.4
25 JUL	0.0	13.4	0.0	0.0	0.0	0.0	0.0	1.9
08 AUG	0.0	12.0	0.0	0.0	0.0	0.0	0.0	1.7
20 AUG	0.0	23.9	0.0	25.2	0.0	9.3	0.0	8.3
05 SEP	0.0	0.0	0.0	18.0	218.0	5.0	0.0	34.4
18 SEP	11.7	0.0	0.0	0.0	0.0	0.0	0.0	1.7
04 OCT	0.0	0.0	0.0	0.0	0.0	105.0	0.0	15.0
17 OCT	0.0	10.6	0.0	0.0	0.0	6.5	0.0	2.4
31 OCT	30.6	0.0	0.0	0.0	12.6	0.0	0.0	6.2
14 NOV	5.9	0.0	17.9	0.0	0.0	34.1	0.0	8.3
28 NOV	0.0	5.8	0.0	0.0	0.0	5.3	6.4	2.5
MEAN	60.1	12.8	22.9	104.5	19.6	11.8	4.0	33.9
Night								
03 MAY	363.7	(A)	1245.3	2278.7	3702.6	13.7	2947.0	1758.5
17 MAY	355.6	271.0	25.4	23.1	10.8	223.2	32.1	134.5
30 MAY	2724.7	13100.8	4987.7	14829.6	22747.8	734.1	16015.0	10734.2
14 JUN	(A)	(A)	24.1	43.5	16.1	32.1	29.0	29.0
26 JUN	49.1	57.9	52.5	5.1	5.7	0.0	26.3	28.1
10 JUL	27.1	17.8	0.0	14.6	28.3	0.0	0.0	12.5
25 JUL	16.5	0.0	26.8	16.6	35.7	58.3	16.0	24.3
08 AUG	91.7	245.7	36.1	43.8	31.5	12.5	14.7	68.0
20 AUG	175.6	70.7	166.8	268.0	747.2	144.6	1911.6	497.8
05 SEP	152.3	272.5	106.5	59.0	35.1	12.5	32.7	95.8
18 SEP	105.1	235.5	166.6	267.6	36.3	5.4	180.6	144.3
04 OCT	754.1	674.7	71.3	144.7	11.6	18.3	17.8	279.0
17 OCT	470.8	248.6	187.9	443.6	220.1	46.7	127.8	249.4
31 OCT	3883.8	1512.9	495.0	597.1	697.8	508.8	1113.2	1258.4
14 NOV	529.8	738.6	541.3	898.4	580.8	10.7	907.6	601.0
28 NOV	135.4	743.7	276.4	1832.2	413.2	0.0	636.0	576.7
MEAN	655.7	1299.3	525.6	1360.3	1832.5	121.0	1500.5	1049.5

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

BLE D.2-3 MIDDEPTH DENSITIES (No./1,000 m3) OF GAMMARUS SPP. COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
03 MAY	9.9	0.0	816.6	18.6	132.2	1542.9	80.6	371.5
17 MAY	311.3	2520.8	32.8	236.7	17.2	19.4	0.0	448.3
30 MAY	797.8	150.2	1922.8	7000.1	6.8	1345.9	26.0	1607.1
14 JUN	0.0	5.6	0.0	30.7	7.2	17.4	0.0	8.7
26 JUN	31.6	20.1	0.0	7.8	0.0	0.0	0.0	8.5
10 JUL	495.5	65.6	0.0	21.9	0.0	0.0	9.1	84.6
25 JUL	74.9	0.0	41.1	7.3	0.0	0.0	7.5	18.7
08 AUG	164.8	29.7	6.7	0.0	0.0	0.0	6.9	29.7
20 AUG	0.0	0.0	51.9	217.4	0.0	0.0	0.0	38.5
05 SEP	0.0	0.0	0.0	205.0	0.0	0.0	0.0	29.3
18 SEP	0.0	0.0	13.8	34.8	0.0	0.0	0.0	8.1
04 OCT	0.0	0.0	0.0	98.2	0.0	35.7	0.0	19.1
17 OCT	0.0	7.4	0.0	27.1	0.0	0.0	0.0	4.9
31 OCT	0.0	21.4	0.0	0.0	8.1	0.0	8.3	5.4
14 NOV	0.0	65.7	0.0	0.0	0.0	0.0	0.0	9.4
28 NOV	0.0	--	0.0	0.0	0.0	176.5	0.0	29.4
MEAN	117.9	192.4	180.4	494.1	11.4	196.1	8.6	172.8
Night								
03 MAY	13237.9	5217.3	8653.7	6108.3	17229.3	791.1	(A)	8539.6
17 MAY	2867.6	2557.7	77.5	0.0	146.6	318.2	97.3	866.4
30 MAY	14259.1	19302.1	18440.7	21944.8	28191.3	274.3	30316.1	18961.2
14 JUN	1295.3	1282.6	1489.6	1087.1	1120.2	398.9	1346.5	1145.7
26 JUN	3482.0	2200.6	2256.1	1594.0	1034.3	263.6	3981.8	2116.1
10 JUL	172.2	394.8	70.8	105.9	148.6	18.4	84.0	142.1
25 JUL	184.0	161.9	42.2	48.5	39.4	151.5	118.1	106.5
08 AUG	184.7	93.1	88.7	112.2	241.2	78.8	55.5	122.0
20 AUG	451.7	841.9	629.8	553.6	456.4	301.1	904.0	591.2
05 SEP	94.9	224.1	80.4	248.2	224.5	22.8	927.6	260.4
18 SEP	109.5	146.7	276.0	115.2	89.8	7.4	454.1	180.8
04 OCT	233.2	329.8	107.1	53.3	113.9	74.6	483.3	253.4
17 OCT	1024.1	784.3	192.9	1622.5	428.1	180.2	954.5	740.9
31 OCT	1052.5	1581.3	21.7	922.5	349.1	888.0	1830.2	949.3
14 NOV	1238.9	2999.8	733.0	1294.5	558.3	347.4	1981.7	1307.7
28 NOV	254.0	453.1	241.2	1559.0	353.6	97.3	221.9	454.3
MEAN	2508.8	2423.2	2087.6	2335.6	3170.3	280.4	2917.1	2257.9

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

te: Dashes (--) indicate no valid sample collected because of gear malfunction or inclement weather.

TABLE D.2-4 BOTTOM DENSITIES (No./1,000 m^3) OF GAMMARUS SPP. COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
03 MAY	15208.8	5294.7	13869.5	2051.7	5675.3	6549.2	2214.6	7266.3
17 MAY	3994.6	46428.4	6294.1	17236.7	17013.3	505.6	6323.8	13970.9
30 MAY	15685.3	4295.4	3582.0	21708.7	6806.9	2333.3	3722.4	8304.9
14 JUN	2927.5	4.7	562.9	687.9	544.6	191.5	105.3	717.8
26 JUN	7312.9	5759.2	7853.5	1239.8	1335.6	690.1	1227.8	3631.3
10 JUL	297.2	307.6	128.5	162.2	17.7	64.5	120.8	156.9
25 JUL	448.1	280.4	224.1	60.0	129.1	12.3	48.5	171.8
08 AUG	106.3	142.6	81.3	6.9	18.9	49.5	33.2	62.7
20 AUG	76.8	230.0	275.4	365.2	400.9	450.1	162.8	280.2
05 SEP	56.7	381.3	42.2	150.7	675.6	157.3	145.3	229.9
18 SEP	41.2	108.3	97.6	57.2	119.1	68.2	63.7	79.3
04 OCT	100.5	51.3	56.1	250.9	2932.2	51.3	206.8	521.3
17 OCT	128.2	61.1	47.3	150.5	120.2	0.0	277.0	112.0
31 OCT	541.3	774.1	165.1	128.5	629.0	11.0	55.6	329.2
14 NOV	251.0	745.6	240.3	0.0	216.4	44.0	200.8	242.6
28 NOV	124.1	432.5	40.5	184.8	151.0	136.8	33.9	157.7
MEAN	2956.3	4081.1	2097.5	2777.6	2299.1	707.2	933.9	2264.7
Night								
03 MAY	19904.3	7915.4	15560.7	(A)	8584.8	5958.8	(A)	11584.8
17 MAY	5888.1	4373.4	7489.3	2762.2	2182.1	2289.4	2152.8	3876.8
30 MAY	40059.7	20965.0	29710.3	16532.1	43269.9	19531.4	51775.6	31692.0
14 JUN	2154.1	1665.2	1110.0	929.9	1634.7	1597.8	1670.9	1537.5
26 JUN	5106.9	3376.1	2714.8	1047.4	2003.0	1500.8	0.0	2249.9
10 JUL	435.7	484.1	258.2	439.6	333.2	119.9	255.2	332.3
25 JUL	415.6	202.3	179.2	69.4	310.0	160.3	168.8	215.1
08 AUG	340.9	589.1	182.9	269.7	357.0	272.1	308.9	331.5
20 AUG	250.3	337.4	517.2	587.4	429.2	189.4	490.3	400.2
05 SEP	79.0	335.4	363.2	328.3	362.7	540.2	170.5	311.3
18 SEP	172.9	331.4	318.7	147.1	130.8	147.4	134.4	197.5
04 OCT	325.8	543.4	371.1	315.2	254.4	162.5	1832.6	543.6
17 OCT	724.1	922.2	615.1	1657.9	383.0	386.4	473.6	737.5
31 OCT	292.5	825.0	506.1	603.8	357.7	441.6	794.6	545.9
14 NOV	1793.3	3625.6	1791.3	530.2	832.7	1992.7	255.0	1545.8
28 NOV	197.2	493.4	221.8	653.6	156.7	407.0	205.3	333.6
MEAN	4883.8	2936.5	3869.4	1791.6	3848.9	2231.1	4045.9	3380.7

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

LE D.2-5 SURFACE DENSITIES (No./1,000 m3) OF NEOMYSIS AMERICANA COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
03 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	7.3	22.5	0.0	4.6	0.0	0.0	0.0	4.9
26 JUN	16.2	0.0	0.0	0.0	11.8	0.0	0.0	4.0
10 JUL	6.5	19.7	0.0	27.9	22.2	4.8	0.0	11.6
25 JUL	11.7	71.5	0.0	4.3	30.3	11.2	0.0	18.4
08 AUG	72.3	48.1	29.1	50.4	9.6	13.4	0.0	31.8
20 AUG	0.0	0.0	0.0	65.6	22.5	4.6	5.3	14.0
05 SEP	12.5	6.2	11.3	318.3	0.0	0.0	0.0	49.8
18 SEP	11.7	6.1	91.1	143.1	0.0	5.6	0.0	50.8
04 OCT	0.0	0.0	6.7	28.6	0.0	86.5	0.0	17.4
17 OCT	7.6	10.6	58.0	235.9	55.1	6.5	14.8	55.5
31 OCT	10.2	0.0	0.0	6.1	18.9	15.4	45.2	13.7
14 NOV	0.0	0.0	0.0	76.1	11.2	0.0	55.9	20.5
28 NOV	0.0	5.8	0.0	0.0	0.0	0.0	0.0	0.8
MEAN	9.8	11.9	12.3	60.1	17.5	9.9	7.6	18.5
Night								
03 MAY	0.0	(A)	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	5.9	5.6	0.0	0.0	5.4	9.7	0.0	3.8
30 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	(A)	(A)	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	5.7	60.2	42.0	15.4
10 JUL	330.6	466.0	399.6	863.7	1364.8	4293.3	1295.0	1287.6
25 JUL	1260.3	1059.2	5293.5	3257.8	2005.2	1569.4	2606.8	2436.0
08 AUG	1384.5	2414.7	2276.7	3923.2	5354.0	4276.8	3176.5	3258.1
20 AUG	2705.9	439.6	1608.4	1772.6	801.3	3905.2	3051.4	2040.6
05 SEP	4130.1	4307.5	4545.2	2891.9	3532.5	5097.2	2793.5	3971.1
18 SEP	1471.8	6948.3	4253.1	1484.6	1889.0	1064.7	3880.1	2868.5
04 OCT	576.3	935.1	612.4	664.4	1687.8	152.6	2707.9	1197.3
17 OCT	1576.3	7063.7	4308.4	595.4	5563.0	4141.8	2172.8	3631.6
31 OCT	277.4	3961.2	1228.6	999.2	2796.9	3475.2	2453.2	2170.2
14 NOV	648.3	488.4	1548.1	1046.1	3208.5	48.2	885.8	1124.8
28 NOV	284.3	1961.2	1341.4	1689.5	1321.0	110.0	3761.0	1495.5
MEAN	976.8	2182.2	1713.5	1199.3	1845.9	1809.3	1801.6	1641.7

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

TABLE D.2-6 MIDDEPTH DENSITIES (No./1,000 m^3) OF NEOMYSIS AMERICANA COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
03 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.9
30 MAY	0.0	0.0	0.0	6.9	0.0	0.0	0.0	1.0
14 JUN	9.7	5.6	0.0	0.0	0.0	0.0	0.0	2.2
26 JUN	7.9	0.0	0.0	0.0	18.8	0.0	0.0	3.8
10 JUL	1864.6	13.1	0.0	36.6	7.4	0.0	27.2	278.4
25 JUL	7.5	0.0	6.9	3948.0	349.6	47.8	7.5	623.9
08 AUG	189.3	0.0	13.4	16.5	6.7	0.0	277.7	71.9
20 AUG	0.0	0.0	2177.8	1738.9	197.5	0.0	230.9	620.7
05 SEP	7.1	0.0	0.0	3254.0	0.0	0.0	0.0	465.9
18 SEP	7.1	139.3	2809.4	7030.6	97.7	0.0	5.7	1665.4
04 OCT	0.0	9.2	0.0	330.5	0.0	7.1	0.0	49.5
17 OCT	47.5	7.4	1112.0	3516.7	9.2	7.9	0.0	671.5
31 OCT	3076.4	427.2	97.2	63.2	73.3	481.2	934.1	736.1
14 NOV	36.0	352.9	28.7	323.1	7.3	87.5	236.4	153.1
28 NOV	117.7	--	0.0	0.0	0.0	0.0	0.0	19.6
MEAN	336.1	63.6	390.3	1266.6	44.7	39.5	107.5	326.0
Night								
03 MAY	0.0	0.0	0.0	0.0	0.0	0.0	(A)	0.0
17 MAY	40.7	20.7	0.0	0.0	7.0	16.7	6.1	13.0
30 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	37.3	0.0	0.0	5.3
26 JUN	8.2	0.0	0.0	8.0	87.2	979.1	1647.2	390.0
10 JUL	1531.3	2715.0	3555.7	2507.5	1585.2	4327.3	1215.9	2491.1
25 JUL	2588.8	3075.8	1805.4	3539.2	2787.9	5484.4	5383.0	3523.5
08 AUG	2565.7	1236.3	2635.7	5332.9	4645.8	3465.8	301.5	2883.4
20 AUG	970.6	1149.7	739.6	1163.9	436.3	2621.6	5041.6	1731.9
05 SEP	1474.8	4930.0	1614.3	2241.3	1670.0	3112.9	6657.2	3100.1
18 SEP	1773.2	3366.1	3146.0	1487.0	1975.8	4289.8	1557.1	1915.7
04 OCT	3851.8	2606.9	3650.6	2584.3	4850.5	104.5	3749.9	3549.0
17 OCT	2214.2	2794.2	2244.2	3736.3	2071.9	2126.6	5990.6	3025.4
31 OCT	1052.5	3332.4	1405.0	1632.1	2524.6	10033.9	6913.2	3842.0
14 NOV	1548.7	1012.1	618.5	789.4	1268.9	1664.8	6777.8	1954.3
28 NOV	1745.5	3737.8	3969.2	1840.6	5536.9	4294.4	2073.2	3313.9
MEAN	1335.4	1873.6	1586.5	1678.9	1842.8	2548.8	3154.3	1987.5

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

Note: Dashes (--) indicate no valid sample collected because of gear malfunction or inclement weather.

BLE D.2-7 BOTTOM DENSITIES (No./1,000 m^3) OF NEOMYSIS AMERICANA COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
03 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	23.8	0.0	1166.6	673.7	1395.3	4183.8	2434.5	1411.1
30 MAY	0.0	0.0	5.7	0.0	0.0	0.0	0.0	0.8
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	123.2	811.9	167.7	157.5
10 JUL	3994.9	1308.7	5344.0	7067.9	2226.8	870.2	1214.8	3146.8
25 JUL	3700.0	4736.3	3787.5	2489.3	4320.3	1701.1	1784.4	3217.0
08 AUG	2182.1	5294.9	3037.5	3083.0	2195.2	4111.7	3520.5	3346.4
20 AUG	1364.5	1280.4	3059.0	1690.9	7499.1	2671.5	2022.8	2798.3
05 SEP	2193.9	3996.5	1415.3	1036.2	195.6	6727.8	511.2	2296.6
18 SEP	1790.0	3749.8	1730.1	3032.8	1248.2	1601.8	1126.3	2039.9
04 OCT	1473.5	2967.2	1865.2	1387.8	3311.7	2268.2	2643.3	2273.8
17 OCT	2332.0	2676.9	0.0	4941.7	2411.0	5592.2	3491.5	3063.6
31 OCT	6220.8	3768.3	1928.1	3813.0	2847.8	2543.9	2479.4	3371.6
14 NOV	5651.9	950.3	1882.5	1846.8	3560.8	879.8	5809.1	2940.2
28 NOV	3395.3	783.0	3004.7	1617.0	8080.1	215.0	3565.4	2951.5
MEAN	2145.2	1969.5	1764.1	2042.5	2463.4	2136.2	1923.2	2063.4
Night								
03 MAY	0.0	0.0	0.0	(A)	0.0	0.0	(A)	0.0
17 MAY	224.2	37.0	243.2	1155.2	961.9	583.7	335.1	505.8
30 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	5.8	0.0	0.0	0.0	0.0	5.7	1.6
26 JUN	0.0	0.0	0.0	25.2	173.2	662.5	654.1	216.4
10 JUL	4064.7	4078.4	4813.7	2390.8	1836.0	3547.1	1713.5	3206.3
25 JUL	4535.8	4992.0	4071.3	3720.9	3533.6	992.4	2920.9	3538.1
08 AUG	2848.8	4434.4	3769.3	6006.0	4143.4	3189.2	3364.7	3965.1
20 AUG	516.5	1527.7	1508.5	2310.3	815.4	3828.5	1641.1	1735.4
05 SEP	2141.5	1637.5	1514.2	2413.3	7741.6	4264.0	1310.5	3003.2
18 SEP	1222.7	929.0	2005.0	1455.1	2194.7	1162.9	1280.2	1464.2
04 OCT	1374.8	1343.3	2052.7	1448.4	1062.1	726.2	4090.5	1728.3
17 OCT	4161.4	4155.7	2444.5	4348.7	1525.6	2318.2	2945.8	3128.6
31 OCT	1659.6	3382.7	5298.0	813.6	3126.4	1792.4	1460.5	2504.7
14 NOV	4483.3	778.4	3496.6	1178.2	2659.3	3934.6	1222.8	2536.2
28 NOV	1307.9	1813.6	3949.9	838.5	3056.1	2556.9	2401.9	2275.0
MEAN	1783.8	1819.7	2197.9	1873.6	2051.8	1847.4	1689.8	1896.9

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

TABLE D.2-8 SURFACE DENSITIES (No./1,000 m3) OF MONOCULODES EDWARDSI COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
03 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 MAY	24.6	0.0	6.2	0.0	0.0	0.0	0.0	4.4
14 JUN	0.0	15.0	0.0	0.0	0.0	0.0	0.0	2.1
26 JUN	0.0	0.0	5.9	6.4	0.0	0.0	0.0	1.8
10 JUL	6.5	0.0	0.0	11.2	8.9	0.0	0.0	3.8
25 JUL	5.8	4.5	0.0	0.0	0.0	0.0	0.0	1.5
08 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.7
05 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	5.6	0.0	0.8
04 OCT	0.0	0.0	0.0	0.0	0.0	6.2	0.0	0.9
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 OCT	10.2	0.0	0.0	0.0	0.0	5.1	0.0	2.2
14 NOV	0.0	0.0	53.6	0.0	0.0	79.5	0.0	19.0
28 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	2.9	1.2	4.1	1.4	0.6	6.4	0.0	2.3
Night								
03 MAY	32.6	(A)	13.6	22.3	6.9	0.0	48.7	20.7
17 MAY	29.6	5.6	0.0	5.8	0.0	4.9	5.4	7.3
30 MAY	9.6	4.6	0.0	0.0	9.1	0.0	4.7	4.0
14 JUN	(A)	(A)	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	5.8	58.3	0.0	28.4	5.0	31.5	18.4
10 JUL	0.0	13.3	9.4	4.9	76.7	64.0	167.1	47.9
25 JUL	16.5	4.6	84.9	24.8	84.9	105.0	152.2	67.6
08 AUG	4.8	15.7	0.0	43.8	27.0	37.6	88.4	31.0
20 AUG	1205.8	202.1	202.5	268.0	671.4	235.0	1405.1	598.6
05 SEP	937.3	293.1	142.0	78.7	23.4	56.3	180.0	244.4
18 SEP	55.7	169.3	105.5	171.7	67.5	0.0	1424.9	284.9
04 OCT	12.3	0.0	23.8	32.9	11.6	0.0	148.1	38.1
17 OCT	184.2	322.1	41.8	27.2	59.5	17.5	76.7	104.1
31 OCT	477.0	1487.8	530.8	170.6	34.0	232.8	350.5	469.1
14 NOV	1265.3	500.3	291.0	510.7	276.3	10.7	493.7	478.3
28 NOV	223.4	551.8	296.6	639.3	103.3	0.0	205.1	288.5
MEAN	296.9	255.4	112.5	125.0	92.5	51.3	298.9	174.6

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

TABLE D.2-9 MIDDEPTH DENSITIES (No./1,000 m3) OF MONOCULODES EDWARDSI COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
03 MAY	0.0	11.7	35.9	0.0	0.0	0.0	10.1	8.2
17 MAY	0.0	0.0	16.4	34.8	8.6	0.0	9.1	9.8
30 MAY	30.2	0.0	0.0	0.0	0.0	0.0	0.0	4.3
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	16.1	0.0	0.0	0.0	0.0	0.0	2.3
10 JUL	66.4	0.0	0.0	14.6	0.0	0.0	0.0	11.6
25 JUL	7.5	0.0	0.0	7.3	8.3	8.0	0.0	4.4
08 AUG	12.2	7.4	0.0	0.0	0.0	0.0	0.0	2.8
20 AUG	0.0	0.0	74.1	72.5	0.0	0.0	0.0	20.9
05 SEP	0.0	0.0	0.0	138.9	0.0	0.0	0.0	19.8
18 SEP	0.0	0.0	20.8	69.5	0.0	0.0	0.0	15.1
04 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	27.1	0.0	15.7	0.0	6.1
31 OCT	0.0	7.1	0.0	0.0	0.0	6.9	25.0	5.6
14 NOV	7.2	41.0	0.0	0.0	0.0	6.7	7.6	8.9
28 NOV	0.0	--	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	7.7	5.6	9.2	22.8	1.1	2.3	3.2	7.5
Night								
03 MAY	132.3	53.6	18.4	77.8	35.5	30.4	(A)	58.0
17 MAY	33.9	0.0	14.1	33.5	14.0	0.0	0.0	13.6
30 MAY	17.5	50.0	6.7	16.9	11.6	0.0	19.3	17.4
14 JUN	16.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3
26 JUN	197.6	302.2	289.8	310.8	211.8	316.3	1131.5	394.3
10 JUL	63.4	209.5	102.3	99.2	304.3	92.1	392.2	180.4
25 JUL	220.8	236.1	112.4	187.0	110.3	553.7	383.8	257.7
08 AUG	112.1	19.9	88.7	158.4	335.6	258.8	15.9	141.3
20 AUG	1178.1	1401.0	549.2	837.5	644.4	622.9	4101.5	1333.5
05 SEP	455.7	408.6	80.4	177.3	245.6	45.7	1118.6	361.7
18 SEP	102.2	264.0	207.0	142.7	117.4	96.2	951.5	257.1
04 OCT	17.3	403.6	33.0	26.6	227.9	14.9	1041.6	291.7
17 OCT	433.6	1729.7	114.0	306.0	198.8	122.6	1342.4	606.7
31 OCT	4821.3	652.2	7.2	525.1	167.9	1138.5	1166.9	1211.3
14 NOV	1419.6	1681.9	626.1	607.8	398.8	196.6	1790.2	960.1
28 NOV	204.9	177.0	168.1	267.8	160.7	15.0	62.4	150.8
MEAN	589.1	474.3	151.1	235.9	199.0	227.2	901.2	393.8

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

Note: Dashes (--) indicate no valid sample collected because of gear malfunction or inclement weather.

TABLE D.2-10 BOTTOM DENSITIES (No./1,000 m3) OF MONOCULODES EDWARDSI COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
03 MAY	234.2	207.6	164.2	109.9	8.4	17.6	0.0	106.0
17 MAY	57.1	263.2	118.6	317.3	298.6	79.3	195.9	190.0
30 MAY	31.7	0.0	0.0	7.5	0.0	11.5	0.0	7.2
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	155.3	104.7	234.3	27.9	155.6	331.5	208.0	173.9
10 JUL	235.0	135.6	177.5	270.3	229.7	636.5	664.4	335.6
25 JUL	187.7	81.0	60.1	156.0	469.6	61.6	48.5	152.1
08 AUG	151.1	401.8	807.3	75.4	88.1	148.4	272.3	277.8
20 AUG	330.8	322.0	697.4	265.1	585.9	882.7	513.1	513.9
05 SEP	249.4	258.7	37.0	201.0	142.2	109.4	35.1	147.5
18 SEP	82.4	176.0	119.3	103.0	134.7	48.7	97.9	108.9
04 OCT	294.7	42.8	91.2	109.8	198.4	34.2	168.0	134.2
17 OCT	440.8	74.7	181.1	33.4	172.7	0.0	430.1	190.4
31 OCT	1137.7	628.1	195.1	60.0	122.3	126.6	238.4	358.3
14 NOV	311.9	964.9	554.1	293.5	537.6	188.5	446.3	471.0
28 NOV	105.5	96.9	16.2	112.2	119.2	0.0	33.9	69.1
MEAN	250.3	234.9	215.8	133.9	203.9	167.3	209.5	202.2
Night								
03 MAY	200.4	58.7	125.4	(A)	126.4	48.1	(A)	111.8
17 MAY	14.9	49.3	24.9	37.0	38.7	106.9	51.1	46.1
30 MAY	11.5	60.0	25.0	30.9	5.3	0.0	11.3	20.6
14 JUN	11.4	5.8	0.0	0.0	0.0	17.2	0.0	4.9
26 JUN	320.3	202.8	274.3	132.5	330.2	422.1	0.0	240.3
10 JUL	513.3	1233.5	559.4	979.5	1300.2	768.7	619.8	853.5
25 JUL	424.5	493.8	369.6	175.4	392.6	542.0	303.9	386.0
08 AUG	387.2	543.8	312.6	491.5	543.1	778.3	146.0	457.5
20 AUG	878.7	1061.4	1225.3	797.8	974.2	1309.1	1501.8	1106.9
05 SEP	349.3	365.0	569.9	576.0	831.1	1022.6	136.4	550.0
18 SEP	247.0	467.2	484.6	220.6	218.0	917.2	485.2	434.3
04 OCT	384.4	452.8	465.8	157.6	477.0	1493.0	1152.1	654.7
17 OCT	1656.2	1354.9	899.0	752.0	708.5	552.0	550.2	924.7
31 OCT	1271.9	1807.6	670.5	578.4	777.7	1636.5	590.3	1047.6
14 NOV	2003.4	1837.4	2027.7	552.3	895.4	2695.5	320.4	1476.0
28 NOV	341.8	573.4	320.4	343.3	195.9	230.0	136.9	306.0
MEAN	563.5	660.5	522.2	388.3	488.4	783.7	400.4	546.6

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

TABLE D.2-11 SURFACE DENSITIES (No./1,000 m3) OF CHAOBORUS PUNCTIPENNIS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
03 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	9.6	0.0	0.0	0.0	1.6
30 MAY	184.5	25.3	6.2	6.5	13.0	5.9	6.6	35.4
14 JUN	0.0	15.0	0.0	4.6	0.0	0.0	0.0	2.8
26 JUN	5.4	13.1	11.8	12.9	0.0	0.0	5.9	7.0
10 JUL	26.1	27.6	0.0	16.7	4.4	0.0	0.0	10.7
25 JUL	0.0	89.4	0.0	4.3	0.0	0.0	4.6	14.0
08 AUG	4.0	0.0	8.3	11.2	0.0	4.5	15.6	6.2
20 AUG	0.0	0.0	10.9	10.1	11.2	46.3	10.6	12.7
05 SEP	6.3	0.0	0.0	0.0	0.0	5.0	0.0	1.6
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 OCT	0.0	0.0	0.0	0.0	0.0	0.0	6.8	1.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 OCT	0.0	0.0	0.0	0.0	6.3	0.0	0.0	0.9
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	14.1	10.7	2.3	4.7	2.2	4.1	3.1	5.9
Night								
03 MAY	21.7	(A)	211.0	122.6	131.0	0.0	24.4	85.1
17 MAY	71.1	45.2	12.7	11.5	5.4	9.7	5.4	23.0
30 MAY	81.8	46.0	113.8	170.6	95.2	0.0	779.5	183.8
14 JUN	(A)	(A)	0.0	6.2	5.4	10.7	0.0	4.5
26 JUN	43.6	17.4	99.2	35.6	51.1	0.0	26.3	39.0
10 JUL	16.2	8.9	18.8	87.3	36.3	25.6	17.9	30.1
25 JUL	107.1	278.7	165.3	335.3	209.9	29.2	20.0	163.6
08 AUG	72.4	104.5	94.7	162.1	157.7	142.0	147.3	125.8
20 AUG	227.8	75.8	530.2	426.4	140.8	24.1	174.9	228.6
05 SEP	17.6	0.0	17.8	19.7	5.9	0.0	0.0	8.7
18 SEP	0.0	22.1	0.0	5.0	5.2	0.0	0.0	4.6
04 OCT	0.0	0.0	5.9	0.0	0.0	0.0	0.0	1.0
17 OCT	0.0	0.0	7.0	3.9	0.0	0.0	0.0	1.6
31 OCT	0.0	0.0	0.0	0.0	0.0	0.0	6.9	1.0
14 NOV	0.0	0.0	5.8	12.3	5.6	0.0	14.5	5.5
28 NOV	0.0	0.0	0.0	5.7	5.4	0.0	6.8	2.6
MEAN	44.0	42.8	80.1	87.8	53.4	16.1	76.5	58.0

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

TABLE D.2-12 MIDDEPTH DENSITIES (No./1,000 m3) OF CHAOBORUS PUNCTIPENNIS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
03 MAY	0.0	0.0	17.9	27.9	33.0	20.2	0.0	14.1
17 MAY	227.0	14.7	16.4	34.8	17.2	0.0	0.0	44.3
30 MAY	30.2	0.0	54.9	13.7	0.0	0.0	0.0	14.1
14 JUN	0.0	0.0	0.0	0.0	7.2	17.4	0.0	3.5
26 JUN	0.0	4.0	0.0	0.0	0.0	8.5	0.0	1.8
10 JUL	132.8	0.0	34.7	0.0	14.9	0.0	9.1	27.4
25 JUL	0.0	17.2	0.0	0.0	8.3	0.0	0.0	3.6
08 AUG	6.1	22.3	13.4	288.1	53.8	101.5	34.7	74.3
20 AUG	7.2	6.1	51.9	166.6	55.6	0.0	41.4	47.0
05 SEP	0.0	8.0	0.0	6.6	0.0	0.0	0.0	2.1
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 OCT	0.0	0.0	0.0	0.0	0.0	7.1	0.0	1.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28 NOV	0.0	--	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	25.2	4.8	11.8	33.6	12.7	9.7	5.3	14.8
Night								
03 MAY	82.7	142.9	174.9	120.2	142.0	24.3	(A)	114.5
17 MAY	13.6	6.9	7.0	46.9	7.0	11.2	0.0	13.2
30 MAY	70.0	105.7	113.8	112.3	208.0	81.7	251.5	134.7
14 JUN	16.0	31.9	0.0	31.3	0.0	0.0	0.0	11.3
26 JUN	24.7	23.2	78.4	159.4	68.5	60.2	250.7	95.0
10 JUL	36.3	64.4	125.8	46.3	14.2	9.2	0.0	42.3
25 JUL	128.9	155.2	98.4	228.5	102.4	11.7	78.7	114.8
08 AUG	79.2	39.9	57.0	66.0	73.4	78.8	31.7	60.9
20 AUG	48.8	188.4	205.1	142.0	26.8	15.6	56.8	97.6
05 SEP	0.0	6.6	33.5	7.1	0.0	0.0	20.5	9.7
18 SEP	0.0	7.3	13.8	0.0	6.9	0.0	0.0	4.0
04 OCT	8.6	0.0	0.0	17.8	0.0	0.0	0.0	4.4
17 OCT	0.0	35.0	0.0	0.0	7.6	0.0	0.0	6.1
31 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	7.3	0.0	0.0	7.3	0.0	8.3	3.3
28 NOV	0.0	0.0	0.0	0.0	0.0	0.0	6.9	1.0
MEAN	31.8	50.9	56.7	61.1	41.5	19.5	47.0	44.3

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

Note: Dashes (--) indicate no valid sample collected because of gear malfunction or inclement weather.

TABLE D.2-13 BOTTOM DENSITIES (No./1,000 m3) OF CHAOBORUS PUNCTIPENNIS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
03 MAY	133.9	26.0	109.5	9.2	16.8	26.3	28.0	50.0
17 MAY	61.8	175.5	197.7	16.7	86.1	19.8	1163.8	245.9
30 MAY	101.4	14.2	5.7	60.0	7.2	0.0	23.8	30.3
14 JUN	299.5	42.7	26.5	0.0	0.0	16.0	0.0	55.0
26 JUN	92.1	139.7	126.7	50.3	45.4	94.7	60.4	87.0
10 JUL	1022.9	636.1	220.3	33.8	0.0	96.7	20.1	290.0
25 JUL	145.3	1009.5	524.7	120.0	129.1	18.5	16.2	280.5
08 AUG	100.7	699.9	81.3	82.2	94.4	42.4	59.8	165.8
20 AUG	23.6	199.3	70.4	115.1	129.5	93.5	128.3	108.5
05 SEP	0.0	0.0	0.0	0.0	29.6	0.0	20.0	7.1
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 OCT	0.0	0.0	0.0	0.0	0.0	5.7	6.5	1.7
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	14.6	0.0	0.0	7.0	0.0	0.0	3.1
28 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	123.8	184.8	85.2	30.5	34.1	25.9	95.4	82.8
Night								
03 MAY	250.5	58.7	282.1	(A)	148.7	128.1	(A)	173.6
17 MAY	156.9	111.0	93.5	155.5	45.2	24.7	28.4	87.9
30 MAY	103.8	98.2	174.8	149.4	32.1	85.3	225.7	124.2
14 JUN	17.1	29.2	5.4	43.3	22.9	34.3	28.5	25.8
26 JUN	73.9	35.8	85.8	56.7	129.9	52.7	123.9	79.8
10 JUL	382.0	119.4	276.7	100.3	39.2	7.1	18.3	134.7
25 JUL	379.8	606.9	442.4	350.9	179.1	30.5	50.7	291.5
08 AUG	248.5	245.9	241.9	179.9	95.5	44.3	174.2	175.7
20 AUG	85.2	374.3	381.7	166.4	98.7	57.6	108.4	181.8
05 SEP	8.3	14.8	39.1	0.0	0.0	19.3	0.0	11.6
18 SEP	0.0	5.4	13.3	10.5	0.0	0.0	0.0	4.2
04 OCT	13.0	7.5	0.0	7.5	6.4	0.0	7.7	6.0
17 OCT	33.3	17.1	7.9	63.4	0.0	0.0	0.0	17.4
31 OCT	13.6	7.5	0.0	0.0	0.0	17.3	0.0	5.5
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28 NOV	0.0	0.0	0.0	6.6	0.0	0.0	0.0	0.9
MEAN	110.4	108.2	127.8	86.0	49.9	31.3	51.1	80.9

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

TABLE D.3-1 MEAN DENSITIES (No./1,000 m^3) OF TOTAL ICHTHYOPLANKTON EGGS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Date	Station A	B	C	D	E	F	G	Mean
				Day				
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 MAY	0.0	0.0	0.0	9.2	0.0	0.0	0.0	1.3
12 MAY	0.0	0.0	2.0	2.1	8.7	0.0	0.0	1.8
17 MAY	0.0	0.0	2.2	2.3	5.7	0.0	4.0	2.0
24 MAY	180.0	78.6	253.2	12.2	310.5	168.1	174.3	168.1
31 MAY	2.1	7.1	11.4	220.6	162.4	32.9	4.0	62.9
5 JUN	1.9	0.0	0.0	1.9	13.6	2.0	0.0	2.8
14 JUN	0.0	0.0	0.0	2.6	0.0	1.8	5.3	1.4
21 JUN	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.2
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	92.9	591.7	492.0	60.0	2,403.7	9,713.5	501.6	1,979.3
10 JUL	153.9	102.5	1,452.5	3,371.3	4,202.6	4,144.0	4,066.0	2,499.0
18 JUL	0.0	8.6	11.2	3.2	132.1	2,024.8	326.5	358.1
25 JUL	4.0	2.1	30.1	139.0	655.4	168.2	263.7	180.4
22 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean	21.8	39.5	112.73	191.2	394.7	812.8	267.3	262.9
				Night				
29 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 MAY	0.0	0.0	0.0	3.6	0.0	1.5	0.0	0.7
10 MAY	2.0	0.0	4.1	30.5	0.0	0.0	0.0	5.2
17 MAY	79.1	6.9	0.0	17.3	0.0	0.0	0.0	14.8
24 MAY	50.4	215.0	31.3	598.6	63.0	0.0	411.8	195.7
30 MAY	3.8	34.3	1.9	0.0	3.0	0.0	1.9	6.1
5 JUN	3.6	3.8	0.0	9.6	10.0	0.0	6.6	4.8
14 JUN	0.0	0.0	0.0	0.0	1.9	1.9	0.0	0.5
21 JUN	1.7	0.0	3.9	0.0	3.0	0.0	1.7	1.5
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	1,528.6	418.4	54.6	3,648.9	2,493.9	184.5	3,309.2	1,662.6
10 JUL	75.6	5,765.8	661.9	1,152.8	3,205.8	2,539.2	4,330.5	2,533.1
18 JUL	849.1	108.0	1.9	996.3	2,294.7	248.7	416.2	702.1
25 JUL	3.0	0.0	0.0	0.0	53.5	406.5	289.5	107.5
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.2
19 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean	136.7	344.9	40.0	322.9	406.4	169.1	438.5	265.5

(a) Averaged over all three sampling depths--surface, middepth, and bottom.

Note: Dashes (--) indicate no data available because ice flows in the river prevented sampling.

TABLE D.3-2 MEAN DENSITIES (No./1,000 m^3) OF TOTAL ICHTHYOPLANKTON YOLK-SAC LARVAE COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Date	Station A	B	C	D	E	F	G	Mean
				Day				
21 MAR	56.7	54.4	36.7	47.8	25.6	25.7	17.8	37.8
20 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 MAY	0.0	12.8	0.0	12.2	2.4	0.0	3.1	4.4
12 MAY	5.6	2.3	7.9	8.6	2.0	0.0	6.6	4.7
17 MAY	29.6	12.1	58.1	24.8	42.1	7.6	24.0	28.3
24 MAY	221.2	74.1	108.9	39.9	97.5	62.1	242.7	120.9
31 MAY	58.7	70.6	72.9	209.4	61.7	31.3	72.4	82.4
5 JUN	137.5	15.7	266.6	14.2	123.2	87.2	254.0	127.1
14 JUN	254.5	17.7	6.7	46.3	57.0	93.5	53.4	75.6
21 JUN	12.7	5.8	0.15	0.0	4.1	0.0	1.7	3.5
26 JUN	30.7	9.5	26.4	3.7	48.5	2.8	19.2	20.1
6 JUL	0.0	3.6	12.2	1.7	0.0	0.0	15.1	4.7
10 JUL	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.6
18 JUL	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.3
25 JUL	0.0	0.0	0.0	16.0	0.0	2.1	0.0	2.6
22 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean	40.4	13.9	29.8	21.5	23.3	15.6	35.0	25.6
				Night				
29 MAR	--	--	--	14.9	11.7	20.1	6.6	13.3
18 APR	0.0	0.0	2.5	0.0	1.9	0.0	0.0	0.6
3 MAY	0.0	3.6	0.0	0.0	0.0	0.0	0.0	0.5
10 MAY	0.0	0.0	5.7	2.2	2.4	0.0	1.8	1.7
17 MAY	23.1	10.1	6.2	42.1	14.6	12.1	3.8	16.0
24 MAY	98.4	104.8	26.0	123.2	40.3	27.7	80.1	71.5
30 MAY	118.3	117.3	72.4	69.4	32.3	38.0	58.7	72.3
5 JUN	801.3	155.0	235.3	105.7	183.7	264.2	427.2	310.3
14 JUN	116.0	61.8	21.9	16.5	11.9	36.1	22.3	40.9
21 JUN	39.8	8.2	7.4	8.4	32.5	3.6	18.4	16.9
26 JUN	4.1	7.1	20.6	14.7	21.4	7.5	18.3	13.4
6 JUL	16.0	4.1	12.8	10.6	17.4	1.6	0.0	8.9
10 JUL	0.0	0.0	4.2	0.0	0.0	2.1	0.0	0.9
18 JUL	0.0	0.0	36.7	21.9	6.3	8.9	2.1	10.8
25 JUL	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.4
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean	64.1	24.8	23.9	21.5	18.8	21.1	32.0	29.4

(a) Averaged over all three sampling depths--surface, middepth, and bottom.

Note: Dashes (--) indicate no data available because ice flows in the river prevented sampling.

TABLE D.3-3 MEAN DENSITIES (No./1,000 m^3) OF TOTAL ICHTHYOPLANKTON POST YOLK-SAC LARVAE COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Date	Station A	B	C	D	E	F	G	Mean
				Day				
21 MAR	298.3	90.7	210.4	139.1	178.1	572.4	541.7	290.1
20 APR	884.5	61.8	485.2	358.8	471.0	163.8	667.8	433.3
5 MAY	36.1	163.3	20.4	70.7	60.4	113.5	121.1	83.6
12 MAY	70.9	18.1	6.0	97.9	46.0	4.7	19.1	37.5
17 MAY	59.8	10.0	37.3	206.5	36.4	23.0	70.8	63.4
24 MAY	449.5	225.1	195.5	230.8	170.0	68.4	154.8	213.4
31 MAY	326.9	620.2	712.2	501.3	1,334.3	647.0	1,978.3	874.3
5 JUN	582.0	340.6	355.7	186.8	250.5	576.7	571.8	409.2
14 JUN	1,125.1	956.3	901.3	461.8	877.6	1,105.9	1,433.9	980.3
21 JUN	626.8	395.0	265.3	258.8	239.1	112.8	120.9	288.4
26 JUN	76.7	36.6	44.7	70.8	228.0	152.6	288.6	128.3
6 JUL	256.7	467.7	374.1	232.9	150.8	111.4	158.0	250.2
10 JUL	454.3	118.1	788.1	1,421.3	855.5	1,182.7	968.8	827.0
18 JUL	675.8	406.5	662.7	969.5	1,747.5	607.4	928.1	856.8
25 JUL	308.2	381.8	760.9	594.5	497.7	529.0	593.9	523.7
22 AUG	39.5	6.0	2.0	0.0	7.5	57.2	5.3	16.8
18 SEP	34.2	6.5	84.3	39.5	7.4	23.9	20.9	31.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	2.0	0.0	2.4	4.1	0.0	1.2
4 DEC	2.3	2.2	0.0	2.8	0.0	1.9	7.8	2.4
Mean	315.4	215.3	295.4	292.2	358.0	299.9	432.6	315.5
				Night				
29 MAR	--	--	--	52.7	34.2	40.4	39.3	41.6
18 APR	281.0	206.4	480.2	202.8	250.9	277.1	158.6	265.3
3 MAY	3.6	52.3	35.3	18.2	21.6	53.1	40.6	32.1
10 MAY	26.7	87.8	33.3	230.6	58.8	233.9	359.3	147.2
17 MAY	47.2	61.7	39.7	86.6	26.9	67.1	30.3	51.4
24 MAY	287.6	403.2	116.0	410.5	187.2	168.9	443.6	288.1
30 MAY	1,111.3	467.0	366.1	146.1	376.8	388.7	873.2	532.7
5 JUN	973.6	1,014.5	915.2	1,215.9	1,488.4	637.9	744.2	998.5
14 JUN	1,342.6	1,496.2	1,281.5	1,256.0	978.1	1,319.7	1,230.4	1,272.1
21 JUN	554.6	411.1	579.9	193.0	845.1	190.8	406.2	454.4
26 JUN	126.7	111.7	202.8	125.5	287.1	163.3	184.2	171.6
6 JUL	442.0	121.0	221.8	200.1	488.4	243.8	683.3	342.9
10 JUL	354.1	3,702.6	985.7	5,610.3	4,695.8	586.5	3,692.4	2,803.9
18 JUL	1,390.3	887.5	1,683.7	439.6	999.3	735.5	744.6	982.9
25 JUL	292.8	306.1	292.5	486.9	912.9	733.0	976.5	571.5
20 AUG	41.9	16.0	12.5	8.5	29.2	71.6	147.2	46.7
19 SEP	14.4	48.5	32.1	7.0	60.6	65.3	39.4	38.2
18 OCT	0.0	0.0	5.8	0.0	2.1	2.4	0.0	1.5
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.3
5 DEC	2.1	0.0	0.0	0.0	2.8	4.5	0.0	1.3
Mean	383.8	494.4	383.4	534.5	587.3	299.2	539.8	460.3

(a) Averaged over all three sampling depths--surface, middepth, and bottom.

Note: Dashes (--) indicate no data available because ice flows in the river prevented sampling.

TABLE D.3-4 MEAN DENSITIES (No./1,000 m^3) OF TOTAL ICHTHYOPLANKTON JUVENILES COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Date	Station A	B	C	D	E	F	G	Mean
				Day				
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 APR	3.7	0.0	0.0	3.2	7.6	0.0	12.0	3.8
5 MAY	5.6	0.0	3.0	0.0	0.0	9.2	0.0	2.5
12 MAY	2.0	2.3	0.0	0.0	4.3	4.4	0.0	1.9
17 MAY	3.2	31.2	11.0	94.6	26.8	0.0	39.6	29.5
24 MAY	5.1	0.0	2.5	0.0	0.0	2.5	0.0	1.4
31 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.3
14 JUN	0.0	0.0	0.0	0.0	0.0	3.5	2.5	0.9
21 JUN	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.3
26 JUN	0.0	0.0	4.2	1.9	8.6	0.0	2.2	2.4
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	5.2	2.0	6.8	3.9	0.0	0.0	2.6
18 JUL	2.0	2.1	0.0	0.0	0.0	0.0	0.0	0.6
25 JUL	0.0	2.1	0.0	2.0	0.0	0.0	0.0	0.6
22 AUG	0.0	0.0	3.9	0.0	4.1	1.9	8.2	2.6
18 SEP	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.3
17 OCT	0.0	0.0	0.0	2.8	0.0	0.0	0.0	0.4
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.8
4 DEC	0.0	0.0	0.0	2.4	2.1	1.9	0.0	0.9
Mean	1.1	2.1	1.3	5.9	3.0	1.2	3.4	2.6
				Night				
29 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	2.4	0.0	0.0	0.0	7.1	10.4	5.3	3.6
3 MAY	1.8	7.4	9.4	11.9	14.0	13.4	0.0	8.3
10 MAY	9.8	6.6	13.8	17.0	15.5	0.0	14.8	11.1
17 MAY	5.0	1.9	0.0	23.9	23.7	3.2	0.0	8.2
24 MAY	0.0	1.7	0.0	13.9	2.1	9.5	4.6	4.5
30 MAY	0.0	0.0	0.0	1.9	1.9	0.0	0.0	0.5
5 JUN	1.8	0.0	0.0	1.8	0.0	2.7	3.3	1.4
14 JUN	0.0	0.0	0.0	0.0	0.0	5.7	0.0	0.8
21 JUN	7.6	0.0	3.4	1.7	1.6	0.0	4.1	2.6
26 JUN	14.4	4.6	9.0	3.9	5.5	2.0	0.0	5.6
6 JUL	16.8	0.0	11.8	5.0	4.3	0.0	0.0	5.4
10 JUL	8.0	8.6	3.6	1.6	4.4	2.4	4.1	4.7
18 JUL	1.5	4.0	0.0	4.7	4.2	1.8	4.3	2.9
25 JUL	10.0	10.2	1.9	14.2	13.2	0.0	3.3	7.5
20 AUG	3.5	6.2	2.1	7.7	1.8	11.0	1.7	4.9
19 SEP	0.0	4.2	4.1	6.8	4.7	7.4	17.3	6.4
18 OCT	2.8	19.7	2.6	4.3	0.0	3.1	0.0	4.6
15 NOV	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.3
5 DEC	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.4
Mean	4.5	4.0	3.2	6.0	5.3	3.3	3.1	4.2

(a) Averaged over all three sampling depths--surface, middepth, and bottom.

Note: Dashes (--) indicate no data available because ice flows in the river prevented sampling.

TABLE D.3-5 SURFACE DENSITIES (No./1,000 m3) OF STRIPED BASS EGGS COLLECTED AT THE STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	10.5	41.6	76.2	0.0	0.0	12.2	54.8	27.9
30 MAY	0.0	0.0	0.0	227.7	0.0	0.0	0.0	32.5
05 JUN	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.9
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	0.5	2.1	3.8	11.4	0.0	1.0	2.7	3.1
Night								
21 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03 MAY	0.0	(A)	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	5.7	0.0	0.0	359.3	0.0	0.0	22.3	55.3
30 MAY	0.0	4.6	5.7	0.0	9.1	0.0	0.0	2.8
05 JUN	0.0	6.0	0.0	0.0	0.0	--	0.0	1.0
14 JUN	(A)	(A)	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	0.3	0.6	0.3	18.0	0.5	0.0	1.2	3.1

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

Note: Dashes (--) indicate no valid sample collected because of gear malfunction or inclement weather.

TABLE D.3-6 MIDDEPTH DENSITIES (No./1,000 m3) OF STRIPED BASS EGGS COLLECTED AT THE STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	7.0	0.0	0.0	0.0	1.0
24 MAY	26.8	14.8	64.0	0.0	42.4	239.7	228.5	88.0
30 MAY	0.0	0.0	0.0	171.7	0.0	6.7	0.0	25.5
05 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	1.3	0.7	3.2	8.9	2.2	13.0	11.4	5.8
Night								
21 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	--	0.0	0.0
03 MAY	0.0	0.0	0.0	0.0	0.0	0.0	(A)	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	--	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	15.7	6.8	0.0	732.6	0.0	0.0	0.0	107.9
30 MAY	0.0	5.6	0.0	0.0	0.0	0.0	0.0	0.8
05 JUN	0.0	0.0	0.0	6.5	0.0	0.0	0.0	0.9
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	0.8	0.7	0.0	37.0	0.0	0.0	0.0	5.7

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

Note: Dashes (--) indicate no valid sample because of gear malfunction or inclement weather.

TABLE D.3-7 BOTTOM DENSITIES (No./1,000 m3) OF STRIPED BASS EGGS COLLECTED AT THE STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	--	0.0	--	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	6.0	0.0	13.0	0.0	0.0	2.7
17 MAY	0.0	0.0	6.6	0.0	0.0	0.0	11.9	2.6
24 MAY	453.8	168.0	612.0	30.4	889.2	246.4	227.0	375.3
30 MAY	6.3	21.3	34.1	255.0	487.2	34.5	11.9	121.5
05 JUN	5.6	0.0	0.0	0.0	5.8	0.0	0.0	1.6
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	23.3	9.5	34.7	14.3	73.4	14.0	12.5	25.6
Night								
21 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03 MAY	0.0	0.0	0.0	(A)	0.0	0.0	(A)	0.0
10 MAY	6.1	0.0	12.2	13.1	0.0	0.0	0.0	4.5
17 MAY	37.4	0.0	0.0	14.8	0.0	0.0	0.0	7.5
24 MAY	129.8	638.3	93.8	688.8	188.9	0.0	1207.6	421.0
30 MAY	11.5	92.7	0.0	0.0	0.0	0.0	0.0	14.9
05 JUN	0.0	5.3	0.0	5.6	18.0	0.0	0.0	4.1
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	9.7	38.8	5.6	38.0	10.3	0.0	63.6	23.6

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

Note: Dashes (--) indicate no valid sample because of gear malfunction or inclement weather.

TABLE D.3-8 SURFACE DENSITIES (No./1,000 m3) OF STRIPED BASS YOLK-SAC LARVAE COLLECTED AT THE STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	21.1	0.0	0.0	0.0	0.0	0.0	0.0	3.0
30 MAY	0.0	0.0	0.0	13.0	0.0	0.0	0.0	1.9
05 JUN	0.0	0.0	0.0	0.0	12.3	6.0	0.0	2.6
14 JUN	7.3	0.0	0.0	0.0	0.0	30.9	0.0	5.5
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	1.4	0.0	0.0	0.6	0.6	1.9	0.0	0.7
Night								
21 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03 MAY	0.0	(A)	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	5.8	0.0	0.0	0.0	0.8
24 MAY	0.0	0.0	9.3	10.0	0.0	4.8	11.2	5.0
30 MAY	19.3	27.6	56.9	55.4	22.7	0.0	14.0	28.0
05 JUN	0.0	0.0	184.5	63.1	65.7	--	80.2	65.6
14 JUN	(A)	(A)	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	11.7	0.0	6.3	0.0	5.5	0.0	0.0	3.4
26 JUN	0.0	0.0	0.0	0.0	11.4	10.0	5.3	3.8
06 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	1.7	1.6	13.5	6.7	5.3	0.8	5.8	5.2

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

Note: Dashes (--) indicate no valid sample because of gear malfunction or inclement weather.

TABLE D.3-9 MIDDEPTH DENSITIES (No./1,000 m3) OF STRIPED BASS YOLK-SAC LARVAE COLLECTED AT THE STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	53.7	7.4	0.0	13.8	0.0	15.0	100.8	27.2
30 MAY	18.1	20.5	54.9	213.0	13.5	6.7	32.5	51.3
05 JUN	11.9	6.5	0.0	0.0	0.0	6.8	13.4	5.5
14 JUN	0.0	5.6	16.4	115.2	36.2	244.3	60.7	68.3
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	8.0	0.0	0.0	0.0	0.0	24.9	4.7
06 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	4.2	2.4	3.6	17.1	2.6	14.4	11.6	8.0
Night								
21 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	--	0.0	0.0
03 MAY	0.0	0.0	0.0	0.0	0.0	0.0	(A)	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	--	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	11.2	0.0	1.6
24 MAY	23.6	6.8	0.0	43.1	0.0	0.0	0.0	10.5
30 MAY	64.1	77.8	67.0	44.9	11.6	29.2	0.0	42.1
05 JUN	799.0	128.0	105.7	52.0	145.6	96.4	116.5	206.2
14 JUN	8.0	47.8	7.7	0.0	7.5	0.0	0.0	10.1
21 JUN	31.6	0.0	10.1	0.0	9.4	0.0	0.0	7.3
26 JUN	0.0	0.0	0.0	0.0	0.0	7.5	7.2	2.1
06 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	48.8	13.7	10.0	7.0	8.7	8.0	6.5	14.6

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

Note: Dashes (--) indicate no valid sample because of gear malfunction or inclement weather.

TABLE D.3-10 BOTTOM DENSITIES (No./1,000 m3) OF STRIPED BASS YOLK-SAC LARVAE COLLECTED AT THE STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	--	0.0	--	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	46.1	0.0	0.0	0.0	0.0	6.6
24 MAY	169.2	31.1	154.8	6.1	57.6	23.5	138.7	83.0
30 MAY	82.4	78.0	96.7	142.5	78.8	51.7	148.9	97.0
05 JUN	196.2	11.4	465.9	0.0	174.8	43.6	79.3	138.7
14 JUN	696.3	47.4	3.8	0.0	117.9	0.0	63.2	132.7
21 JUN	14.3	0.0	0.0	0.0	0.0	0.0	0.0	2.0
26 JUN	74.8	14.0	50.7	0.0	103.7	0.0	13.4	36.7
06 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[illegible] DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[illegible]	61.7	9.1	43.1	7.4	28.0	5.9	22.2	25.2
Night								
21 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03 MAY	0.0	0.0	0.0	(A)	0.0	0.0	(A)	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	14.8	0.0	0.0	0.0	2.1
24 MAY	71.4	87.6	5.5	34.4	27.0	5.6	71.8	43.3
30 MAY	149.9	109.0	56.2	20.6	10.7	26.7	5.6	54.1
05 JUN	1117.1	189.8	232.6	79.1	167.8	135.9	393.7	330.9
14 JUN	194.3	64.3	37.5	16.2	0.0	11.5	0.0	46.3
21 JUN	60.8	0.0	0.0	0.0	0.0	0.0	0.0	8.7
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.7
06 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	83.9	23.7	17.5	8.7	10.3	9.5	25.1	25.4

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

Note: Dashes (--) indicate no valid sample because of gear malfunction or inclement weather.

TABLE D.3-11 SURFACE DENSITIES (No./1,000 m3) OF STRIPED BASS POST YOLK-SAC LARVAE COLLECTED AT THE STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
05 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	4.6	0.0	12.4	5.5	3.2
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	0.0	0.0	0.0	0.2	0.0	0.7	0.3	0.2
Night								
21 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03 MAY	0.0	(A)	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 MAY	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.6
05 JUN	6.1	0.0	268.3	78.8	758.2	--	345.9	242.9
14 JUN	(A)	(A)	819.1	248.6	96.4	251.2	46.5	292.4
21 JUN	158.1	58.8	269.9	68.1	38.6	0.0	21.5	87.9
26 JUN	60.0	40.5	40.8	15.3	102.3	0.0	15.8	39.2
06 JUL	0.0	6.1	0.0	9.5	0.0	5.1	0.0	3.0
10 JUL	0.0	8.9	0.0	0.0	0.0	0.0	0.0	1.3
18 JUL	0.0	5.1	0.0	0.0	0.0	0.0	0.0	0.7
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	12.5	7.0	73.6	21.0	50.0	13.5	22.6	29.2

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

Note: Dashes (--) indicate no valid sample because of gear malfunction or inclement weather.

E D.3-12 MIDDEPTH DENSITIES (No./1,000 m3) OF STRIPED BASS POST YOLK-SAC LARVAE COLLECTED AT THE STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 MAY	0.0	0.0	12.2	0.0	0.0	0.0	0.0	1.7
05 JUN	262.2	19.5	20.1	28.0	7.3	88.2	60.2	69.4
14 JUN	541.6	11.3	180.5	253.5	29.0	872.4	257.8	306.6
21 JUN	56.8	27.8	0.0	33.7	15.1	0.0	0.0	19.1
26 JUN	23.7	20.1	8.0	7.8	0.0	17.0	215.4	41.7
06 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	7.8	0.0	0.0	0.0	0.0	0.0	1.1
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	44.2	4.3	11.0	16.1	2.7	51.5	26.7	22.3
Night								
21 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	--	0.0	0.0
03 MAY	0.0	0.0	0.0	0.0	0.0	0.0	(A)	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	--	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	6.6	0.0	0.9
30 MAY	11.7	0.0	0.0	0.0	0.0	0.0	6.4	2.6
05 JUN	201.5	202.1	52.8	52.0	284.5	257.1	449.5	214.2
14 JUN	543.7	573.6	378.2	359.7	291.2	1378.5	261.8	541.0
21 JUN	372.9	251.6	537.3	108.0	594.8	70.0	296.3	318.7
26 JUN	8.2	46.5	62.7	63.8	124.6	60.3	71.6	62.5
06 JUL	6.1	13.2	0.0	6.1	12.8	0.0	0.0	5.5
10 JUL	0.0	0.0	7.9	0.0	0.0	0.0	0.0	1.1
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	60.2	57.2	54.7	29.5	65.4	98.5	57.1	59.9

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

Note: Dashes (--) indicate no valid sample because of gear malfunction or inclement weather.

TABLE D.3-13 BOTTOM DENSITIES (No./1,000 m3) OF STRIPED BASS POST YOLK-SAC LARVAE COLLECTED AT THE STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	--	0.0	--	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 MAY	6.3	0.0	11.4	7.5	0.0	0.0	17.9	6.2
05 JUN	157.0	57.1	232.9	17.2	64.1	120.0	130.2	111.2
14 JUN	1183.0	815.5	234.2	293.3	342.5	1420.3	305.5	656.3
21 JUN	913.6	208.5	64.6	164.9	238.3	57.2	19.8	238.1
26 JUN	63.3	34.9	95.0	122.9	376.0	6.8	73.8	110.4
06 JUL	12.7	0.0	5.3	0.0	0.0	0.0	4.5	3.2
10 JUL	6.9	5.2	6.1	33.8	5.9	0.0	6.7	9.2
18 JUL	0.0	0.0	0.0	0.0	6.4	0.0	0.0	0.9
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	117.1	56.1	34.2	32.0	54.4	80.2	27.9	57.6
Night								
21 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03 MAY	0.0	0.0	0.0	(A)	0.0	0.0	(A)	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
05 JUN	54.5	237.3	121.8	22.6	197.8	157.6	69.8	123.1
14 JUN	788.5	929.0	493.3	621.7	441.7	635.7	541.8	636.0
21 JUN	374.8	219.3	362.7	72.6	823.1	49.5	208.9	301.6
26 JUN	166.3	95.4	194.3	77.3	129.9	82.1	163.5	129.8
06 JUL	9.6	0.0	15.2	22.4	5.2	0.0	0.0	7.5
10 JUL	6.0	19.9	0.0	0.0	6.5	0.0	6.1	5.5
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	73.7	79.0	62.5	43.0	80.2	48.7	52.1	62.9

(a) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.1.3).

Note: Dashes (--) indicate no valid sample because of gear malfunction or inclement weather.

TABLE D.3-14 MEAN DENSITIES (No./1,000 m^3) OF STRIPED BASS JUVENILES COLLECTED AT THE STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.3
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Night								
29 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(a) Densities averaged over all three sampling depths--surface, middepth, and bottom.

Note: Dashes (--) indicate no valid sample because of gear malfunction or inclement weather.

TABLE D.3-15 MEAN DENSITIES (No./1,000 m3) OF WHITE PERCH EGGS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	5.1	3.8	2.5	2.0	0.0	2.0	4.2	2.8
31 MAY	0.0	0.0	0.0	0.0	0.0	19.2	0.0	2.7
5 JUN	0.0	0.0	0.0	1.9	11.7	0.0	0.0	1.9
14 JUN	0.0	0.0	0.0	0.0	0.0	1.8	5.3	1.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	0.3	0.2	0.1	0.2	0.6	1.1	0.5	0.4
Night								
29 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	1.8	0.0	0.0	5.5	4.0	0.0	6.6	2.7
14 JUN	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.3
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	0.1	0.0	0.0	0.3	0.2	0.1	0.3	0.1

(a) Averaged over all three depths--surface, middepth, and bottom.

Note: Dashes (--) indicate data not available because ice flows in the river prevented sampling.

TABLE D.3-16 MEAN DENSITIES (No./1,000 m3) OF WHITE PERCH YOLK-SAC LARVAE COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	7.4	1.9	2.2	7.0	2.6
24 MAY	84.7	38.4	40.1	14.7	24.8	8.4	27.4	34.1
31 MAY	18.8	23.5	10.3	17.9	9.4	9.6	9.9	14.2
5 JUN	7.7	2.2	38.7	4.2	45.3	53.4	194.4	49.4
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	10.3	1.5
21 JUN	7.9	0.0	1.8	0.0	2.0	0.0	1.7	1.9
26 JUN	5.8	0.0	7.4	3.7	10.8	0.0	6.4	4.9
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.3
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	6.2	3.2	5.0	2.5	4.8	3.7	12.9	5.5
Night								
29 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	11.7	1.9	0.0	4.9	0.0	0.0	0.0	2.6
24 MAY	29.5	12.7	3.8	20.3	15.7	16.3	20.7	17.0
30 MAY	25.4	14.3	1.9	3.4	11.0	15.6	50.0	17.4
5 JUN	18.5	15.0	25.5	14.4	26.3	102.4	130.1	44.7
14 JUN	0.0	2.9	1.8	7.5	9.4	28.4	8.3	9.0
21 JUN	0.0	5.9	0.0	8.4	19.1	3.6	16.6	7.6
26 JUN	4.1	4.6	18.7	10.3	17.6	0.0	10.7	9.4
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	4.8	3.1	2.7	3.5	5.0	7.0	12.2	5.5

(a) Averaged over all three depths--surface, middepth, and bottom.

Note: Dashes (--) indicate data not available because ice flows in the river prevented sampling.

TABLE D.3-17 MEAN DENSITIES (No./1,000 m3) OF WHITE PERCH POST YOLK-SAC LARVAE COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	106.8	52.1	78.0	58.1	55.4	21.7	33.4	57.9
31 MAY	154.7	179.3	250.1	123.9	327.8	333.7	474.3	263.4
5 JUN	220.2	108.9	183.9	29.6	83.1	437.2	315.5	196.9
14 JUN	221.5	58.5	67.9	32.2	220.3	55.0	190.7	120.9
21 JUN	160.7	271.5	186.4	171.1	91.3	35.5	44.1	137.2
26 JUN	34.6	10.2	8.4	27.2	70.8	90.8	148.3	55.8
6 JUL	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3
10 JUL	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.3
18 JUL	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.3
25 JUL	0.0	2.9	0.0	0.0	0.0	0.0	0.0	0.4
22 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	45.0	34.2	39.5	22.1	43.3	48.7	60.3	41.9
Night								
29 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	95.1	58.0	35.1	37.3	56.5	57.6	42.3	54.6
30 MAY	352.2	140.6	190.0	66.2	43.5	330.4	355.7	211.2
5 JUN	173.6	158.5	276.1	91.1	580.2	305.3	326.6	271.4
14 JUN	254.8	274.6	92.5	118.1	102.8	430.2	207.1	205.8
21 JUN	130.4	102.8	125.7	54.8	263.8	140.0	199.5	145.3
26 JUN	44.9	39.2	92.1	49.1	135.4	86.5	76.2	74.8
6 JUL	0.0	2.2	0.0	4.5	1.7	0.0	0.0	1.2
10 JUL	2.0	2.2	6.7	4.4	0.0	0.0	3.9	2.7
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	51.9	37.5	43.1	21.6	59.2	65.7	62.7	48.8

(a) Averaged over all three depths--surface, middepth, and bottom.

Note: Dashes (--) indicate data not available because ice flows in the river prevented sampling.

TABLE D.3-18 MEAN DENSITIES (No./1,000 m3) OF *ALOSA* SPP. EGGS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 MAY	0.0	0.0	0.0	9.2	0.0	0.0	0.0	1.3
12 MAY	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.3
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	7.7	0.0	0.0	0.0	0.0	0.0	0.0	1.1
31 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	0.4	0.0	0.0	0.6	0.0	0.0	0.0	0.1
Night								
29 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 MAY	0.0	0.0	0.0	3.5	0.0	0.0	0.0	0.4
10 MAY	0.0	0.0	0.0	24.0	0.0	0.0	0.0	3.6
17 MAY	0.0	4.6	0.0	0.0	0.0	0.0	0.0	0.7
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	0.0	0.3	0.0	1.3	0.0	0.0	0.0	0.2

(a) Averaged over all three depths--surface, middepth, and bottom.

Note: Dashes (--) indicate data not available because ice flows in the river prevented sampling.

TABLE D.3-19 MEAN DENSITIES (No./1,000 m3) OF ALOSA SPP. YOLK-SAC LARVAE COLLECTED AT STANDARD RIVER STATIONS IN THE VCINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 MAY	2.0	2.3	4.0	4.5	0.0	0.0	0.0	1.8
17 MAY	25.9	10.7	38.4	17.4	40.2	2.2	11.0	20.8
24 MAY	5.1	6.2	0.0	2.0	6.4	0.0	17.2	5.3
31 MAY	0.0	7.1	1.9	12.3	0.0	2.2	2.0	3.6
5 JUN	4.0	0.0	4.0	4.2	0.0	0.0	1.9	2.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	1.9	1.3	2.5	2.0	2.4	0.2	1.6	1.7
Night								
29 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	4.1	0.0	2.4	0.0	1.8	1.2
17 MAY	6.9	6.2	6.2	14.6	12.4	6.7	3.8	8.1
24 MAY	11.3	6.3	0.0	4.3	2.2	1.9	10.9	5.3
30 MAY	0.0	3.7	4.5	0.0	1.8	1.9	2.1	2.0
5 JUN	25.9	2.0	3.7	0.0	4.0	0.0	3.5	5.9
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	2.4	1.0	1.0	1.0	1.1	0.6	1.1	1.2

(a) Averaged over all three depths--surface, middepth, and bottom.

Note: Dashes (--) indicate data not available because ice flows in the river prevented sampling.

TABLE D.3-20 MEAN DENSITIES (No./1,000 m3) OF ALOSA SPP. POST YOLK-SAC LARVAE COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 MAY	7.9	4.6	0.0	4.5	2.2	2.4	2.3	3.4
17 MAY	19.3	4.4	19.7	34.6	22.0	7.6	56.7	23.5
24 MAY	252.3	87.9	65.0	55.3	65.9	38.3	89.1	93.4
31 MAY	121.7	430.4	434.8	355.4	972.4	300.8	1446.8	580.3
5 JUN	218.2	177.2	82.1	119.3	137.8	66.5	185.3	140.9
14 JUN	300.2	429.4	686.1	203.2	458.4	132.2	987.8	456.8
21 JUN	15.1	18.0	38.8	0.0	2.5	7.7	3.3	12.2
26 JUN	7.3	5.7	2.0	0.0	9.0	0.0	0.0	3.4
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 DEC	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.3
MEAN	47.1	58.0	67.6	38.6	84.9	27.8	138.6	66.0
Night								
29 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	2.0	4.7	4.9	2.2	7.7	0.0	2.1	3.5
17 MAY	7.5	11.8	0.0	23.9	10.8	6.0	7.5	9.6
24 MAY	48.9	217.1	35.0	229.6	41.1	21.8	196.7	112.9
30 MAY	650.1	315.1	145.0	62.5	286.9	38.0	421.8	274.2
5 JUN	652.9	674.3	465.3	1053.0	466.0	76.4	62.7	513.8
14 JUN	385.1	378.4	558.3	640.6	527.1	65.5	675.6	469.9
21 JUN	66.3	76.6	27.1	37.8	9.6	1.8	9.2	32.6
26 JUN	1.8	2.0	5.7	4.0	0.0	0.0	0.0	1.9
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	90.3	84.8	65.3	104.4	67.5	9.7	71.2	70.5

(a) Averaged over all three depths--surface, middepth, and bottom.

Note: Dashes (--) indicate data not available because ice flows in the river prevented sampling.

TABLE D.3-21 MEAN DENSITIES (No./1,000 m3) OF ALOSA SPP. JUVENILES COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.3
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.3
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.4
4 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.0
Night								
29 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	4.1	2.0	2.6	2.0	0.0	0.0	0.0	1.5
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	4.9	0.0	0.0	0.0	2.4	4.1	1.6
18 JUL	0.0	2.0	0.0	2.3	2.1	1.8	4.3	1.8
25 JUL	2.0	2.2	0.0	1.4	0.0	0.0	0.0	0.8
20 AUG	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.3
19 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 OCT	2.8	19.7	0.0	4.3	0.0	3.1	0.0	4.3
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	0.6	1.7	0.1	0.5	0.1	0.4	0.4	0.5

(a) Averaged over all three depths--surface, middepth, and bottom.

Note: Dashes (--) indicate data not available because ice flows in the river prevented sampling.

TABLE D.3-22 MEAN DENSITIES (No./1,000 m3) OF ATLANTIC TOMCOD YOLK-SAC LARVAE COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	56.7	54.4	36.7	47.8	25.6	25.7	17.8	38.5
20 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	2.8	2.7	1.2	2.4	0.9	1.3	0.9	1.8
Night								
29 MAR	--	--	--	14.9	11.7	20.1	6.6	13.3
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	0.0	0.0	0.0	0.8	0.6	1.1	0.3	0.4

(a) Averaged over all three depths--surface, middepth, and bottom.

Note: Dashes (--) indicate data not available because ice flows in the river prevented sampling.

TABLE D.3-23 MEAN DENSITIES (No./1,000 m3) OF ATLANTIC TOMCOD POST YOLK-SAC LARVAE COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	298.3	90.7	210.4	139.1	178.1	567.4	538.3	298.9
20 APR	843.7	61.8	459.8	331.6	461.1	92.5	667.8	416.9
5 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	2.2	1.9	1.9	0.0	2.0	1.1
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	57.1	7.6	30.6	23.6	29.6	33.0	60.4	34.6
Night								
29 MAR	--	--	--	52.7	34.2	40.4	39.3	41.6
18 APR	281.0	206.4	467.8	195.5	247.2	274.4	158.6	260.9
3 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	15.1	11.3	24.6	12.6	14.1	11.8	10.2	14.2

(a) Averaged over all three depths--surface, middepth, and bottom.

Note: Dashes (--) indicate data not available because ice flows in the river prevented sampling.

TABLE D.3-24 MEAN DENSITIES (No./1,000 m3) OF ATLANTIC TOMCOD JUVENILES COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 APR	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.5
5 MAY	2.8	0.0	0.0	0.0	0.0	9.2	0.0	1.7
12 MAY	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.3
17 MAY	0.0	0.0	6.6	83.5	24.9	0.0	35.6	21.5
24 MAY	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.7
31 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.3
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.3
25 JUL	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.3
22 AUG	0.0	0.0	0.0	0.0	0.0	0.0	4.9	0.7
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	0.6	0.1	0.3	4.4	1.4	0.5	2.0	1.3
Night								
29 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 MAY	0.0	0.0	2.3	3.5	2.3	1.8	0.0	1.5
10 MAY	0.0	0.0	0.0	2.2	0.0	0.0	4.2	0.9
17 MAY	5.0	0.0	0.0	19.7	21.5	0.0	0.0	6.6
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.3
30 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	1.8	0.0	0.0	0.0	0.0	2.7	0.0	0.5
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.3
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.3
19 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	0.4	0.1	0.2	1.2	1.2	0.2	0.3	0.5

(a) Averaged over all three depths--surface, middepth, and bottom.

Note: Dashes (--) indicate data not available because ice flows in the river prevented sampling.

TABLE D.3-25 MEAN DENSITIES (No./1,000 m^3) OF BAY ANCHOVY EGGS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	92.9	591.7	492.0	60.0	2403.7	9713.5	501.6	1979.4
10 JUL	149.3	102.5	1447.5	3371.3	4202.6	4144.0	4066.0	2497.6
18 JUL	0.0	8.6	11.2	3.2	132.1	2024.8	326.5	358.1
25 JUL	4.0	2.1	27.8	139.0	655.4	168.2	263.7	180.0
22 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	12.3	35.2	100.6	178.7	376.0	802.5	257.9	252.0
Night								
29 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.2
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	1528.6	418.4	54.6	3648.9	2493.9	184.5	3309.2	1662.6
10 JUL	75.6	5765.8	133.6	1152.8	3205.8	2539.2	4330.5	2457.6
18 JUL	849.1	108.0	661.9	996.3	2294.7	248.7	416.2	796.4
25 JUL	3.0	0.0	1.9	0.0	53.5	406.5	289.5	107.8
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.2
19 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	131.7	343.2	44.8	294.8	402.4	177.8	431.8	262.5

(a) Averaged over all three depths--surface, middepth, and bottom.

Note: Dashes (--) indicate data not available because ice flows in the river prevented sampling.

TABLE D.3-26 MEAN DENSITIES (No./1,000 m3) OF BAY ANCHOVY YOLK-SAC LARVAE COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.4
6 JUL	0.0	3.6	10.4	1.7	0.0	0.0	12.0	4.0
10 JUL	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.3
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	16.0	0.0	2.1	0.0	2.6
22 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	0.0	0.2	0.5	1.0	0.0	0.2	0.6	0.4
Night								
29 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	16.0	4.1	12.8	10.6	15.6	1.6	0.0	8.7
10 JUL	0.0	0.0	4.2	0.0	0.0	2.1	0.0	0.9
18 JUL	0.0	0.0	36.7	21.9	6.3	8.9	2.1	10.8
25 JUL	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.4
20 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN	0.9	0.2	3.0	1.7	1.1	0.7	0.1	1.1

(a) Averaged over all three depths--surface, middepth, and bottom.

Note: Dashes (--) indicate data not available because ice flows in the river prevented sampling.

TABLE D.3-27 MEAN DENSITIES (No./1,000 m3) OF BAY ANCHOVY POST YOLK-SAC LARVAE COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	77.3	13.2	12.3	8.2	58.8	39.6	58.7	38.3
26 JUN	0.0	0.0	0.0	0.0	0.0	25.4	5.0	4.3
6 JUL	246.1	467.7	372.4	232.9	150.8	111.4	156.5	248.2
10 JUL	449.8	116.4	772.9	1408.1	853.5	1182.7	966.5	821.4
18 JUL	673.8	402.3	662.7	969.5	1743.3	605.7	926.1	854.8
25 JUL	304.3	371.7	712.9	590.6	494.4	522.4	592.3	512.7
22 AUG	37.8	6.0	2.0	0.0	7.5	57.2	5.3	16.5
18 SEP	34.2	6.5	84.3	39.5	7.4	23.9	20.9	31.0
17 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 NOV	0.0	0.0	2.0	0.0	2.4	4.1	0.0	1.2
4 DEC	2.3	0.0	0.0	2.8	0.0	1.9	7.8	2.1
MEAN	91.3	69.2	133.3	162.6	168.7	128.7	136.9	127.1
Night								
29 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	4.1	0.0	3.4	3.8	8.0	0.0	5.1	3.5
26 JUN	0.0	0.0	0.0	1.7	13.1	5.9	3.3	3.4
6 JUL	436.8	110.1	211.7	182.9	480.7	242.1	681.4	335.1
10 JUL	350.1	3690.8	973.7	5603.7	4693.6	586.5	3684.5	2797.6
18 JUL	1390.3	885.8	1683.7	439.6	999.3	735.5	744.6	982.7
25 JUL	292.8	302.3	292.5	465.8	830.2	724.1	917.1	546.4
20 AUG	41.9	16.0	12.5	6.4	26.9	71.6	145.2	45.8
19 SEP	14.4	48.5	32.1	7.0	60.6	65.3	39.4	38.2
18 OCT	0.0	0.0	5.8	0.0	2.1	2.4	0.0	1.5
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.3
5 DEC	0.0	0.0	0.0	0.0	2.8	2.7	0.0	0.8
MEAN	135.6	275.7	169.2	341.2	355.9	128.2	321.9	248.4

(a) Averaged over all three depths--surface, middepth, and bottom.

Note: Dashes (--) indicate data not available because ice flows in the river prevented sampling.

TABLE D.3-28 MEAN DENSITIES (No./1,000 m3) OF BAY ANCHOVY JUVENILES COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

DATE	STATION A	B	C	D	E	F	G	MEAN
Day								
21 MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 OCT	0.0	0.0	0.0	2.8	0.0	0.0	0.0	0.4
14 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 DEC	0.0	0.0	0.0	2.4	2.1	1.9	0.0	0.9
MEAN	0.0	0.0	0.0	0.3	0.1	0.1	0.0	0.1
Night								
29 MAR	--	--	--	0.0	0.0	0.0	0.0	0.0
18 APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 JUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 AUG	0.0	0.0	0.0	0.0	1.8	9.0	1.7	1.8
19 SEP	0.0	4.2	4.1	6.8	4.7	7.4	17.3	6.4
18 OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 DEC	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.4
MEAN	0.0	0.2	0.2	0.3	0.3	1.0	1.0	0.4

(a) Averaged over all three depths--surface, middepth, and bottom.

Note: Dashes (--) indicate data not available because ice flows in the river prevented sampling.

APPENDIX E

ANALYSIS OF VARIANCE FOR SELECTED TAXA COLLECTED AT STANDARD RIVER STATIONS, INDIAN POINT GENERATING STATION, 1978

APPENDIX E TABLES

Title	Number
E.1 MICROZOOPLANKTON ANALYSIS OF VARIANCE	
Total Crustaceans	E.1-1
Total Rotifers	E.1-2
Total Copepods	E.1-3
Acartia tonsa (copepodids and adults)	E.1-4
Eurytemora affinis (copepodids and adults)	E.1-5
Total Cladocerans	E.1-6
Bosmina longirostris	E.1-7
Diaphanosoma brachyurum	E.1-8
Cyclops bicuspidatus	E.1-9
Halicyclops fosteri	E.1-10
E.2 MACROZOOPLANKTON ANALYSIS OF VARIANCE	
Gammarus spp.	E.2-1
Neomysis americana	E.2-2
Monoculodes edwardsi	E.2-3
Chaoborus punctipennis	E.2-4
E.3 ICHTHYOPLANKTON ANALYSIS OF VARIANCE	
Striped Bass Eggs	E.3-1
Striped Bass Yolk-Sac Larvae	E.3-2
Striped Bass Post Yolk-Sac Larvae	E.3-3

TABLE E.1-1 ANALYSIS OF VARIANCE FOR TOTAL CRUSTACEANS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F	Probability of a Larger F[b]
A	15	21.5708	1.4380	24.46	$P<0.001$
B	6	0.7920	0.1320	2.24	$0.025<P<0.05$
C	1	0.9157	0.9157	15.57	$P<0.001$
AXB	90	6.9079	0.0768	1.31	$0.05<P<0.10$
AXC	15	1.4984	0.0999	1.70	$0.05<P<0.10$
BXC	6	0.1966	0.0328	0.56	$P>0.75$
Error	90	5.2936	0.0588		
Total	223	37.1751			

(a) After logarithmic transformation.
(b) $P \leq 0.05$ is significant.

Note: A = date, B = station, C = day/night.

TABLE E.1-2 ANALYSIS OF VARIANCE FOR TOTAL ROTIFERS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F	Probability of a Larger F[b]
A	15	45.5197	3.0346	71.03	P<0.001
B	6	0.6834	0.1139	2.67	0.01<P<0.025
C	1	0.6526	0.6526	15.28	P<0.001
AXB	90	7.1607	0.0796	1.86	0.001<P<0.005
AXC	15	2.7533	0.1836	4.30	P<0.001
BXC	6	0.1909	0.0318	0.74	0.50<P<0.75
Error	90	3.8450	0.0427		
Total	223	60.8056			

(a) After logarithmic transformation.
(b) $P \leq 0.05$ is significant.

Note: A = date, B = station, C = day/night.

TABLE E.1-3 ANALYSIS OF VARIANCE FOR TOTAL COPEPODS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F	Probability of a Larger F[b]
A	15	21.2930	1.4195	23.94	P<0.001
B	6	0.8028	0.1338	2.26	0.01<P<0.05
C	1	0.9456	0.9456	15.95	P<0.001
AXB	90	7.0191	0.0780	1.32	0.10<P<0.25
AXC	15	1.5363	0.1024	1.73	0.01<P<0.05
BXC	6	0.2053	0.0342	0.58	0.50<P<0.75
Error	90	5.3358	0.0593		
Total	223	37.1379			

(a) After logarithmic transformation.
(b) $P \leq 0.05$ is significant.

Note: A = date, B = station, C = day/night.

TABLE E.1-4 ANALYSIS OF VARIANCE FOR *ACARTIA TONSA* COPEPODIDS AND ADULTS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F	Probability of a Larger F[b]
A	11	16.1888	1.4717	33.68	P<0.001
B	6	0.9792	0.1632	3.73	0.001<P<0.005
C	1	1.1698	1.1698	26.77	P<0.001
AXB	66	2.3437	0.0355	0.81	P>0.75
AXC	11	0.7555	0.0687	1.57	0.10<P<0.25
BXC	6	0.4739	0.0790	1.81	0.10<P<0.25
Error	66	2.8828	0.0437		
Total	167	24.7936			

(a) After logarithmic transformation.
(b) $P \leq 0.05$ is significant.

Note: A = date, B = station, C = day/night.

TABLE E.1-5 ANALYSIS OF VARIANCE FOR *EURYTEMORA AFFINIS* COPEPODIDS AND ADULTS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F	Probability of a Larger F[b]
A	15	9.3481	0.6232	16.86	P<0.001
B	6	0.3224	0.0537	1.45	0.10<P<0.25
C	1	0.0145	0.0145	0.39	0.50<P<0.75
AXB	90	1.2979	0.0144	0.39	P>0.75
AXC	15	1.3476	0.0898	2.43	0.005<P<0.01
BXC	6	0.1378	0.0230	0.62	0.50<P<0.75
Error	90	3.3270	0.0370		
Total	223	15.7953			

(a) After logarithmic transformation.
(b) $P \leq 0.05$ is significant.

Note: A = date, B = station, C = day/night.

TABLE E.1-6 ANALYSIS OF VARIANCE FOR TOTAL CLADOCERANS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F	Probability of a Larger F[b]
A	14	6.4872	0.4634	60.97	$P<0.001$
B	6	0.0949	0.0158	2.08	$0.05<P<0.10$
C	1	0.0466	0.0466	6.13	$0.01<P<0.025$
AXB	84	1.1062	0.0132	1.74	$0.005<P<0.01$
AXC	14	0.2486	0.0178	2.34	$0.005<P<0.01$
BXC	6	0.0550	0.0092	1.21	$0.25<P<0.50$
Error	84	0.6380	0.0076		
Total	209	8.6765			

(a) After logarithmic transformation.
(b) $P \leq 0.05$ is significant.

Note: A = date, B = station, C = day/night.

TABLE E.1-7 ANALYSIS OF VARIANCE FOR *BOSMINA LONGIROSTRIS* COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F	Probability of a Larger F[b]
A	9	1.5327	0.1703	29.36	P<0.001
B	6	0.0223	0.0037	0.64	0.50<P<0.75
C	1	0.00003	0.00003	0.01	P>0.75
AXB	54	0.3385	0.0063	1.09	0.25<P<0.50
AXC	9	0.0640	0.0071	1.22	0.25<P<0.50
BXC	6	0.0414	0.0069	1.19	0.25<P<0.50
Error	54	0.3120	0.0058		
Total	139	0.7574			

(a) After logarithmic transformation.
(b) $P \leq 0.05$ is significant.

Note: A = date, B = station, C = day/night.

TABLE E.1-8 ANALYSIS OF VARIANCE FOR *DIAPHANOSOMA BRACHYURUM* COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F	Probability of a Larger F[b]
A	7	0.6229	0.0890	16.48	P<0.001
B	6	0.1034	0.0172	3.19	0.01<P<0.025
C	1	0.0750	0.0750	13.89	P<0.001
AXB	42	0.6651	0.0158	2.93	P<0.001
AXC	7	0.1505	0.0215	3.98	0.001<P<0.005
BXC	6	0.0295	0.0049	0.91	0.25<P<0.50
Error	42	0.2262	0.0054		
Total	111	1.8726			

(a) After logarithmic transformation.
(b) $P \leq 0.05$ is significant.

Note: A = date, B = station, C = day/night.

TABLE E.1-9 ANALYSIS OF VARIANCE FOR *CYCLOPS BICUSPIDATUS* COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F	Probability of a Larger F[b]
A	4	0.1337	0.0334	6.82	$P<0.001$
B	6	0.0390	0.0065	1.33	$0.10<P<0.25$
C	1	0.0011	0.0011	0.22	$0.50<P<0.75$
AXB	24	0.1505	0.0063	1.29	$0.25<P<0.50$
AXC	4	0.0025	0.0006	0.12	$P>0.75$
BXC	6	0.0406	0.0077	11.57	$0.10<P<0.25$
Error	24	0.1179	0.0049		
Total	69	0.4908			

(a) After logarithmic transformation.
(b) $P \leq 0.05$ is significant.

Note: A = date, B = station, C = day/night.

TABLE E.1-10 ANALYSIS OF VARIANCE FOR HALICYCLOPS FOSTERI COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F	Probability of a Larger F[b]
A	13	4.3586	0.3353	31.93	P<0.001
B	6	0.0973	0.0162	1.54	0.10<P<0.25
C	1	0.0045	0.0045	0.43	0.50<P<0.75
AXB	78	2.0383	0.0261	2.49	P<0.001
AXC	13	0.5541	0.0426	4.06	P<0.001
BXC	6	0.0534	0.0089	0.85	0.50<P<0.75
Error	78	0.8230	0.0105		
Total	195	7.9282			

(a) After logarithmic transformation.
(b) $P \leq 0.05$ is significant.

Note: A = date, B = station, C = day/night.

TABLE E.2-1 ANALYSIS OF VARIANCE FOR GAMMARUS SPP. COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F	Probability of a Larger F[b]
A	15	891.9841	59.47	30.76	P<0.0001
B	6	97.0137	16.17	8.36	P<0.0001
C	1	1,399.0278	1,399.03	723.69	P<0.0001
D	2	1,161.0656	580.53	300.30	P<0.0001
AXB	90	235.7409	2.62	1.35	P=0.0243
AXC	15	185.2250	12.35	6.39	P<0.0001
AXD	30	167.3228	5.58	2.89	P<0.0001
BXC	6	21.3319	3.55	1.84	P=0.0898
BXD	12	20.5105	1.71	0.88	P=0.5632
CXD	2	330.1039	165.05	85.38	P=0.0001
Error	485	937.5967	1.93		
Total	664	5,446.9228			

(a) After logarithmic transformation.
(b) $P \leq 0.05$ is significant.

Note: A = date, B = station, C = day/night, D = depth.

TABLE E.2-2 ANALYSIS OF VARIANCE FOR *NEOMYSIS AMERICANA* COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F	Probability of a Larger F[b]
A	15	3,692.1740	246.14	117.86	P<0.0001
B	6	28.4721	4.74	2.27	P=0.0358
C	1	994.5661	994.57	476.21	P<0.0001
D	2	764.1866	382.10	182.95	P<0.0001
AXB	90	273.3494	3.04	1.45	P=0.0073
AXC	15	383.6258	25.56	12.25	P<0.0001
AXD	30	316.9863	10.57	5.06	P<0.0001
BXC	6	51.6241	8.60	4.12	P=0.0005
BXD	12	27.8676	2.32	1.11	P=0.3478
CXD	2	476.4586	238.23	114.07	P=0.0001
Error	485	1,012.9317	2.09		
Total	664	8,022.2421			

(a) After logarithmic transformation.
(b) $P \leq 0.05$ is significant.

Note: A = date, B = station, C = day/night, D = depth.

TABLE E.2-3 ANALYSIS OF VARIANCE FOR MONOCULODES EDWARDSI COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F	Probability of a Larger F[b]
A	15	775.6819	51.71	36.16	P<0.0001
B	6	29.0742	4.85	3.39	P=0.0028
C	1	1,179.6893	1,179.69	825.02	P<0.0001
D	2	1,076.6867	538.34	376.49	P<0.0001
AXB	90	143.1983	1.59	1.11	P=0.2411
AXC	15	236.7035	15.78	11.04	P<0.0001
AXD	30	147.0072	4.90	3.43	P<0.0001
BXC	6	15.9939	2.67	1.86	P=0.0852
BXD	12	19.3728	1.61	1.13	P=0.3338
CXD	2	236.3897	118.19	82.66	P=0.0001
Error	485	693.5001	1.43		
Total	664				

(a) After logarithmic transformation.
(b) $P \leq 0.05$ is significant.

Note: A = date, B = station, C = day/night, D = depth.

TABLE E.2-4 ANALYSIS OF VARIANCE FOR CHAOBORUS PUNCTIPENNIS LARVAE AND PUPAE COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F	Probability of a Larger F[b]
A	15	1,308.5156	87.23	68.38	P<0.0001
B	6	52.3503	8.73	6.84	P<0.0001
C	1	237.0034	237.00	185.77	P<0.0001
D	2	155.4961	77.75	60.94	P<0.0001
AXB	90	155.4450	1.73	1.35	P=0.0247
AXC	15	84.1219	5.61	4.40	P<0.0001
AXD	30	133.5605	4.45	3.49	P<0.0001
BXC	6	13.8907	2.32	1.81	P=0.0944
BXD	12	22.6858	1.89	1.48	P=0.1270
CXD	2	26.5107	13.26	10.39	P<0.0001
Error	485	618.7636	1.28		
Total	664	2,808.3435			

(a) After logarithmic transformation.
(b) $P \leq 0.05$ is significant.

Note: A = date, B = station, C = day/night, D = depth.

TABLE E.3-1 ANALYSIS OF VARIANCE FOR STRIPED BASS EGGS COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F	Probability of a Larger F[b]
A	4	277.0337	69.26	39.65	P<0.0001
B	6	13.3975	2.23	1.28	P<0.2712
C	1	8.0666	8.07	4.62	P<0.0334
D	2	85.3347	42.68	24.43	P<0.0001
AXB	24	32.5130	1.35	0.78	P=0.7617
AXC	4	19.4923	4.87	2.79	P=0.0288
AXD	8	39.7911	4.97	2.85	P=0.0059
BXC	6	24.7528	4.13	2.36	P=0.0334
BXD	12	16.4015	1.37	0.78	P=0.6677
CXD	2	1.4978	0.75	0.43	P=0.6522
Error	138	241.0561	1.75		
Total	207	759.3372			

(a) After logarithmic transformation.
(b) $P \leq 0.05$ is significant.

Note: A = date, B = station, C = day/night, D = depth.

TABLE E.3-2 ANALYSIS OF VARIANCE FOR STRIPED BASS YOLK-SAC LARVAE COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F	Probability of a Larger F[b]
A	6	347.5119	57.92	37.07	P<0.0001
B	6	20.6682	3.44	2.20	P=0.440
C	1	8.2223	8.22	5.26	P=0.0228
D	2	132.8776	66.44	42.53	P<0.0001
AXB	36	86.9902	2.42	1.55	P=0.0326
AXC	6	78.9602	13.16	8.42	P<0.0001
AXD	12	69.3346	5.78	3.70	P<0.0001
BXC	6	9.3873	1.56	1.00	P=0.4255
BXD	12	37.1130	3.09	1.98	P=0.0277
CXD	2	25.2694	12.63	8.09	P=0.0004
Error	201	314.0289	1.56		
Total	290	1,130.3635			

(a) After logarithmic transformation.
(b) $P \leq 0.05$ is significant.

Note: A = date, B = station, C = day/night, D = depth.

TABLE E.3-3 ANALYSIS OF VARIANCE FOR STRIPED BASS POST YOLK-SAC LARVAE COLLECTED AT STANDARD RIVER STATIONS IN THE VICINITY OF THE INDIAN POINT GENERATING STATION, 1978[a]

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F	Probability of a Larger F[b]
A	8	1,171.4551	146.43	158.47	P<0.0001
B	6	7.2511	1.21	1.31	P=0.2538
C	1	86.4725	86.47	93.58	P<0.0001
D	2	175.3094	87.65	94.86	P<0.0001
AXB	48	64.4086	1.34	1.45	P=0.0358
AXC	8	92.9297	11.61	12.57	P<0.0001
AXD	16	135.8786	8.49	9.19	P<0.0001
BXC	6	7.2524	1.21	1.31	P=0.2537
BXD	12	9.7989	0.82	0.88	P=0.5642
CXD	2	54.9894	27.49	29.75	P<0.001
Error	265	244.8767	0.92		
Total	374	2,050.6224			

(a) After logarithmic transformation.
(b) $P \leq 0.05$ is significant.

Note: A = date, B = station, C = day/night, D = depth.

APPENDIX F

ENTRAINMENT ABUNDANCE OF STRIPED BASS EARLY DEVELOPMENTAL STAGES, INDIAN POINT GENERATING STATION, 1978

APPENDIX F TABLES

Title	Number
F.1 ENTRAINMENT ABUNDANCE OF STRIPED BASS AT STATION I2	F.1-1
F.2 ENTRAINMENT ABUNDANCE OF STRIPED BASS AT STATION I3	F.2-1
F.3 ENTRAINMENT ABUNDANCE OF STRIPED BASS AT STATION D1	F.3-1

TABLE F.1-1 DENSITIES OF STRIPED BASS COLLECTED AT STATION I2 DURING THE ENTRAINMENT ABUNDANCE STUDY, INDIAN POINT GENERATING STATION, 1978

Date[a]	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3)					
						Eggs	YSL	PYSL	Juv	Uid	Total[b]
1 JUN	S	1444	19.1	--	14.10	0.0	0.0	0.0	0.0	0.0	0.0
	M		--	--	18.60	107.5	0.0	0.0	0.0	0.0	0.0
	B		--	--	60.00	50.0	33.3	0.0	0.0	0.0	33.3
1 JUN	S	1601	18.2	--	13.30	150.4	150.4	0.0	0.0	0.0	150.4
	M		--	--	22.40	89.3	133.9	0.0	0.0	0.0	133.9
	B		--	--	54.50	91.7	128.4	0.0	0.0	0.0	128.4
1 JUN	S	1800	18.8	--	13.30	0.0	0.0	0.0	0.0	0.0	0.0
	M		--	--	21.80	0.0	45.9	0.0	0.0	0.0	45.9
	B		--	--	55.10	0.0	0.0	0.0	0.0	0.0	0.0
1 JUN	S	2001	18.9	--	10.30	0.0	0.0	0.0	0.0	0.0	0.0
	M		--	--	23.30	1,545.1	128.8	0.0	0.0	0.0	128.8
	B		--	--	31.50	698.4	222.2	0.0	0.0	0.0	222.2
1 JUN	S	2201	19.4	--	4.10	0.0	0.0	0.0	0.0	0.0	0.0
	M		--	--	22.40	0.0	223.2	0.0	0.0	0.0	223.2
	B		--	--	32.40	216.0	0.0	0.0	0.0	0.0	0.0
2 JUN	S	0015	19.8	--	5.00	0.0	200.0	0.0	0.0	0.0	200.0
	M		--	--	23.30	0.0	85.8	0.0	0.0	0.0	85.8
	B		--	--	30.60	0.0	65.4	0.0	0.0	0.0	65.4
2 JUN	S	0200	19.4	--	5.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		--	--	16.50	0.0	0.0	0.0	0.0	0.0	0.0
	B		--	--	24.10	0.0	124.5	0.0	0.0	0.0	124.5
8 JUN	S	1400	22.0	184	21.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.0	181	12.30	0.0	0.0	81.3	0.0	0.0	81.3
	B		21.0	181	10.70	0.0	186.9	0.0	0.0	0.0	186.9
8 JUN	S	1600	--	--	7.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		21.2	173	6.80	0.0	0.0	0.0	0.0	0.0	0.0
	B		--	--	9.10	0.0	0.0	109.9	0.0	0.0	109.9
8 JUN	S	1800	22.1	176	7.70	0.0	0.0	0.0	0.0	0.0	0.0
	M		21.3	176	8.50	0.0	0.0	0.0	0.0	0.0	0.0
	B		20.9	174	7.10	0.0	0.0	0.0	0.0	0.0	0.0
8 JUN	S	2000	20.5	183	5.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		20.6	175	9.10	0.0	219.8	109.9	0.0	0.0	329.7
	B		20.4	176	14.10	0.0	496.5	212.8	0.0	0.0	709.3

TABLE F.1-1 (CONT.)

Date[a]	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[b]
8 JUN	S	2200	20.8	185	4.70	212.8	0.0	212.8	0.0	0.0	212.8
	M		20.3	183	12.70	0.0	236.2	78.7	0.0	0.0	314.9
	B		20.2	184	10.60	0.0	0.0	94.3	0.0	0.0	94.3
9 JUN	S	0015	21.4	209	6.20	161.3	161.3	645.2	0.0	0.0	806.5
	M		21.8	206	14.10	0.0	212.8	0.0	0.0	0.0	212.8
	B		20.9	207	9.70	0.0	721.6	412.4	0.0	0.0	1,134.0
9 JUN	S	0200	21.6	221	7.70	0.0	519.5	0.0	0.0	0.0	519.5
	M		21.4	219	8.80	113.6	340.9	0.0	0.0	0.0	340.9
	B		21.4	219	9.10	0.0	439.6	0.0	0.0	0.0	439.6
15 JUN	S	1400	20.8	154	4.70	0.0	0.0	0.0	0.0	0.0	0.0
	M		20.9	159	21.40	0.0	0.0	0.0	0.0	0.0	0.0
	B		20.8	152	20.60	0.0	0.0	1,359.2	0.0	0.0	1,359.2
15 JUN	S	1600	20.9	153	5.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		20.8	152	11.50	0.0	0.0	0.0	0.0	0.0	0.0
	B		20.8	152	18.50	0.0	0.0	54.1	0.0	0.0	54.1
15 JUN	S	1800	20.8	158	4.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		20.8	158	10.00	0.0	0.0	100.0	0.0	0.0	100.0
	B		20.8	158	16.70	0.0	59.9	898.2	0.0	0.0	958.1
15 JUN	S	2000	20.5	163	2.90	0.0	0.0	0.0	0.0	0.0	0.0
	M		20.5	163	10.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		20.5	163	14.40	0.0	0.0	208.3	0.0	0.0	208.3
15 JUN	S	2200	20.8	157	3.20	0.0	0.0	625.0	0.0	0.0	625.0
	M		20.8	157	10.80	0.0	0.0	1,018.5	0.0	0.0	1,018.5
	B		20.8	157	19.40	0.0	0.0	670.1	0.0	0.0	670.1
15 JUN	S	2400	20.7	212	6.80	0.0	0.0	882.4	0.0	0.0	882.4
	M		20.8	250	12.10	0.0	0.0	413.2	0.0	0.0	413.2
	B		20.5	252	25.30	0.0	0.0	869.5	0.0	0.0	869.5
16 JUN	S	0200	20.5	212	29.40	0.0	0.0	102.0	0.0	0.0	102.0
	M		20.8	252	40.90	0.0	0.0	220.0	0.0	0.0	220.0
	B		20.5	252	50.10	0.0	0.0	419.2	0.0	0.0	419.2
22 JUN	S	1400	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	M		22.5	1,100	6.50	0.0	0.0	153.8	0.0	0.0	153.8
	B		22.4	900	12.40	0.0	0.0	0.0	0.0	0.0	0.0

TABLE F[illegible] (CONT.)

Date[a]	Depth	Time	Temperature (°)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[b]
22 JUN	S	1600	23.2	560	5.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.6	930	6.20	0.0	0.0	483.9	0.0	0.0	483.9
	B		22.4	1,090	13.30	0.0	75.2	1,052.6	0.0	0.0	1,127.8
22 JUN	S	1800	22.3	930	3.50	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.3	930	6.80	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.3	930	15.00	0.0	0.0	133.3	0.0	0.0	133.3
22 JUN	S	2000	--	--	7.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.3	500	7.10	0.0	0.0	0.0	0.0	0.0	0.0
	B		--	--	13.30	0.0	0.0	0.0	0.0	0.0	0.0
22 JUN	S	2200	22.4	360	12.40	0.0	0.0	80.6	0.0	0.0	80.6
	M		22.3	360	5.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.1	350	14.10	0.0	0.0	70.9	0.0	0.0	70.9
22 JUN	S	2400	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	M		22.4	690	6.80	0.0	0.0	735.3	0.0	0.0	735.3
	B		22.3	300	9.70	0.0	0.0	412.4	0.0	0.0	412.4
23 JUN	S	0200	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	M		22.3	1,240	12.10	0.0	0.0	330.5	0.0	0.0	330.5
	B		22.3	1,230	14.10	0.0	0.0	283.7	70.9	0.0	354.6
29 JUN	S	1400	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	M		(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	B		(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
29 JUN	S	1600	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	M		(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	B		23.4	780	38.90	0.0	0.0	51.4	0.0	0.0	51.4
29 JUN	S	1800	25.9	460	4.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.8	460	4.10	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.5	460	32.10	0.0	0.0	31.2	0.0	0.0	31.2
29 JUN	S	2000	24.4	520	3.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.1	600	4.40	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.1	670	33.60	0.0	0.0	29.8	0.0	0.0	29.8
29 JUN	S	2200	23.9	530	11.90	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.9	530	5.90	0.0	0.0	169.5	0.0	0.0	169.5
	B		23.9	530	37.40	0.0	0.0	26.7	0.0	0.0	26.7

TABLE F.1-1 (CONT.)

Date[a]	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[b]
29 JUN	S	2400	23.9	440	18.60	0.0	0.0	0.0	161.3	0.0	161.3
	M		24.0	590	10.60	0.0	0.0	188.7	94.3	0.0	283.0
	B		24.2	790	39.80	0.0	0.0	201.0	0.0	0.0	201.0
30 JUN	S	0200	23.8	450	14.90	0.0	0.0	0.0	469.8	0.0	469.8
	M		23.7	460	8.80	0.0	0.0	0.0	113.6	0.0	113.6
	B		23.8	470	36.50	0.0	0.0	0.0	246.6	0.0	246.6
5 JUL	S	1400	23.9	265	9.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.9	333	10.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.4	468	31.80	0.0	0.0	0.0	0.0	0.0	0.0
5 JUL	S	1600	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	M		23.6	283	8.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.8	375	27.40	0.0	0.0	0.0	0.0	0.0	0.0
5 JUL	S	1800	23.3	211	6.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.3	212	11.50	0.0	0.0	0.0	0.0	0.0	0.0
	B		23.3	213	35.00	0.0	0.0	0.0	0.0	0.0	0.0
5 JUL	S	2000	23.0	206	6.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.9	206	8.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.9	262	31.40	0.0	0.0	0.0	0.0	0.0	0.0
5 JUL	S	2200	24.7	303	8.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.7	312	9.70	0.0	0.0	0.0	0.0	0.0	0.0
	B		23.5	319	27.10	0.0	0.0	0.0	0.0	0.0	0.0
5 JUL	S	2400	23.7	297	8.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.7	298	8.50	0.0	0.0	0.0	0.0	0.0	0.0
	B		23.4	298	54.50	0.0	0.0	18.3	0.0	0.0	18.3
6 JUL	S	0200	22.7	390	10.60	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.6	419	11.50	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.6	416	30.30	0.0	0.0	0.0	0.0	0.0	0.0
13 JUL	S	1400	24.0	2,700	3.70	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.9	2,750	9.10	0.0	0.0	0.0	0.0	0.0	0.0
	B		(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
13 JUL	S	1600	25.6	3,390	1.90	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.4	3,300	8.70	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.2	3,350	13.80	0.0	0.0	0.0	0.0	0.0	0.0

TABLE F. (CONT.)

Date[a]	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[b]
13 JUL	S	1800	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	M		25.3	3,830	9.40	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.6	4,040	9.00	0.0	0.0	0.0	0.0	0.0	0.0
13 JUL	S	2000	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	M		24.4	3,930	10.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.4	4,280	24.00	0.0	0.0	0.0	0.0	0.0	0.0
13 JUL	S	2200	24.7	3,880	12.10	0.0	0.0	0.0	82.6	0.0	82.6
	M		(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	B		24.7	4,170	28.30	0.0	0.0	0.0	0.0	0.0	0.0
14 JUL	S	0030	24.2	3,460	4.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.2	3,504	10.50	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.2	3,480	25.60	0.0	0.0	0.0	0.0	0.0	0.0
14 JUL	S	0200	24.0	3,270	4.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.9	3,200	11.80	0.0	0.0	84.7	84.7	0.0	169.4
	B		23.9	3,180	30.60	0.0	0.0	98.0	0.0	0.0	98.0
17 JUL	S	1400	24.3	3,350	53.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.2	3,370	11.80	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.3	3,410	54.50	0.0	0.0	0.0	0.0	0.0	0.0
17 JUL	S	1600	--	--	2.90	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.1	3,110	13.60	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.1	3,090	30.60	0.0	0.0	0.0	0.0	0.0	0.0
17 JUL	S	1800	26.2	3,270	20.60	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.0	3,080	12.70	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.1	3,060	31.50	0.0	0.0	0.0	0.0	0.0	0.0
17 JUL	S	2000	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	M		25.0	3,630	14.10	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.5	3,730	24.30	0.0	0.0	0.0	0.0	0.0	0.0
17 JUL	S	2200	25.0	4,140	16.50	0.0	0.0	0.0	0.0	0.0	0.0
	M		25.0	4,400	9.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.7	4,520	24.10	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	S	0030	24.2	4,020	9.30	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.2	4,720	13.50	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.0	5,250	28.90	0.0	0.0	0.0	0.0	0.0	0.0

TABLE F.1-1 (CONT.)

Date[a]	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[b]
18 JUL	S	0200	24.2	3,990	3.10	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.2	4,070	10.60	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.3	4,790	21.90	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	1410	27.0	3,270	31.80	0.0	0.0	0.0	31.4	0.0	31.4
	M		27.2	3,210	15.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
24 JUL	S	1600	26.7	3,610	15.90	0.0	0.0	0.0	0.0	0.0	0.0
	M		26.8	3,510	18.30	0.0	0.0	0.0	0.0	0.0	0.0
	B		26.9	2,980	19.10	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	1800	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	M		26.6	4,240	21.80	0.0	0.0	0.0	0.0	0.0	0.0
	B		26.5	2,940	30.90	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	2000	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	M		26.4	3,330	27.80	0.0	0.0	0.0	0.0	0.0	0.0
	B		26.4	3,230	28.60	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	2200	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	M		25.8	2,710	48.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		25.9	2,710	20.20	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	2400	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	M		25.7	2,450	17.40	0.0	0.0	0.0	0.0	0.0	0.0
	B		25.7	2,430	20.90	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	S	0200	27.2	3,180	8.70	0.0	0.0	0.0	114.9	0.0	114.9
	M		26.4	3,100	39.30	0.0	0.0	0.0	25.4	0.0	25.4
	B		26.3	2,630	23.60	0.0	0.0	0.0	0.0	0.0	0.0

(a) Includes all sampling dates when Unit 2 was operating and striped bass were collected (1 June through 25 July 1978).
(b) Total density of striped bass life stages collected, excluding eggs.
(c) Data excluded from analysis because sample volume was less than 1.77 m^3 (0.1 ft/sec velocity) (see Subsection 4.2.3.1).

Note: Dashes (--) indicate data not available because of gear malfunction.
S = surface; M = middepth; B = bottom.
YSL = yolk-sac larvae; PYSL = post yolk-sac larvae; Juv = juveniles; Uid = unidentified life stage.

TABLE F.2-1 DENSITIES OF STRIPED B[illegible] COLLECTED AT STATION I3 DURING THE ENTRAINMENT ABUNDANCE STUDY, INDIAN POINT GENERATING STATION, 1978

Date[a]	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3)					
						Eggs	YSL	PYSL	Juv	Uid	Total[b]
11 MAY	S	1400	12.7	106	3.50	0.0	0.0	0.0	0.0	0.0	0.0
	M				4.20	238.1	0.0	0.0	0.0	0.0	0.0
	B				6.40	156.2	0.0	0.0	0.0	0.0	0.0
11 MAY	S	1600	12.2	102	1.80	0.0	0.0	0.0	0.0	0.0	0.0
	M				3.80	263.2	0.0	0.0	0.0	0.0	0.0
	B				3.20	0.0	0.0	0.0	0.0	0.0	0.0
11 MAY	S	1800	12.8	107	4.30	232.6	0.0	0.0	0.0	0.0	0.0
	M				5.60	357.1	0.0	0.0	0.0	0.0	0.0
	B				5.60	178.6	0.0	0.0	0.0	0.0	0.0
11 MAY	S	2000	12.4	108	6.00	166.7	0.0	0.0	0.0	0.0	0.0
	M				5.90	0.0	0.0	0.0	0.0	0.0	0.0
	B				5.40	0.0	0.0	0.0	0.0	0.0	0.0
11 MAY	S	2200	12.1	109	5.40	0.0	0.0	0.0	0.0	0.0	0.0
	M				4.90	0.0	0.0	0.0	0.0	0.0	0.0
	B				4.90	0.0	0.0	0.0	0.0	0.0	0.0
11 MAY	S	2400	12.5	112	6.70	0.0	0.0	0.0	0.0	0.0	0.0
	M				4.40	0.0	0.0	0.0	0.0	0.0	0.0
	B				5.30	0.0	0.0	0.0	0.0	0.0	0.0
12 MAY	S	0200	13.0	114	4.50	222.2	0.0	0.0	0.0	0.0	0.0
	M				3.30	0.0	0.0	0.0	0.0	0.0	0.0
	B				2.30	0.0	0.0	0.0	0.0	0.0	0.0
18 MAY	S	1400	12.8	171	8.70	0.0	0.0	0.0	0.0	0.0	0.0
	M				8.20	0.0	0.0	0.0	0.0	0.0	0.0
	B				7.50	0.0	0.0	0.0	0.0	0.0	0.0
18 MAY	S	1600	13.1	137	6.60	0.0	0.0	0.0	0.0	0.0	0.0
	M				8.70	0.0	0.0	0.0	0.0	0.0	0.0
	B				6.80	147.1	0.0	0.0	0.0	0.0	0.0
18 MAY	S	1800	13.8	147	5.60	0.0	0.0	0.0	0.0	0.0	0.0
	M				5.70	0.0	0.0	0.0	0.0	0.0	0.0
	B				5.20	0.0	0.0	0.0	0.0	0.0	0.0
18 MAY	S	2000	13.1	272	3.20	0.0	0.0	0.0	0.0	0.0	0.0
	M				3.20	937.5	0.0	0.0	0.0	0.0	0.0
	B				5.20	0.0	0.0	0.0	0.0	0.0	0.0

TABLE F.2-1 (CONT.)

Date[a]	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[b]
18 MAY	S	2221	12.9	339	3.20	0.0	0.0	0.0	0.0	0.0	0.0
	M				4.70	0.0	0.0	0.0	0.0	0.0	0.0
	B				10.20	0.0	0.0	0.0	0.0	0.0	0.0
18 MAY	S	2400	12.9	681	4.70	212.8	0.0	0.0	0.0	0.0	0.0
	M				4.90	0.0	0.0	0.0	0.0	0.0	0.0
	B				5.20	576.9	0.0	0.0	0.0	0.0	0.0
19 MAY	S	0200	13.0	650	6.50	0.0	0.0	0.0	0.0	0.0	0.0
	M				5.60	357.1	0.0	0.0	0.0	0.0	0.0
	B				4.70	638.3	0.0	0.0	0.0	0.0	0.0
25 MAY	S	1400	16.0	--	6.20	161.3	0.0	0.0	0.0	0.0	0.0
	M				6.20	0.0	0.0	0.0	0.0	0.0	0.0
	B				6.10	327.9	0.0	0.0	0.0	0.0	0.0
25 MAY	S	1600	16.2	--	6.50	0.0	0.0	0.0	0.0	0.0	0.0
	M				5.40	0.0	0.0	0.0	0.0	0.0	0.0
	B				4.40	681.8	0.0	0.0	0.0	0.0	0.0
25 MAY	S	1800	16.0	--	3.50	857.1	0.0	0.0	0.0	0.0	0.0
	M				2.90	344.8	0.0	0.0	0.0	0.0	0.0
	B				3.10	322.6	0.0	0.0	0.0	0.0	0.0
25 MAY	S	2000	16.7	--	4.80	0.0	0.0	0.0	0.0	0.0	0.0
	M				3.50	0.0	0.0	0.0	0.0	0.0	0.0
	B				4.20	0.0	0.0	0.0	0.0	0.0	0.0
25 MAY	S	2200	15.5	--	3.80	263.2	0.0	0.0	0.0	0.0	0.0
	M				3.50	0.0	0.0	0.0	0.0	0.0	0.0
	B				2.70	370.4	370.4	0.0	0.0	0.0	370.4
25 MAY	S	2400	16.1	--	5.60	357.1	0.0	0.0	0.0	0.0	0.0
	M				10.60	566.0	94.3	0.0	0.0	0.0	94.3
	B				8.00	750.0	0.0	0.0	0.0	0.0	0.0
26 MAY	S	0200	16.6	--	6.50	153.8	0.0	0.0	0.0	0.0	0.0
	M				7.10	704.2	140.8	0.0	0.0	0.0	140.8
	B				6.20	322.6	161.3	0.0	0.0	0.0	161.3

TABLE F. [illegible] (CONT.)

Date[a]	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[b]
1 JUN	S	1429	18.9	--	2.70	370.4	370.4	0.0	0.0	0.0	370.4
	M				2.70	0.0	0.0	0.0	0.0	0.0	0.0
	B				2.70	1,111.1	740.7	0.0	0.0	0.0	740.7
1 JUN	S	1601	18.0	--	5.00	0.0	0.0	0.0	0.0	0.0	0.0
	M				2.90	689.7	344.8	0.0	0.0	0.0	344.8
	B				3.50	0.0	0.0	0.0	0.0	0.0	0.0
1 JUN	S	1800	18.2	--	11.20	0.0	178.6	0.0	0.0	0.0	178.6
	M				(c)	(c)	(c)	(c)	(c)	(c)	(c)
	B				4.10	0.0	0.0	0.0	0.0	0.0	0.0
1 JUN	S	2000	18.8	--	5.90	339.0	169.5	0.0	0.0	0.0	169.5
	M				6.20	1,451.6	161.3	0.0	0.0	0.0	161.3
	B				10.20	0.0	122.0	0.0	0.0	0.0	122.0
1 JUN	S	2200	19.3	--	4.40	0.0	0.0	0.0	0.0	0.0	0.0
	M				4.40	909.1	0.0	0.0	0.0	0.0	0.0
	B				4.90	408.2	204.1	0.0	0.0	0.0	204.1
1 JUN	S	2400	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	M				(c)	(c)	(c)	(c)	(c)	(c)	(c)
	B				(c)	(c)	(c)	(c)	(c)	(c)	(c)
2 JUN	S	0200	19.4	--	1.80	0.0	0.0	0.0	0.0	0.0	0.0
	M				(c)	(c)	(c)	(c)	(c)	(c)	(c)
	B				(c)	(c)	(c)	(c)	(c)	(c)	(c)

(a) Includes all sampling dates when Unit 3 was operating and striped bass were collected (11 May through 2 June 1978).
(b) Total density of striped bass life stages collected excluding eggs.
(c) Data excluded from analysis because sample volume was less than 1.77 m^3 (0.1 ft/sec velocity) (see Subsection 4.2.3.1).

Note: Dashes (--) indicate data unavailable because of gear malfunction; water quality data recorded only at surface depth.
S = surface; M = middepth; B = bottom.
YSL = yolk-sac larvae; PYSL = post yolk-sac larvae; Juv = juveniles; Uid = unidentified life stage.

TABLE F.3-1 DENSITIES OF STRIPED BASS COLLECTED AT STATION D1 DURING THE ENTRAINMENT ABUNDANCE STUDY, INDIAN POINT GENERATING STATION, 1978

Date[a]	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3)					
						Eggs	YSL	PYSL	Juv	Uid	Total[b]
1 JUN	S	1402	27.9	--	78.00	0.0	89.7	0.0	0.0	0.0	89.7
	M				60.10	16.6	133.1	0.0	0.0	0.0	133.1
	B				58.30	85.8	154.4	0.0	0.0	0.0	154.4
1 JUN	S	1600	27.0	--	82.80	0.0	84.5	0.0	0.0	0.0	84.5
	M				81.00	0.0	172.8	0.0	0.0	0.0	172.8
	B				79.50	12.6	75.5	0.0	0.0	0.0	75.5
1 JUN	S	1802	27.3	--	40.00	250.0	350.0	0.0	0.0	0.0	350.0
	M				71.30	42.1	154.3	0.0	0.0	0.0	154.3
	B				66.00	90.9	287.9	0.0	0.0	0.0	287.9
1 JUN	S	2000	27.5	--	38.00	184.2	52.6	0.0	0.0	0.0	52.6
	M				45.10	354.8	44.3	0.0	0.0	0.0	44.3
	B				107.50	158.1	37.2	0.0	0.0	46.5	83.7
1 JUN	S	2201	27.8	--	43.00	46.5	0.0	0.0	0.0	0.0	0.0
	M				79.00	0.0	0.0	0.0	0.0	0.0	0.0
	B				104.50	0.0	0.0	0.0	0.0	0.0	0.0
2 JUN	S	0015	19.8	--	75.10	0.0	0.0	0.0	0.0	0.0	0.0
	M				76.00	0.0	0.0	0.0	0.0	0.0	0.0
	B				62.10	0.0	16.1	0.0	0.0	0.0	16.1
2 JUN	S	0200	28.5	--	74.80	13.4	53.5	0.0	0.0	0.0	53.5
	M				45.40	22.0	44.1	0.0	0.0	0.0	44.1
	B				78.60	0.0	63.6	0.0	0.0	0.0	63.6
8 JUN	S	1400	30.6	203	35.00	28.6	171.4	85.7	0.0	0.0	257.1
	M				32.40	0.0	463.0	339.5	0.0	0.0	802.5
	B				57.70	0.0	138.6	294.6	0.0	0.0	433.2
8 JUN	S	1600	30.6	209	40.90	0.0	48.9	73.3	0.0	0.0	122.2
	M				38.40	0.0	260.4	130.2	0.0	0.0	390.6
	B				37.40	0.0	80.2	160.4	0.0	0.0	240.6
8 JUN	S	1800	30.6	209	50.90	0.0	78.6	19.6	0.0	0.0	98.2
	M				46.20	0.0	86.6	108.2	0.0	0.0	194.8
	B				47.90	0.0	83.5	62.6	0.0	0.0	146.1
8 JUN	S	2000	--	--	75.50	0.0	92.7	106.0	0.0	0.0	198.7
	M				72.60	0.0	137.7	137.7	0.0	0.0	275.4
	B				74.00	0.0	121.6	175.7	0.0	0.0	297.3

TABLE F[illegible] (CONT.)

Date[a]	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[b]
8 JUN	S	2200	30.6	228	9.90	0.0	1,818.2	909.1	0.0	0.0	2,727.3
	M				39.30	0.0	178.1	152.6	0.0	0.0	330.7
	B				41.80	0.0	119.6	95.7	0.0	0.0	215.3
9 JUN	S	0015	30.6	234	32.10	0.0	155.8	311.5	0.0	31.2	498.5
	M				37.70	0.0	106.1	397.9	0.0	0.0	504.0
	B				38.70	0.0	25.8	258.4	0.0	0.0	284.2
9 JUN	S	0200	31.3	248	32.00	93.7	531.2	625.0	0.0	0.0	1,156.2
	M				36.00	0.0	0.0	27.8	0.0	27.8	55.6
	B				38.90	51.4	102.8	154.2	0.0	0.0	257.0
15 JUN	S	1400	28.8	183	51.20	0.0	0.0	58.6	0.0	0.0	58.6
	M				52.70	0.0	0.0	0.0	0.0	0.0	0.0
	B				61.00	0.0	0.0	65.6	0.0	0.0	65.6
15 JUN	S	1600	30.0	190	48.00	0.0	0.0	41.7	0.0	0.0	41.7
	M				49.80	0.0	20.1	80.3	0.0	0.0	100.4
	B				62.70	0.0	143.5	0.0	0.0	0.0	143.5
15 JUN	S	1800	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	M				30.60	0.0	32.7	326.8	0.0	0.0	359.5
	B				79.20	0.0	50.5	239.9	0.0	0.0	290.4
15 JUN	S	2000	29.4	430	40.60	0.0	0.0	270.9	0.0	0.0	270.9
	M				51.50	0.0	77.7	291.3	0.0	0.0	369.0
	B				71.20	0.0	28.1	589.9	0.0	0.0	618.0
15 JUN	S	2200	30.6	553	41.50	0.0	48.2	313.3	0.0	24.1	385.6
	M				71.80	0.0	0.0	473.6	0.0	0.0	473.6
	B				48.00	0.0	0.0	875.0	0.0	0.0	875.0
15 JUN	S	2400	30.5	268	50.10	0.0	0.0	658.7	0.0	0.0	658.7
	M				52.70	0.0	0.0	1,062.6	0.0	0.0	1,062.6
	B				50.60	0.0	0.0	1,284.6	0.0	0.0	1,284.6
16 JUN	S	0200	30.7	274	55.30	0.0	18.1	524.4	0.0	0.0	542.5
	M				58.60	0.0	0.0	1,075.1	0.0	0.0	1,075.1
	B				58.90	0.0	0.0	1,103.6	0.0	0.0	1,103.6
22 JUN	S	1400	32.3	1,100	16.80	0.0	0.0	0.0	0.0	0.0	0.0
	M				37.40	0.0	0.0	53.5	0.0	0.0	53.5
	B				48.60	0.0	0.0	61.7	0.0	0.0	61.7

TABLE F.3-1 (CONT.)

Date[a]	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[b]
22 JUN	S	1600	33.0	1,080	53.90	0.0	74.2	482.4	0.0	0.0	556.6
	M				53.90	0.0	74.2	1,428.6	0.0	0.0	1,502.8
	B				44.90	0.0	0.0	1,314.0	0.0	0.0	1,314.0
22 JUN	S	1800	33.2	750	56.00	0.0	0.0	53.6	0.0	0.0	53.6
	M				57.60	0.0	34.7	156.2	0.0	0.0	190.9
	B				78.30	0.0	12.8	408.7	0.0	0.0	421.5
22 JUN	S	2000	32.4	510	61.80	0.0	0.0	32.4	0.0	0.0	32.4
	M				51.30	0.0	0.0	0.0	0.0	0.0	0.0
	B				54.80	0.0	0.0	18.2	0.0	0.0	18.2
22 JUN	S	2200	32.2	450	41.20	0.0	0.0	194.2	0.0	0.0	194.2
	M				41.50	0.0	24.1	241.0	0.0	0.0	265.1
	B				45.60	0.0	0.0	635.9	0.0	0.0	635.9
22 JUN	S	2400	32.2	830	40.10	0.0	0.0	224.4	0.0	0.0	224.4
	M				34.80	0.0	0.0	574.7	0.0	0.0	574.7
	B				40.60	0.0	0.0	394.1	0.0	0.0	394.1
23 JUN	S	0200	32.0	1,470	18.60	0.0	0.0	1,290.3	0.0	0.0	1,290.3
	M				36.80	0.0	0.0	597.8	0.0	0.0	597.8
	B				42.10	0.0	0.0	855.1	0.0	0.0	855.1
29 JUN	S	1400	33.7	370	51.40	0.0	0.0	0.0	0.0	0.0	0.0
	M				49.90	0.0	0.0	0.0	0.0	0.0	0.0
	B				52.60	0.0	0.0	0.0	0.0	0.0	0.0
29 JUN	S	1600	33.9	520	43.60	0.0	0.0	0.0	0.0	0.0	0.0
	M				42.80	0.0	0.0	0.0	0.0	0.0	0.0
	B				45.30	0.0	0.0	0.0	0.0	0.0	0.0
29 JUN	S	1800	33.9	520	32.70	0.0	0.0	30.6	0.0	0.0	30.6
	M				36.20	0.0	0.0	55.2	0.0	0.0	55.2
	B				87.50	0.0	0.0	45.7	0.0	0.0	45.7
29 JUN	S	2000	33.8	120	43.60	0.0	0.0	45.9	0.0	0.0	45.9
	M				46.20	0.0	0.0	64.9	0.0	0.0	64.9
	B				49.80	0.0	0.0	20.1	0.0	0.0	20.1
29 JUN	S	2200	33.7	910	41.80	0.0	0.0	47.8	0.0	0.0	47.8
	M				38.60	0.0	0.0	77.7	25.9	0.0	103.6
	B				72.70	0.0	0.0	96.3	13.8	0.0	110.1

TABLE F. (CONT.)

Date[a]	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[b]
29 JUN	S	2400	33.8	700	43.00	0.0	0.0	23.3	0.0	0.0	23.3
	M				42.70	0.0	0.0	46.8	0.0	0.0	46.8
	B				43.90	0.0	0.0	22.8	0.0	0.0	22.8
30 JUN	S	0200	34.2	610	57.70	0.0	0.0	52.0	0.0	0.0	52.0
	M				58.30	0.0	0.0	0.0	0.0	0.0	0.0
	B				54.10	0.0	0.0	17.5	35.0	0.0	52.5
5 JUL	S	1400	22.9	333	49.50	0.0	0.0	0.0	0.0	0.0	0.0
	M				52.00	0.0	0.0	0.0	0.0	0.0	0.0
	B				67.00	0.0	0.0	0.0	0.0	0.0	0.0
5 JUL	S	1600	33.6	388	68.60	0.0	0.0	0.0	0.0	0.0	0.0
	M				67.40	0.0	0.0	0.0	0.0	0.0	0.0
	B				67.70	0.0	0.0	0.0	0.0	0.0	0.0
5 JUL	S	1800	33.0	350	70.40	0.0	0.0	0.0	0.0	0.0	0.0
	M				68.30	0.0	0.0	0.0	0.0	0.0	0.0
	B				72.20	0.0	0.0	0.0	0.0	0.0	0.0
5 JUL	S	2000	32.0	319	63.90	0.0	0.0	0.0	0.0	0.0	0.0
	M				63.60	0.0	0.0	0.0	0.0	0.0	0.0
	B				63.00	0.0	0.0	0.0	0.0	0.0	0.0
5 JUL	S	2200	32.3	378	46.20	0.0	0.0	21.6	0.0	0.0	21.6
	M				51.80	0.0	0.0	0.0	0.0	0.0	0.0
	B				60.10	0.0	0.0	0.0	0.0	0.0	0.0
5 JUL	S	2400	32.0	381	54.80	0.0	0.0	0.0	0.0	0.0	0.0
	M				55.10	0.0	0.0	0.0	0.0	0.0	0.0
	B				55.10	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	S	0200	31.5	515	63.60	0.0	0.0	0.0	0.0	0.0	0.0
	M				75.70	0.0	0.0	0.0	0.0	0.0	0.0
	B				75.10	0.0	0.0	0.0	0.0	0.0	0.0
13 JUL	S	1400	33.5	3,600	83.00	0.0	0.0	0.0	0.0	0.0	0.0
	M				55.70	0.0	0.0	0.0	0.0	0.0	0.0
	B				55.10	0.0	0.0	0.0	0.0	0.0	0.0
13 JUL	S	1600	34.1	4,050	38.00	0.0	0.0	0.0	0.0	0.0	0.0
	M				37.10	0.0	0.0	0.0	0.0	0.0	0.0
	B				44.80	0.0	0.0	0.0	0.0	0.0	0.0

TABLE F.3-1 (CONT.)

Date[a]	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[b]
13 JUL	S	1800	34.6	5,080	37.70	0.0	0.0	0.0	0.0	0.0	0.0
	M				40.90	0.0	0.0	0.0	0.0	0.0	0.0
	B				40.90	0.0	0.0	0.0	0.0	0.0	0.0
13 JUL	S	2000	33.8	5,100	42.70	0.0	0.0	0.0	0.0	0.0	0.0
	M				43.00	0.0	0.0	0.0	0.0	0.0	0.0
	B				49.40	0.0	0.0	0.0	0.0	0.0	0.0
13 JUL	S	2200	34.7	930	46.20	0.0	0.0	0.0	0.0	0.0	0.0
	M				46.80	0.0	0.0	21.4	0.0	0.0	21.4
	B				51.50	0.0	0.0	0.0	19.4	0.0	19.4
14 JUL	S	0030	34.2	4,220	53.00	0.0	0.0	0.0	0.0	0.0	0.0
	M				81.00	0.0	0.0	0.0	0.0	0.0	0.0
	B				84.80	0.0	0.0	0.0	0.0	0.0	0.0
14 JUL	S	0200	33.5	392	43.30	0.0	0.0	0.0	0.0	0.0	0.0
	M				43.90	0.0	0.0	45.6	22.8	0.0	68.4
	B				42.10	0.0	0.0	23.8	0.0	0.0	23.8
17 JUL	S	1400	34.0	4,120	56.10	0.0	0.0	0.0	0.0	0.0	0.0
	M				64.40	0.0	0.0	0.0	0.0	0.0	0.0
	B				64.20	0.0	0.0	0.0	0.0	0.0	0.0
17 JUL	S	1600	39.2	3,170	51.50	0.0	0.0	0.0	0.0	0.0	0.0
	M				52.40	0.0	0.0	0.0	0.0	0.0	0.0
	B				69.40	0.0	0.0	0.0	0.0	0.0	0.0
17 JUL	S	1800	33.7	3,850	39.80	0.0	0.0	0.0	0.0	0.0	0.0
	M				39.20	0.0	0.0	0.0	0.0	0.0	0.0
	B				46.50	0.0	0.0	21.5	0.0	0.0	21.5
17 JUL	S	2000	33.4	604	40.80	0.0	0.0	0.0	0.0	0.0	0.0
	M				36.20	0.0	0.0	0.0	0.0	0.0	0.0
	B				46.80	0.0	0.0	0.0	0.0	0.0	0.0
17 JUL	S	2200	33.5	5,420	35.30	0.0	0.0	0.0	0.0	0.0	0.0
	M				36.20	0.0	0.0	0.0	0.0	0.0	0.0
	B				45.10	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	S	0030	33.4	600	46.20	0.0	0.0	0.0	0.0	0.0	0.0
	M				45.40	0.0	0.0	22.0	0.0	0.0	22.0
	B				51.80	0.0	0.0	0.0	0.0	0.0	0.0

TABLE F. (CONT.)

Date[a]	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[b]
18 JUL	S	0200	32.7	5,040	48.60	0.0	0.0	0.0	0.0	0.0	0.0
	M				48.00	0.0	0.0	0.0	0.0	0.0	0.0
	B				53.00	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	1400	36.6	3,810	39.80	0.0	0.0	0.0	0.0	0.0	0.0
	M				43.60	0.0	0.0	0.0	0.0	0.0	0.0
	B				80.70	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	1600	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	M				37.10	0.0	0.0	0.0	0.0	0.0	0.0
	B				75.70	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	1800	36.5	4,610	52.10	0.0	0.0	0.0	0.0	0.0	0.0
	M				52.40	0.0	0.0	0.0	0.0	0.0	0.0
	B				56.20	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	2000	37.4	4,190	50.10	0.0	0.0	0.0	0.0	0.0	0.0
	M				49.50	0.0	0.0	0.0	0.0	0.0	0.0
	B				48.30	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	2200	35.7	3,260	51.20	0.0	0.0	0.0	0.0	0.0	0.0
	M				52.10	0.0	0.0	0.0	0.0	0.0	0.0
	B				58.90	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	2400	34.7	2,930	50.70	0.0	0.0	0.0	0.0	0.0	0.0
	M				52.10	0.0	0.0	0.0	0.0	0.0	0.0
	B				62.10	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	S	0200	35.4	3,750	44.80	0.0	0.0	22.3	0.0	0.0	22.3
	M				41.50	0.0	0.0	0.0	0.0	0.0	0.0
	B				51.80	0.0	0.0	19.3	0.0	0.0	19.3

(a) Includes all sampling dates when Unit 2 was operating and striped bass were collected (1 June through 25 July 1978).
(b) Total density of striped bass life stages collected excluding eggs.
(c) Data not excluded from analysis because of extremely high or low sample volume (see Subsection 4.2.3.1).

Note: Dashes (--) indicate data not available because of gear malfunction; water quality data recorded only at surface depth.
S = surface; M = middepth; B = bottom.
YSL = yolk-sac larvae; PYSL = post yolk-sac larvae; JUV = juveniles; Uid = unidentified life stage.

APPENDIX G

ENTRAINMENT ABUNDANCE OF SELECTED MACROZOOPLANKTON TAXA, INDIAN POINT GENERATING STATION, 1978

APPENDIX G TABLES

Title	Number
G.1 ENTRAINMENT ABUNDANCE OF GAMMARUS SPP., NEOMYSIS AMERICANA, MONOCULODES EDWARDSI, AND CHAOBORUS PUNCTIPENNIS COLLECTED AT STATION I2	G.1-1
G.2 ENTRAINMENT ABUNDANCE OF GAMMARUS SPP., NEOMYSIS AMERICANA, MONOCULODES EDWARDSI, AND CHAOBORUS PUNCTIPENNIS COLLECTED AT STATION I3	G.2-1
G.3 ENTRAINMENT ABUNDANCE OF GAMMARUS SPP., NEOMYSIS AMERICANA, MONOCULODES EDWARDSI, AND CHAOBORUS PUNCTIPENNIS COLLECTED AT STATION D1	G.3-1

TABLE G.1-1 DENSITIES OF GAMMARUS SPP., NEOMYSIS AMERICANA, MONOCULODES EDWARDSI, AND CHAOBORUS PUNCTIPENNIS COLLECTED AT STATION I2 DURING THE ENTRAINMENT ABUNDANCE STUDY, INDIAN POINT GENERATING STATION, 1978

Date	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
1 JUN	S	1444	19.1	--	14.10	709.2	0.0	0.0	0.0
	M		--	--	18.60	1,129.0	0.0	0.0	53.8
	B		--	--	60.00	550.0	0.0	0.0	0.0
1 JUN	S	1601	18.2	--	13.30	451.1	0.0	0.0	0.0
	M		--	--	22.40	178.6	0.0	0.0	44.6
	B		--	--	54.50	275.2	0.0	0.0	0.0
1 JUN	S	1800	18.8	--	13.30	150.4	0.0	0.0	0.0
	M		--	--	21.80	91.7	0.0	0.0	0.0
	B		--	--	55.10	145.2	0.0	0.0	18.1
1 JUN	S	2001	18.9	--	10.30	97.1	0.0	0.0	0.0
	M		--	--	23.30	4,377.7	0.0	0.0	128.8
	B		--	--	31.50	10,698.4	0.0	0.0	317.4
1 JUN	S	2201	19.4	--	4.10	1,707.3	0.0	0.0	0.0
	M		--	--	22.40	3,705.4	0.0	0.0	44.6
	B		--	--	32.40	9,444.4	0.0	0.0	123.5
1 JUN	S	0015	19.8	--	5.00	7,400.0	0.0	0.0	0.0
	M		--	--	23.30	3,047.2	0.0	0.0	42.9
	B		--	--	30.60	5,522.9	0.0	32.7	228.8
2 JUN	S	0200	19.4	--	5.00	2,600.0	0.0	0.0	0.0
	M		--	--	16.50	6,181.8	0.0	0.0	121.2
	B		--	--	24.10	14,066.4	0.0	0.0	332.0
8 JUN	S	1400	22.0	184	21.40	747.7	0.0	0.0	0.0
	M		22.0	181	12.30	162.6	0.0	0.0	0.0
	B		21.0	181	10.70	841.1	0.0	0.0	0.0
8 JUN	S	1600	--	--	7.80	641.0	0.0	0.0	0.0
	M		21.2	173	6.80	294.1	0.0	0.0	0.0
	B		--	--	9.10	329.7	0.0	0.0	0.0
8 JUN	S	1800	22.1	176	7.70	129.9	0.0	0.0	0.0
	M		21.3	176	8.50	470.6	0.0	0.0	0.0
	B		20.9	174	7.10	1,126.8	0.0	0.0	0.0
8 JUN	S	2000	20.5	183	5.00	0.0	0.0	0.0	0.0
	M		20.6	175	9.10	549.5	0.0	0.0	879.1
	B		20.4	176	14.10	283.7	0.0	0.0	2,340.5

TABLE G.1-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
8 JUN	S	2200	20.8	185	4.70	4,680.8	0.0	0.0	1,063.9
	M		20.3	183	12.70	3,779.5	0.0	0.0	1,181.1
	B		20.2	184	10.60	10,377.4	0.0	0.0	1,603.8
9 JUN	S	0015	21.4	209	6.20	10,483.9	0.0	0.0	806.5
	M		21.8	206	14.10	8,865.2	0.0	0.0	780.1
	B		20.9	207	9.70	25,051.5	0.0	0.0	2,061.9
9 JUN	S	0200	21.6	221	7.70	1,428.6	0.0	0.0	259.8
	M		21.4	219	8.80	3,181.8	0.0	0.0	227.2
	B		21.4	219	9.10	10,219.8	0.0	0.0	1,208.8
15 JUN	S	1400	20.8	154	4.70	212.8	0.0	0.0	0.0
	M		20.9	159	21.40	93.5	0.0	0.0	0.0
	B		20.8	152	20.60	2,087.4	0.0	0.0	48.5
15 JUN	S	1600	20.9	153	5.40	370.4	0.0	0.0	0.0
	M		20.8	152	11.50	87.0	0.0	0.0	0.0
	B		20.8	152	18.50	378.4	0.0	0.0	0.0
15 JUN	S	1800	20.8	158	4.20	238.1	0.0	0.0	0.0
	M		20.8	158	10.00	200.0	0.0	0.0	0.0
	B		20.8	158	16.70	179.6	0.0	0.0	119.8
15 JUN	S	2000	20.5	163	2.90	0.0	0.0	0.0	344.8
	M		20.5	163	10.00	500.0	0.0	0.0	0.0
	B		20.5	163	14.40	208.3	0.0	0.0	0.0
15 JUN	S	2200	20.8	157	3.20	6,250.0	0.0	0.0	5,625.0
	M		20.8	157	10.80	3,796.3	0.0	0.0	1,759.3
	B		20.8	157	19.40	6,185.6	0.0	0.0	1,185.5
15 JUN	S	2400	20.7	212	6.80	1,029.4	0.0	0.0	147.1
	M		20.8	250	12.10	1,735.5	0.0	0.0	165.3
	B		20.5	252	25.30	3,320.2	0.0	0.0	237.1
16 JUN	S	0200	20.5	212	29.40	170.1	0.0	0.0	0.0
	M		20.8	252	40.90	489.0	0.0	0.0	0.0
	B		20.5	252	50.10	978.0	0.0	0.0	59.9
22 JUN	S	1400	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	M		22.5	1,100	6.50	153.8	0.0	0.0	0.0
	B		22.4	900	12.40	645.2	0.0	80.6	0.0

TABLE G[illegible] (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
22 JUN	S	1600	23.2	560	5.00	200.0	0.0	0.0	0.0
	M		22.6	930	6.20	0.0	0.0	0.0	0.0
	B		22.4	1,090	13.30	676.7	150.4	75.2	150.4
22 JUN	S	1800	22.3	930	3.50	0.0	0.0	0.0	0.0
	M		22.3	930	6.80	0.0	0.0	0.0	0.0
	B		22.3	930	15.00	266.7	66.7	66.7	133.4
22 JUN	S	2000	--	--	7.40	405.4	135.1	0.0	135.1
	M		22.3	500	7.10	0.0	0.0	0.0	0.0
	B		--	--	13.30	0.0	0.0	0.0	0.0
22 JUN	S	2200	22.4	360	12.40	241.9	0.0	0.0	322.5
	M		22.3	360	5.90	508.5	0.0	0.0	678.0
	B		22.1	350	14.10	851.1	0.0	0.0	922.0
22 JUN	S	2400	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	M		22.4	690	6.80	441.2	0.0	0.0	147.1
	B		22.3	300	9.70	1,443.3	0.0	0.0	206.2
23 JUN	S	0200	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	M		22.3	1,240	12.10	826.4	0.0	0.0	495.9
	B		22.3	1,230	14.10	2,269.5	2,198.6	141.8	1,063.8
29 JUN	S	1400	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	M		(a)	(a)	(a)	(a)	(a)	(a)	(a)
	B		(a)	(a)	(a)	(a)	(a)	(a)	(a)
29 JUN	S	1600	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	M		(a)	(a)	(a)	(a)	(a)	(a)	(a)
	B		23.4	780	38.90	771.0	0.0	0.0	0.0
29 JUN	S	1800	25.9	460	4.40	0.0	0.0	0.0	0.0
	M		24.8	460	4.10	243.9	0.0	0.0	0.0
	B		24.5	460	32.10	31.2	0.0	31.2	124.6
29 JUN	S	2000	24.4	520	3.20	625.0	0.0	0.0	0.0
	M		24.1	600	4.40	0.0	227.3	0.0	227.3
	B		24.1	670	33.60	357.1	0.0	59.5	29.8
29 JUN	S	2200	23.9	530	11.90	336.1	0.0	84.0	336.1
	M		23.9	530	5.90	847.5	0.0	0.0	1,525.4
	B		23.9	530	37.40	2,914.4	26.7	294.1	989.3

TABLE G.1-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
29 JUN	S	2400	23.9	440	18.60	3,225.8	0.0	483.9	430.1
	M		24.0	590	10.60	2,924.5	0.0	94.3	566.0
	B		24.2	790	39.80	21,934.7	0.0	351.8	854.3
30 JUN	S	0200	23.8	450	14.90	4,429.5	0.0	201.3	201.3
	M		23.7	460	8.80	6,022.7	0.0	113.6	340.9
	B		23.8	470	36.50	10,712.3	0.0	164.4	246.6
5 JUL	S	1400	23.9	265	9.40	106.4	0.0	0.0	0.0
	M		22.9	333	10.90	91.7	0.0	0.0	0.0
	B		22.4	468	31.80	188.7	0.0	0.0	0.0
5 JUL	S	1600	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	M		23.6	283	8.20	243.9	0.0	0.0	0.0
	B		22.8	375	27.40	474.5	73.0	0.0	109.5
5 JUL	S	1800	23.3	211	6.20	0.0	0.0	0.0	0.0
	M		23.3	212	11.50	347.8	0.0	0.0	0.0
	B		23.3	213	35.00	342.9	114.3	0.0	28.6
5 JUL	S	2000	23.0	206	6.80	441.2	0.0	0.0	0.0
	M		22.9	206	8.20	243.9	0.0	0.0	0.0
	B		22.9	262	31.40	286.6	31.8	0.0	668.8
5 JUL	S	2200	24.7	303	8.20	2,317.1	10,365.9	243.9	4,024.4
	M		23.7	312	9.70	721.6	2,061.9	206.2	515.5
	B		23.5	319	27.10	1,660.5	4,243.5	1,033.2	1,586.7
5 JUL	S	2400	23.7	297	8.00	875.0	16,250.0	2,250.0	1,250.0
	M		23.7	298	8.50	470.6	3,647.1	1,764.7	352.9
	B		23.4	298	54.50	311.9	1,633.0	1,119.3	73.4
6 JUL	S	0200	22.7	390	10.60	188.7	660.4	188.7	377.4
	M		22.6	419	11.50	87.0	434.8	0.0	173.9
	B		22.6	416	30.30	165.0	1,287.1	330.0	495.0
13 JUL	S	1400	24.0	2,700	3.70	270.3	270.3	0.0	0.0
	M		23.9	2,750	9.10	549.5	439.6	329.7	0.0
	B		(a)	(a)	(a)	(a)	(a)	(a)	(a)
13 JUL	S	1600	25.6	3,390	1.90	0.0	0.0	0.0	0.0
	M		24.4	3,300	8.70	114.9	574.7	0.0	0.0
	B		24.2	3,350	13.80	434.8	0.0	72.5	942.0

TABLE G[illegible] (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
13 JUL	S	1800	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	M		25.3	3,830	9.40	0.0	1,276.6	0.0	0.0
	B		24.6	4,040	9.00	444.4	23,555.6	111.1	333.3
13 JUL	S	2000	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	M		24.4	3,930	10.00	300.0	0.0	0.0	0.0
	B		24.4	4,280	24.00	125.0	1,250.0	0.0	0.0
13 JUL	S	2200	24.7	3,880	12.10	413.2	5,867.8	2,479.3	3,305.8
	M		(a)	(a)	(a)	(a)	(a)	(a)	(a)
	B		24.7	4,170	28.30	5,335.7	9,752.7	4,841.0	5,477.0
14 JUL	S	0030	24.2	3,460	4.80	833.3	9,583.3	2,500.0	4,375.0
	M		24.2	3,504	10.5	857.1	8,000.0	2,095.2	1,238.1
	B		24.2	3,480	25.60	1,640.6	6,718.7	2,070.3	1,289.0
14 JUL	S	0200	24.0	3,270	4.40	2,045.5	39,772.7	2,045.5	1,818.2
	M		23.9	3,200	11.80	339.0	18,220.3	678.0	677.9
	B		23.9	3,180	30.60	1,307.2	18,888.9	1,437.9	784.3
17 JUL	S	1400	24.3	3,350	53.00	18.9	358.5	37.7	18.9
	M		24.2	3,370	11.80	84.7	762.7	169.5	0.0
	B		24.3	3,410	54.50	256.9	532.1	403.7	18.3
17 JUL	S	1600	--	--	2.90	689.7	0.0	0.0	0.0
	M		24.1	3,110	13.60	220.6	661.8	0.0	0.0
	B		24.1	3,090	30.60	98.0	98.0	98.0	0.0
17 JUL	S	1800	26.2	3,270	20.60	48.5	0.0	0.0	0.0
	M		24.0	3,080	12.70	708.7	78.7	0.0	0.0
	B		24.1	3,060	31.50	381.0	317.5	127.0	0.0
17 JUL	S	2000	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	M		25.0	3,630	14.10	496.5	4,113.5	70.9	283.7
	B		24.5	3,730	29.20	1,232.9	23,630.1	1,232.9	890.4
17 JUL	S	2200	25.0	4,140	16.50	60.6	4,545.5	0.0	0.0
	M		25.0	4,400	9.90	1,515.2	60,202.0	1,212.1	909.1
	B		24.7	4,520	24.10	2,199.2	76,888.0	3,527.0	415.0
18 JUL	S	0030	24.2	4,020	9.30	322.6	11,720.4	2,903.2	645.2
	M		24.2	4,720	13.50	296.3	2,740.7	1,185.2	370.4
	B		24.0	5,250	28.90	1,660.9	7,508.7	2,249.1	1,003.5

TABLE G.1-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
18 JUL	S	0200	24.2	3,990	3.10	645.2	12,903.2	5,161.3	1,935.5
	M		24.2	4,070	10.60	1,037.7	2,169.8	1,792.5	660.3
	B		24.3	4,790	21.90	2,237.4	4,429.2	2,876.7	822.0
24 JUL	S	1410	27.0	3,270	31.80	0.0	0.0	0.0	0.0
	M		27.2	3,210	15.00	200.0	133.3	0.0	0.0
	B		(a)	(a)	(a)	(a)	(a)	(a)	(a)
24 JUL	S	1600	26.7	3,610	15.90	125.8	0.0	0.0	62.9
	M		26.8	3,510	18.30	163.9	109.3	0.0	109.2
	B		26.9	2,980	19.10	52.4	52.4	0.0	104.7
24 JUL	S	1800	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	M		26.6	4,240	21.80	91.7	2,156.0	0.0	91.7
	B		26.5	2,940	30.90	161.8	8,090.6	64.7	291.3
24 JUL	S	2000	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	M		26.4	3,330	27.80	4,172.7	10,251.8	1,942.4	143.9
	B		26.4	3,230	28.60	174.8	1,678.3	524.5	174.8
24 JUL	S	2200	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	M		25.8	2,710	48.90	470.3	12,249.5	613.5	572.6
	B		25.9	2,710	20.20	2,574.3	34,604.0	3,415.8	1,980.2
24 JUL	S	2400	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	M		25.7	2,450	17.40	0.0	4,855.1	747.1	1,494.3
	B		25.7	2,430	20.90	574.2	16,746.4	1,244.0	1,435.4
25 JUL	S	0200	27.2	3,180	8.70	1,034.5	9,855.1	1,149.4	1,379.3
	M		26.4	3,100	39.30	585.2	5,063.6	890.6	432.6
	B		26.3	2,630	23.60	1,949.2	13,516.9	3,389.8	1,949.2
7 AUG	S	1415	27.6	670	10.00	100.0	100.0	0.0	0.0
	M		27.3	660	24.70	40.5	809.7	40.5	0.0
	B		27.6	650	27.40	73.0	4,051.1	36.5	36.5
7 AUG	S	1600	27.6	670	13.00	153.8	307.7	0.0	0.0
	M		27.3	660	26.20	38.2	801.5	38.2	76.3
	B		27.6	650	29.20	0.0	1,369.9	0.0	102.7
7 AUG	S	1800	28.7	740	2.90	1,034.5	7,586.2	0.0	0.0
	M		27.6	730	22.00	454.5	3,863.6	227.3	45.5
	B		27.5	730	15.30	653.6	25,032.7	1,241.8	1,568.6

TABLE G[illegible] (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
7 AUG	S	2000	27.8	580	7.70	259.7	1,039.0	129.9	129.9
	M		27.7	570	23.00	434.8	913.0	347.8	130.4
	B		27.7	570	37.10	485.2	1,671.2	512.1	80.9
7 AUG	S	2200	27.8	610	4.70	2,978.7	13,191.5	1,063.8	3,404.3
	M		27.7	600	23.90	962.3	62,845.2	460.3	2,301.2
	B		27.6	590	37.70	1,432.4	94,058.4	424.4	1,485.4
7 AUG	S	2400	27.9	650	10.00	3,400.0	16,700.0	1,900.0	1,300.0
	M		27.7	650	15.00	5,333.3	31,866.7	4,666.7	1,466.7
	B		27.6	650	15.60	3,846.2	24,871.8	9,230.8	1,794.9
8 AUG	S	0200	27.8	620	6.50	307.7	15,230.8	769.2	1,538.5
	M		27.6	610	26.80	597.0	36,194.0	1,343.3	2,537.3
	B		27.8	500	18.30	1,748.6	50,491.8	3,060.1	1,092.9
11 SEP	S	1307	25.1	6,400	9.80	0.0	102.0	306.1	0.0
	M		--	--	25.00	80.0	440.0	40.0	0.0
	B		--	--	8.10	740.7	1,358.0	123.5	0.0
11 SEP	S	1500	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	M		--	--	27.10	0.0	110.7	0.0	0.0
	B		--	--	17.10	0.0	117.0	0.0	0.0
11 SEP	S	1700	26.9	7,200	13.50	74.1	1,111.1	222.2	0.0
	M		--	--	20.50	48.8	926.8	0.0	0.0
	B		--	--	16.60	120.5	6,807.2	120.5	60.2
11 SEP	S	1900	26.9	8,600	15.60	128.2	11,538.5	128.2	0.0
	M		--	--	19.60	204.1	24,030.6	153.1	0.0
	B		--	--	20.10	248.8	63,681.6	497.5	49.8
11 SEP	S	2100	25.8	7,000	18.70	160.4	12,299.5	1,016.0	53.5
	M		--	--	17.80	168.5	13,258.4	449.4	224.7
	B		--	--	16.90	414.2	45,029.6	887.5	355.0
11 SEP	S	2300	25.0	8,600	12.70	472.4	1,181.1	708.7	78.7
	M		--	--	19.70	253.8	659.9	203.0	0.0
	B		--	--	26.50	452.8	1,849.1	867.9	37.7
12 SEP	S	0100	25.2	7,200	15.80	379.7	443.0	1,012.7	126.6
	M		--	--	17.70	113.0	1,525.4	1,073.4	282.5
	B		--	--	25.10	876.5	2,151.4	1,992.0	79.7

TABLE G.1-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
10 OCT	S	1300	19.3	5,500	11.50	87.0	0.0	0.0	0.0
	M		18.9	5,460	18.80	0.0	53.2	0.0	0.0
	B		18.9	5,400	27.10	110.7	0.0	0.0	0.0
10 OCT	S	1500	18.9	4,160	6.80	0.0	0.0	0.0	0.0
	M		18.9	5,000	18.50	54.1	0.0	54.1	0.0
	B		(a)	(a)	(a)	(a)	(a)	(a)	(a)
10 OCT	S	1700	20.6	6,300	13.20	0.0	606.1	0.0	0.0
	M		20.5	6,330	20.30	0.0	394.1	0.0	0.0
	B		(a)	(a)	(a)	(a)	(a)	(a)	(a)
10 OCT	S	1900	20.1	6,290	12.20	819.7	22,541.0	245.9	0.0
	M		19.7	6,290	19.10	471.2	24,973.8	366.5	0.0
	B		(a)	(a)	(a)	(a)	(a)	(a)	(a)
10 OCT	S	2100	19.1	5,910	9.60	937.5	7,500.0	1,562.5	0.0
	M		18.9	7,720	17.40	402.3	5,862.1	1,092.0	0.0
	B		18.6	7,800	25.50	1,647.1	10,392.1	2,470.6	0.0
10 OCT	S	2300	19.0	6,300	9.10	1,208.8	329.7	549.5	0.0
	M		19.0	6,600	17.10	643.3	643.3	584.8	0.0
	B		18.9	7,120	23.80	882.4	966.4	672.3	42.0
11 OCT	S	0100	18.6	5,530	19.40	670.1	257.7	515.5	103.1
	M		18.6	5,540	12.10	1,405.0	1,239.7	909.1	0.0
	B		18.6	5,550	21.80	1,697.2	1,100.9	1,513.8	0.0
6 NOV	S	1100	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	M		14.7	1,670	21.80	321.1	0.0	183.5	0.0
	B		14.9	1,700	30.90	64.7	32.4	0.0	0.0
6 NOV	S	1300	17.7	2,020	16.10	186.3	0.0	124.2	0.0
	M		15.6	2,280	22.20	180.2	90.1	0.0	0.0
	B		15.4	2,220	29.70	67.3	808.1	0.0	33.7
6 NOV	S	1500	18.5	2,520	12.50	1,200.0	0.0	0.0	80.0
	M		16.1	2,560	19.10	104.7	0.0	0.0	0.0
	B		15.8	2,810	31.80	94.3	3,144.7	125.8	31.4
6 NOV	S	1700	17.8	3,090	39.80	25.1	201.0	0.0	0.0
	M		15.7	4,010	18.30	163.9	2,732.2	382.5	0.0
	B		15.7	4,030	33.90	826.0	20,059.0	1,179.9	0.0

TABLE G[illegible] (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
6 NOV	S	1900	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	M		15.1	3,750	24.10	2,074.7	2,821.6	2,074.7	0.0
	B		15.0	3,790	33.60	6,428.6	4,494.0	5,654.8	148.8
6 NOV	S	2100	15.5	2,450	7.70	2,077.9	2,337.7	4,285.7	0.0
	M		15.1	2,460	27.10	2,029.5	1,328.4	2,140.2	36.9
	B		15.2	2,560	26.50	2,075.5	905.7	2,264.2	0.0
6 NOV	S	2300	16.5	2,300	4.40	1,590.9	5,454.5	2,045.5	0.0
	M		15.1	2,230	29.20	1,506.8	2,089.0	890.4	102.7
	B		14.9	2,210	37.40	2,754.0	2,352.9	1,711.2	80.2
11 DEC	S	1110	6.8	2,090	20.90	47.8	1,100.5	143.5	0.0
	M		7.0	3,110	27.40	73.0	1,970.8	109.5	0.0
	B		7.0	3,280	23.30	557.9	5,665.2	171.7	0.0
11 DEC	S	1300	6.8	2,160	22.70	308.4	616.7	176.2	0.0
	M		7.2	2,550	30.00	600.0	2,166.7	1,466.7	0.0
	B		7.3	2,760	24.90	1,485.9	2,811.2	4,779.1	0.0
11 DEC	S	1500	6.5	1,900	22.10	135.7	45.2	90.5	0.0
	M		6.4	1,870	47.10	106.2	42.5	212.3	0.0
	B		6.8	1,960	29.90	401.3	401.3	568.6	0.0
11 DEC	S	1700	6.4	1,570	20.00	300.0	0.0	200.0	0.0
	M		6.4	1,550	29.90	869.6	267.6	501.7	0.0
	B		6.6	1,590	27.40	2,153.3	365.0	693.4	0.0
11 DEC	S	1900	6.8	1,500	18.40	2,173.9	1,141.3	3,260.9	0.0
	M		6.8	1,480	30.90	3,527.5	1,423.9	4,045.3	0.0
	B		6.9	1,490	27.20	4,338.2	1,323.5	4,301.5	0.0
11 DEC	S	2100	7.5	2,070	22.70	1,189.4	3,039.6	3,039.6	0.0
	M		7.5	2,090	32.30	1,981.4	4,241.5	2,817.3	0.0
	B		7.5	2,100	27.10	3,726.9	4,538.7	3,837.6	36.9
11 DEC	S	2300	7.0	2,190	20.50	1,365.9	1,609.8	4,048.8	48.8
	M		7.1	2,260	34.30	3,148.7	3,032.1	5,597.7	29.2
	B		7.2	2,370	58.00	3,448.3	4,724.1	4,069.0	0.0

(a) Data excluded from analysis because sample volume was less than 1.77 m^3 (0.1 ft/sec velocity) (see Subsection 4.2.3.1).

Note: Dashes (--) indicate data not available because of gear malfunction.
S = surface; M = middepth; B = bottom.

TABLE G.2-1 DENSITIES OF GAMMARUS SPP., NEOMYSIS AMERICANA, MONOCULODES EDWARDSI, AND CHAOBORUS PUNCTIPENNIS COLLECTED AT STATION I3 DURING THE ENTRAINMENT ABUNDANCE STUDY, INDIAN POINT GENERATING STATION, 1978

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
16 MAR	S	1303	1.6	111	(b)	(b)	(b)	(b)	(b)
	M				7.90	0.0	0.0	0.0	0.0
	B				(b)	(b)	(b)	(b)	(b)
16 MAR	S	1500	2.9	119	3.40	294.1	0.0	0.0	0.0
	M				6.70	0.0	0.0	0.0	0.0
	B				2.90	344.8	0.0	0.0	0.0
16 MAR	S	1700	4.0	138	6.40	312.5	0.0	0.0	0.0
	M				3.20	0.0	0.0	0.0	0.0
	B				(b)	(b)	(b)	(b)	(b)
16 MAR	S	1900	1.7	116	6.60	454.5	0.0	0.0	0.0
	M				2.10	952.4	0.0	0.0	0.0
	B				3.70	3,783.8	0.0	270.3	0.0
16 MAR	S	2100	1.6	111	5.50	181.8	0.0	181.8	0.0
	M				2.10	1,904.8	0.0	0.0	0.0
	B				(b)	(b)	(b)	(b)	(b)
16 MAR	S	2300	1.6	110	4.60	434.8	0.0	0.0	0.0
	M				(b)	(b)	(b)	(b)	(b)
	B				3.20	0.0	0.0	0.0	0.0
17 MAR	S	0100	1.6	110	2.50	0.0	0.0	0.0	0.0
	M				(b)	(b)	(b)	(b)	(b)
	B				(a)	(a)	(a)	(a)	(a)
17 APR	S	1300	7.9	110	(b)	(b)	(b)	(b)	(b)
	M				2.10	476.2	0.0	0.0	0.0
	B				4.10	0.0	0.0	0.0	0.0
17 APR	S	1500	7.3	94	4.10	0.0	0.0	0.0	0.0
	M				(b)	(b)	(b)	(b)	(b)
	B				3.20	312.5	0.0	312.5	0.0
17 APR	S	1700	7.9	94	4.70	0.0	0.0	0.0	0.0
	M				(b)	(b)	(b)	(b)	(b)
	B				(b)	(b)	(b)	(b)	(b)
17 APR	S	1900	8.7	211	5.20	1,346.2	0.0	0.0	0.0
	M				(b)	(b)	(b)	(b)	(b)
	B				3.[illegible]	47,027.0	0.0	1,891.9	270.3

TABLE G[illegible] (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
17 APR	S	2100	8.2	272	4.60	2,391.3	0.0	217.4	0.0
	M				2.70	2,222.2	0.0	0.0	0.0
	B				6.20	5,161.3	0.0	322.6	161.3
17 APR	S	2300	7.8	340	3.50	0.0	0.0	0.0	0.0
	M				(b)	(b)	(b)	(b)	(b)
	B				5.00	9,400.0	0.0	0.0	0.0
18 APR	S	0100	7.7	172	2.60	1,153.8	0.0	0.0	0.0
	M				1.90	6,315.8	0.0	1,578.9	0.0
	B				5.00	4,000.0	0.0	200.0	0.0
4 MAY	S	1300	11.5	103	5.40	0.0	0.0	0.0	0.0
	M				5.20	576.9	0.0	0.0	0.0
	B				5.30	1,320.8	0.0	0.0	0.0
4 MAY	S	1500	11.5	104	6.90	0.0	0.0	0.0	0.0
	M				7.70	129.9	0.0	0.0	129.9
	B				6.00	3,666.7	0.0	0.0	166.7
4 MAY	S	1700	11.1	102	7.10	0.0	0.0	0.0	0.0
	M				6.50	307.7	0.0	0.0	0.0
	B				8.20	731.7	0.0	0.0	0.0
4 MAY	S	1900	11.6	103	6.50	153.8	0.0	0.0	0.0
	M				8.20	0.0	0.0	0.0	0.0
	B				5.20	1,538.5	0.0	0.0	0.0
4 MAY	S	2100	11.3	102	4.10	3,902.4	0.0	0.0	0.0
	M				7.80	28,589.7	0.0	384.6	0.0
	B				4.10	20,000.0	0.0	0.0	0.0
4 MAY	S	2300	11.4	110	6.90	579.7	0.0	0.0	0.0
	M				7.10	17,323.9	0.0	0.0	0.0
	B				7.40	7,297.3	0.0	0.0	0.0
5 MAY	S	0100	11.1	108	6.60	757.6	0.0	0.0	0.0
	M				6.50	8,000.0	0.0	0.0	0.0
	B				5.60	17,321.4	0.0	357.1	0.0
11 MAY	S	1400	12.7	106	3.50	285.7	0.0	0.0	0.0
	M				4.20	0.0	0.0	0.0	0.0
	B				6.40	625.0	0.0	0.0	0.0

TABLE G.2-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
11 MAY	S	1600	12.2	102	1.80	0.0	0.0	0.0	0.0
	M				3.80	0.0	0.0	0.0	0.0
	B				3.20	0.0	0.0	0.0	0.0
11 MAY	S	1800	12.8	107	4.30	0.0	0.0	0.0	0.0
	M				5.60	0.0	0.0	0.0	178.6
	B				5.60	0.0	0.0	0.0	0.0
11 MAY	S	2000	12.4	108	6.00	0.0	0.0	0.0	0.0
	M				5.90	1,186.4	0.0	0.0	1,016.9
	B				5.40	185.2	0.0	185.2	740.7
11 MAY	S	2200	12.1	109	5.40	925.9	0.0	0.0	555.6
	M				4.90	1,836.8	0.0	204.1	204.1
	B				4.90	408.2	0.0	0.0	204.1
11 MAY	S	2400	12.5	112	6.70	149.3	0.0	0.0	0.0
	M				4.40	4,090.9	0.0	0.0	454.5
	B				5.30	28,113.2	0.0	0.0	188.7
12 MAY	S	0200	13.0	114	4.50	444.4	0.0	0.0	0.0
	M				3.30	22,424.2	0.0	303.0	303.0
	B				2.30	29,565.2	0.0	434.8	0.0
18 MAY	S	1400	12.8	171	8.70	459.8	0.0	114.9	0.0
	M				8.20	731.7	0.0	0.0	0.0
	B				7.50	266.7	0.0	0.0	0.0
18 MAY	S	1600	13.1	137	6.60	0.0	0.0	0.0	0.0
	M				8.70	229.9	0.0	114.9	0.0
	B				6.80	0.0	0.0	0.0	0.0
18 MAY	S	1800	13.8	147	5.60	0.0	0.0	0.0	0.0
	M				5.70	0.0	0.0	0.0	0.0
	B				5.20	192.3	0.0	0.0	0.0
18 MAY	S	2000	13.1	272	3.20	625.0	0.0	312.5	0.0
	M				3.20	937.5	0.0	0.0	312.5
	B				5.20	961.5	0.0	0.0	576.9
18 MAY	S	2221	12.9	339	3.20	312.5	0.0	0.0	0.0
	M				4.70	0.0	0.0	0.0	0.0
	B				10.20	392.2	0.0	0.0	0.0

TABLE G. (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
18 MAY	S	2400	12.9	681	4.70	212.8	0.0	0.0	0.0
	M				4.90	0.0	0.0	0.0	204.1
	B				5.20	0.0	0.0	0.0	0.0
19 MAY	S	0200	13.0	650	6.50	615.4	0.0	0.0	0.0
	M				5.60	535.7	0.0	0.0	0.0
	B				4.70	1,063.8	0.0	212.8	212.8
25 MAY	S	1400	16.0	--	6.20	161.3	0.0	0.0	0.0
	M				6.20	0.0	0.0	0.0	0.0
	B				6.10	0.0	0.0	0.0	0.0
25 MAY	S	1600	16.2	--	6.50	153.8	0.0	0.0	0.0
	M				5.40	0.0	0.0	0.0	0.0
	B				4.40	227.3	0.0	0.0	0.0
25 MAY	S	1800	16.0	--	3.50	285.7	0.0	0.0	0.0
	M				2.90	689.7	0.0	0.0	0.0
	B				3.10	645.2	0.0	0.0	0.0
25 MAY	S	2000	16.7	--	4.80	2,291.7	0.0	0.0	208.3
	M				3.50	3,428.6	0.0	0.0	0.0
	B				4.20	3,333.3	0.0	0.0	238.1
25 MAY	S	2200	15.5	--	3.80	1,052.6	0.0	0.0	526.3
	M				3.50	2,285.7	0.0	0.0	285.7
	B				2.70	7,777.8	0.0	0.0	370.4
25 MAY	S	2400	16.1	--	5.60	8,750.0	0.0	0.0	178.6
	M				10.60	14,905.7	0.0	0.0	754.7
	B				8.00	7,125.0	0.0	0.0	250.0
26 MAY	S	0200	16.6	--	6.50	11,692.3	0.0	0.0	769.2
	M				7.10	14,788.7	0.0	140.8	281.7
	B				6.20	4,516.1	0.0	0.0	0.0
1 JUN	S	1429	18.9	--	2.70	3,333.3	0.0	0.0	370.4
	M				2.70	5,925.9	0.0	0.0	0.0
	B				2.70	12,963.0	0.0	0.0	1,481.5
1 JUN	S	1601	18.0	--	5.00	1,000.0	0.0	0.0	0.0
	M				2.90	689.7	0.0	0.0	0.0
	B				3.50	571.4	0.0	0.0	0.0

TABLE G.2-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
1 JUN	S	1800	18.2	--	11.20	267.9	0.0	0.0	0.0
	M				(b)	(b)	(b)	(b)	(b)
	B				4.10	1,707.3	0.0	0.0	243.9
1 JUN	S	2000	18.8	--	5.90	1,016.9	0.0	0.0	243.9
	M				6.20	3,709.7	0.0	0.0	0.0
	B				10.20	490.2	0.0	0.0	0.0
1 JUN	S	2200	19.3	--	4.40	6,590.9	0.0	0.0	0.0
	M				4.40	53,636.4	0.0	0.0	909.0
	B				4.90	22,449.0	0.0	0.0	408.2
1 JUN	S	2400	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	M				(b)	(b)	(b)	(b)	(b)
	B				(b)	(b)	(b)	(b)	(b)
2 JUN	S	0200	19.4	--	1.80	10,555.6	0.0	0.0	0.0
	M				(b)	(b)	(b)	(b)	(b)
	B				(b)	(b)	(b)	(b)	(b)
11 SEP	S	1300	25.1	6,400	13.10	76.3	0.0	0.0	0.0
	M				10.00	100.0	400.0	0.0	0.0
	B				6.50	0.0	1,538.5	153.8	0.0
11 SEP	S	1500	25.7	6,700	10.20	0.0	0.0	0.0	0.0
	M				7.40	0.0	0.0	0.0	0.0
	B				8.00	125.0	0.0	0.0	0.0
11 SEP	S	1700	26.9	7,200	5.90	0.0	508.5	0.0	0.0
	M				8.50	0.0	352.9	0.0	0.0
	B				7.10	140.8	1,690.1	281.7	0.0
11 SEP	S	1900	26.9	8,600	6.80	0.0	735.3	0.0	0.0
	M				5.60	0.0	40,714.3	535.7	178.6
	B				3.80	1,578.9	58,947.4	789.5	0.0
11 SEP	S	2100	25.8	7,000	11.50	0.0	347.8	0.0	0.0
	M				12.70	0.0	708.7	78.7	0.0
	B				9.70	103.1	3,917.5	103.1	0.0
11 SEP	S	2300	25.0	8,600	16.20	0.0	308.6	185.6	61.7
	M				10.30	291.3	1,747.6	97.1	97.1
	B				9.10	2,087.9	2,747.3	1,098.9	439.6

TABLE G (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
12 SEP	S	0100	25.2	7,200	7.40	2,432.4	2,297.3	2,973.0	135.1
	M				8.80	340.9	1,250.0	2,045.5	113.6
	B				9.10	0.0	1,428.6	439.6	0.0
10 OCT	S	1300	19.3	5,500	11.40	0.0	0.0	87.7	0.0
	M		19.0	5,460	9.30	0.0	107.5	0.0	0.0
	B		18.9	5,460	9.00	111.1	0.0	111.1	0.0
10 OCT	S	1500	18.8	4,560	12.50	80.0	0.0	0.0	0.0
	M		18.7	5,070	11.20	0.0	267.9	89.3	0.0
	B		18.7	5,110	12.20	82.0	0.0	82.0	0.0
10 OCT	S	1700	20.6	6,300	10.00	100.0	100.0	100.0	0.0
	M		20.5	6,330	13.50	296.3	0.0	0.0	74.1
	B		20.5	6,310	10.30	0.0	194.2	0.0	0.0
10 OCT	S	1900	20.2	6,450	10.70	0.0	1,028.0	93.5	0.0
	M		20.1	6,480	11.50	695.7	16,347.8	2,087.0	0.0
	B		19.7	6,660	11.20	2,232.1	21,517.9	1,428.6	0.0
10 OCT	S	2100	19.2	6,330	12.10	0.0	2,892.6	82.6	0.0
	M		18.9	7,690	10.50	571.4	31,714.3	1,809.5	0.0
	B		18.7	7,720	8.50	1,411.8	17,176.5	1,176.5	0.0
10 OCT	S	2300	19.0	7,000	15.30	0.0	1,503.3	392.2	0.0
	M		19.0	7,320	9.60	833.3	15,729.2	833.3	0.0
	B		18.8	7,430	8.20	2,195.1	27,439.0	2,195.1	0.0
11 OCT	S	0100	18.6	5,530	10.00	600.0	1,700.0	800.0	0.0
	M		18.5	5,546	9.70	206.2	1,340.2	103.1	103.1
	B		18.3	5,550	11.00	818.2	7,545.5	1,272.7	0.0
6 NOV	S	1100	15.0	1,740	6.60	0.0	0.0	0.0	0.0
	M		14.8	1,750	4.30	1,162.8	697.7	232.6	0.0
	B		24.9	1,760	3.20	0.0	0.0	0.0	0.0
6 NOV	S	1300	16.2	2,350	5.90	169.5	169.5	0.0	0.0
	M		15.6	2,570	5.70	701.8	2,105.3	175.4	0.0
	B		15.6	2,530	2.40	0.0	2,916.7	2,916.7	0.0
6 NOV	S	1500	17.2	2,990	6.60	0.0	0.0	0.0	0.0
	M		15.6	3,280	5.00	600.0	39,400.0	0.0	0.0
	B		15.9	3,260	3.10	645.2	8,709.7	645.2	0.0

TABLE G.2-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
6 NOV	S	1700	16.4	3,570	8.20	0.0	122.0	0.0	0.0
	M		15.2	4,140	5.60	357.1	5,357.1	357.1	0.0
	B		15.3	3,980	2.40	2,916.7	9,166.7	3,333.3	0.0
6 NOV	S	1900	15.2	3,580	3.40	588.2	294.1	0.0	0.0
	M		15.0	3,890	4.30	2,790.7	1,395.3	1,860.5	0.0
	B		15.1	3,790	4.90	3,469.4	7,755.1	1,836.7	204.1
6 NOV	S	2100	15.2	2,430	5.30	2,264.2	1,509.4	3,018.9	0.0
	M		15.2	2,460	3.10	5,161.3	1,290.3	5,161.3	0.0
	B		15.2	2,460	5.00	3,400.0	1,600.0	4,400.0	0.0
6 NOV	S	2300	15.1	2,080	6.50	0.0	0.0	307.7	0.0
	M		15.1	2,070	3.40	1,470.6	3,235.3	882.4	294.1
	B		15.1	2,090	2.70	4,444.4	5,925.9	2,222.2	0.0

(a) No valid sample collected.
(b) Data excluded from analysis because sample volume was less than 1.77 m^3 (0.1 ft/sec velocity) (see Subsection 4.2.3.1).

Note: Dashes (--) indicate data not available because of gear malfunction; water quality data recorded only at surface depth until 10 October.
S = surface; M = middepth; B = bottom.

TABLE G.3-1 DENSITIES OF GAMMARUS SPP., NEOMYSIS AMERICANA, MONOCULODES EDWARDSI, AND CHAOBORUS PUNCTIPENNIS COLLECTED AT STATION D1 DURING THE ENTRAINMENT ABUNDANCE STUDY, INDIAN POINT GENERATING STATION, 1978

Date	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
1 JUN	S	1402	27.9	--	78.00	7,525.6	0.0	0.0	256.4
	M				60.10	14,925.1	0.0	0.0	249.5
	B				58.30	18,199.0	0.0	17.2	257.3
1 JUN	S	1600	27.0	--	82.80	1,328.5	0.0	0.0	24.2
	M				81.00	2,555.6	0.0	0.0	74.1
	B				79.50	2,767.3	0.0	0.0	75.5
1 JUN	S	1802	27.3	--	40.00	3,275.0	0.0	0.0	125.0
	M				71.30	2,328.2	0.0	0.0	112.2
	B				66.00	4,545.5	0.0	0.0	227.3
1 JUN	S	2000	27.5	--	38.00	37,421.1	0.0	0.0	684.2
	M				45.10	51,374.7	0.0	0.0	1,263.9
	B				107.50	36,986.0	0.0	0.0	558.1
1 JUN	S	2201	27.8	--	43.00	41,581.4	0.0	0.0	186.0
	M				79.00	23,189.8	0.0	0.0	177.3
	B				104.50	27,081.3	0.0	0.0	47.8
2 JUN	S	0015	19.8	--	75.10	11,051.9	0.0	0.0	66.5
	M				76.00	18,394.7	0.0	13.2	39.5
	B				62.10	29,017.7	0.0	16.1	128.8
2 JUN	S	0200	28.5	--	74.80	6,631.0	0.0	0.0	120.3
	M				45.40	19,867.8	0.0	22.0	176.2
	B				78.60	9,478.4	0.0	0.0	89.1
8 JUN	S	1400	30.6	203	35.00	3,428.6	0.0	0.0	0.0
	M				32.40	2,901.2	0.0	0.0	154.3
	B				57.70	4,228.8	0.0	0.0	52.0
8 JUN	S	1600	30.6	209	40.90	1,271.4	0.0	0.0	24.4
	M				38.40	2,630.2	0.0	0.0	78.1
	B				37.40	3,395.7	0.0	0.0	53.5
8 JUN	S	1800	30.6	209	50.90	2,671.9	0.0	0.0	196.5
	M				46.20	3,290.0	0.0	0.0	303.1
	B				47.90	5,615.9	0.0	0.0	626.3
8 JUN	S	2000	--	--	75.50	3,430.5	0.0	13.2	847.6
	M				72.60	7,438.0	0.0	0.0	1,446.3
	B				74.00	9,932.4	0.0	0.0	689.2

TABLE G.3-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
8 JUN	S	2200	30.6	228	9.90	54,949.5	0.0	0.0	2,727.2
	M				39.30	13,307.9	0.0	0.0	661.6
	B				41.80	17,679.4	0.0	0.0	765.5
9 JUN	S	0015	30.6	234	32.10	13,894.1	0.0	0.0	1,090.4
	M				37.70	19,363.4	0.0	0.0	1,750.6
	B				38.70	12,635.7	0.0	0.0	801.0
9 JUN	S	0200	31.3	248	32.00	9,062.5	0.0	0.0	593.7
	M				36.00	2,888.9	0.0	0.0	250.0
	B				38.90	8,072.0	0.0	0.0	514.1
15 JUN	S	1400	28.8	183	51.20	644.5	0.0	0.0	0.0
	M				52.70	379.5	0.0	0.0	0.0
	B				61.00	786.9	0.0	0.0	16.4
15 JUN	S	1600	30.0	190	48.00	562.5	0.0	0.0	0.0
	M				49.80	602.4	0.0	0.0	0.0
	B				62.70	622.0	0.0	0.0	0.0
15 JUN	S	1800	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	M				30.60	1,274.5	0.0	32.7	490.2
	B				79.20	934.3	0.0	0.0	227.2
15 JUN	S	2000	29.4	430	40.60	936.0	0.0	0.0	147.8
	M				51.50	1,572.8	0.0	0.0	330.1
	B				71.20	2,893.3	0.0	0.0	224.7
15 JUN	S	2200	30.6	553	41.50	2,674.7	0.0	0.0	554.2
	M				71.80	6,671.3	0.0	0.0	626.7
	B				48.00	12,750.0	0.0	0.0	1,041.7
15 JUN	S	2400	30.5	268	50.10	3,313.4	0.0	0.0	678.6
	M				52.70	6,546.5	0.0	0.0	740.1
	B				50.60	6,363.6	0.0	0.0	434.8
16 JUN	S	0200	30.7	274	55.30	2,133.8	0.0	0.0	253.1
	M				58.60	4,795.2	0.0	0.0	238.9
	B				58.90	5,110.4	0.0	0.0	101.9
22 JUN	S	1400	32.3	1,100	16.80	833.3	0.0	0.0	59.5
	M				37.40	401.1	107.0	0.0	53.4
	B				48.60	473.3	20.6	0.0	20.6

TABLE G. (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
22 JUN	S	1600	33.0	1,080	53.90	278.3	667.9	18.6	204.1
	M				53.90	315.4	352.5	37.1	167.0
	B				44.90	289.5	200.4	44.5	289.6
22 JUN	S	1800	33.2	750	56.00	375.0	0.0	0.0	107.1
	M				57.60	607.6	52.1	52.1	173.6
	B				78.30	740.7	153.3	0.0	127.7
22 JUN	S	2000	32.4	510	61.80	323.6	0.0	0.0	32.4
	M				51.30	389.9	19.5	0.0	78.0
	B				54.80	948.9	0.0	0.0	182.5
22 JUN	S	2200	32.2	450	41.20	1,262.1	0.0	48.5	1,189.3
	M				41.50	3,542.2	0.0	0.0	1,277.1
	B				45.60	4,605.3	0.0	21.9	1,359.7
22 JUN	S	2400	32.2	830	40.10	1,271.8	124.7	149.6	897.8
	M				34.80	2,385.1	201.1	114.9	1,666.6
	B				40.60	3,867.0	246.3	197.0	1,650.2
23 JUN	S	0200	32.0	1,470	18.60	1,774.2	1,505.4	53.8	1,397.8
	M				36.80	1,440.2	706.5	54.3	570.6
	B				42.10	2,802.9	831.4	71.3	665.1
29 JUN	S	1400	33.7	370	51.40	252.9	0.0	136.2	77.8
	M				49.90	440.9	20.0	120.2	0.0
	B				52.60	494.3	19.0	133.1	19.0
29 JUN	S	1600	33.9	520	43.60	321.1	0.0	45.9	91.7
	M				42.80	233.6	0.0	0.0	46.7
	B				45.30	529.8	0.0	22.1	44.2
29 JUN	S	1800	33.9	520	32.70	825.7	91.7	305.8	428.1
	M				36.20	1,270.7	27.6	303.9	580.1
	B				87.50	640.0	11.4	194.3	274.3
29 JUN	S	2000	33.8	120	43.60	3,784.4	0.0	435.8	229.3
	M				46.20	5,584.4	43.3	368.0	389.6
	B				49.80	6,807.2	40.2	301.2	281.1
29 JUN	S	2200	33.7	910	41.80	10,861.2	71.8	502.4	885.2
	M				38.60	21,865.3	129.5	492.2	1,476.7
	B				72.70	11,856.9	41.3	357.6	632.7

TABLE G.3-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
29 JUN	S	2400	33.8	700	43.00	8,767.4	46.5	744.2	1,255.8
	M				42.70	17,377.0	0.0	749.4	1,428.6
	B				43.90	14,350.8	22.8	637.8	660.6
30 JUN	S	0200	34.2	610	57.70	11,993.1	0.0	433.3	519.9
	M				58.30	12,401.4	0.0	188.7	360.2
	B				54.10	12,199.6	0.0	314.2	369.7
5 JUL	S	1400	22.9	333	49.50	848.5	12,282.8	101.0	20.2
	M				52.00	557.7	2,230.8	0.0	19.2
	B				67.00	253.7	0.0	0.0	29.9
5 JUL	S	1600	33.6	388	68.60	247.8	422.7	14.6	116.6
	M				67.40	341.2	252.2	0.0	14.8
	B				67.70	354.5	192.0	0.0	0.0
5 JUL	S	1800	33.0	350	70.40	241.5	3,849.4	42.6	42.6
	M				68.30	292.8	43.9	43.9	102.5
	B				72.20	332.4	3,836.6	41.6	27.7
5 JUL	S	2000	32.0	319	63.90	313.0	860.7	0.0	250.3
	M				63.60	188.7	1,116.4	15.7	141.5
	B				63.00	365.1	825.4	0.0	95.2
5 JUL	S	2200	32.3	378	46.20	3,138.5	5,064.9	1,233.8	909.1
	M				51.80	5,193.1	3,648.6	1,351.4	675.6
	B				60.10	5,590.7	4,841.9	1,331.1	116.4
5 JUL	S	2400	32.0	381	54.80	1,788.3	6,605.8	2,554.7	255.5
	M				55.10	2,994.6	7,150.6	3,067.2	254.1
	B				55.10	2,958.3	7,658.8	3,067.2	90.7
6 JUL	S	0200	31.5	515	63.60	550.3	1,572.3	534.6	534.6
	M				75.70	686.9	1,479.5	502.0	105.7
	B				75.10	825.6	932.1	319.6	66.6
13 JUL	S	1400	33.5	3,600	83.00	228.9	3,807.2	289.2	72.3
	M				55.70	395.0	5,565.5	610.4	179.5
	B				55.10	344.8	6,098.0	254.1	72.6
13 JUL	S	1600	34.1	4,050	38.00	763.2	22,684.2	447.4	684.2
	M				37.10	862.5	24,312.7	754.7	1,132.1
	B				44.80	714.3	21,517.9	424.1	535.7

TABLE G (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
13 JUL	S	1800	34.6	5,080	37.70	769.2	0.0	742.7	159.2
	M				40.90	1,100.2	33,276.3	733.5	317.8
	B				40.90	1,907.1	30,953.5	415.6	97.8
13 JUL	S	2000	33.8	5,100	42.70	1,147.5	25,737.7	1,171.0	257.6
	M				43.00	1,116.3	24,860.5	953.5	139.5
	B				49.40	931.2	19,008.1	830.0	81.0
13 JUL	S	2200	34.7	930	46.20	3,571.4	11,493.5	5,064.9	714.3
	M				46.80	3,269.2	11,688.0	5,021.4	1,688.0
	B				51.50	4,116.5	16,737.9	4,135.9	1,223.3
14 JUL	S	0030	34.2	4,220	53.00	2,434.0	4,264.2	2,471.7	1,000.0
	M				81.00	1,469.1	3,481.5	1,098.8	716.0
	B				84.80	1,273.6	3,584.9	1,025.9	353.8
14 JUL	S	0200	33.5	392	43.30	1,916.9	9,515.0	1,362.6	438.8
	M				43.90	1,321.2	7,380.4	751.7	364.5
	B				42.10	2,589.1	15,558.2	1,282.7	332.5
17 JUL	S	1400	34.0	4,120	56.10	303.0	1,016.0	855.6	71.3
	M				64.40	621.1	1,770.2	621.1	31.1
	B				64.20	389.4	1,464.2	856.7	155.8
17 JUL	S	1600	39.2	3,170	51.50	485.4	194.2	271.8	38.8
	M				52.40	496.2	667.9	305.3	19.1
	B				69.40	446.7	72.0	158.5	28.8
17 JUL	S	1800	33.7	3,850	39.80	301.5	527.6	376.9	25.1
	M				39.20	408.2	867.3	357.1	0.0
	B				46.50	473.1	559.1	236.6	0.0
17 JUL	S	2000	33.4	604	40.80	1,691.2	2,647.1	833.3	147.1
	M				36.20	1,878.5	2,900.6	994.5	359.1
	B				46.80	2,179.5	2,948.7	812.0	106.9
17 JUL	S	2200	33.5	5,420	35.30	1,898.0	127,790.4	2,832.9	198.3
	M				36.20	1,657.5	93,867.4	3,287.3	414.3
	B				45.10	1,929.0	69,933.5	2,328.2	44.3
18 JUL	S	0030	33.4	600	46.20	822.5	16,147.2	4,004.3	606.1
	M				45.40	2,709.3	16,387.7	1,189.4	484.6
	B				51.80	1,042.5	17,027.0	1,351.4	193.0

TABLE G.3-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
18 JUL	S	0200	32.7	5,040	48.60	1,378.6	5,452.7	4,053.5	843.7
	M				48.00	2,166.7	5,625.0	3,666.7	625.0
	B				53.00	2,188.7	9,056.6	2,603.8	415.1
24 JUL	S	1400	36.6	3,810	39.80	452.3	3,040.2	125.6	25.1
	M				43.60	298.2	3,555.0	252.3	0.0
	B				80.70	347.0	2,713.8	148.7	24.8
24 JUL	S	1600	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	M				37.10	539.1	1,698.1	80.9	161.7
	B				75.70	118.9	488.8	39.6	13.2
24 JUL	S	1800	36.5	4,610	52.10	556.6	6,065.3	249.5	96.0
	M				52.40	438.9	6,145.0	343.5	95.4
	B				56.20	391.5	6,174.4	338.1	0.0
24 JUL	S	2000	37.4	4,190	50.10	20.0	0.0	0.0	0.0
	M				49.50	20.2	202.0	40.4	0.0
	B				48.30	2,919.3	6,024.8	1,014.5	186.3
24 JUL	S	2200	35.7	3,260	51.20	3,574.2	27,949.2	1,406.2	820.3
	M				52.10	3,953.9	32,284.1	1,708.3	652.6
	B				58.90	4,244.5	28,013.6	1,137.5	594.2
24 JUL	S	2400	34.7	2,930	50.70	1,400.4	10,966.5	0.0	650.8
	M				52.10	1,420.3	13,051.8	940.5	422.3
	B				62.10	982.3	8,534.6	531.4	128.8
25 JUL	S	0200	35.4	3,750	44.80	2,946.4	14,352.7	2,834.8	2,187.5
	M				41.50	3,397.6	18,433.7	2,963.9	2,939.8
	B				51.80	3,127.4	14,749.0	2,316.6	1,486.5
7 AUG	S	1415	37.4	800	52.70	379.5	20,189.8	379.5	75.9
	M				47.60	336.1	31,428.6	840.3	168.1
	B				57.40	278.7	32,822.3	557.5	139.4
7 AUG	S	1600	38.2	930	51.50	310.7	30,524.3	1,165.0	466.0
	M				50.50	633.7	39,207.9	475.2	1,188.1
	B				50.70	473.4	32,347.1	552.3	473.4
7 AUG	S	1800	38.3	910	50.80	944.9	16,456.7	2,204.7	393.7
	M				50.10	1,157.7	11,297.4	1,477.0	439.1
	B				54.90	1,457.2	10,929.0	2,914.4	801.5

TABLE G (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
7 AUG	S	2000	38.5	700	75.40	1,856.8	1,591.5	1,034.5	132.6
	M				75.40	1,419.1	1,472.1	1,100.8	92.9
	B				72.90	1,755.8	1,865.6	1,262.0	82.3
7 AUG	S	2200	38.7	804	66.60	3,633.6	52,432.4	1,726.7	885.8
	M				76.60	2,154.0	38,107.1	992.2	1,370.8
	B				63.20	1,708.9	48,449.4	569.6	917.7
7 AUG	S	2400	37.9	750	42.40	6,981.1	19,245.3	5,283.0	1,132.1
	M				45.80	4,366.8	9,956.3	4,716.2	524.0
	B				55.40	3,321.3	23,971.1	2,888.1	577.6
8 AUG	S	0200	37.3	730	39.30	1,119.6	15,267.2	2,035.6	407.1
	M				52.00	1,923.1	19,000.0	3,076.9	307.7
	B				45.50	3,868.1	36,747.3	4,044.0	1,406.6
11 SEP	S	1300	33.7	7,760	64.30	0.0	0.0	15.6	0.0
	M				62.10	112.7	80.5	112.7	0.0
	B				85.00	200.0	800.0	164.7	0.0
11 SEP	S	1500	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	M				48.60	144.0	1,399.2	102.9	0.0
	B				85.70	70.0	805.1	23.3	0.0
11 SEP	S	1700	35.7	8,700	43.70	205.9	3,890.2	114.4	0.0
	M				49.50	80.8	4,040.4	202.0	0.0
	B				54.50	183.5	3,871.6	183.5	0.0
11 SEP	S	1900	35.3	9,800	54.80	164.2	10,328.5	164.2	0.0
	M				61.60	292.2	21,152.6	276.0	16.2
	B				64.20	669.8	27,118.4	825.5	15.6
11 SEP	S	2100	34.5	10,400	40.90	220.0	3,423.0	317.8	73.3
	M				45.20	575.2	16,261.1	929.2	66.4
	B				77.70	308.9	8,545.7	514.8	0.0
11 SEP	S	2300	35.0	10,100	49.20	792.7	6,443.1	1,605.7	40.7
	M				48.90	920.2	2,822.1	1,186.1	40.9
	B				55.50	828.8	2,576.6	1,387.4	18.0
12 SEP	S	0100	34.9	8,600	47.70	587.0	1,278.8	1,572.3	21.0
	M				54.80	510.9	1,605.8	1,587.6	109.5
	B				49.80	863.5	1,807.2	1,385.5	60.2

TABLE G.3-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
10 OCT	S	1300	29.4	6,780	48.30	103.5	0.0	20.7	0.0
	M				45.10	88.7	22.2	44.3	0.0
	B				49.20	61.0	61.0	40.7	0.0
10 OCT	S	1500	28.5	6,040	48.30	103.5	0.0	0.0	0.0
	M				52.40	95.4	0.0	0.0	0.0
	B				58.00	189.7	0.0	0.0	0.0
10 OCT	S	1700	30.1	7,560	43.30	230.9	1,732.1	23.1	0.0
	M				56.30	248.7	1,918.3	71.0	0.0
	B				52.40	362.6	0.0	38.2	0.0
10 OCT	S	1900	29.0	7,860	41.20	1,165.0	29,611.7	873.8	0.0
	M				43.00	2,046.5	31,814.0	837.2	0.0
	B				51.50	1,708.7	26,407.8	1,242.7	77.7
10 OCT	S	2100			44.20	226.2	16,493.2	1,719.5	0.0
	M				45.10	465.6	9,733.9	1,640.8	22.2
	B				25.60	2,148.4	16,406.2	3,125.0	78.1
10 OCT	S	2300	28.3	7,760	48.30	600.4	2,670.8	869.6	0.0
	M				53.60	1,082.1	1,492.5	970.1	18.7
	B				51.20	937.5	2,246.1	937.5	0.0
11 OCT	S	0100	28.6	6,670	52.10	537.4	1,804.2	786.9	0.0
	M				48.00	895.8	1,375.0	1,083.3	0.0
	B				57.70	1,109.2	1,507.8	814.6	0.0
6 NOV	S	1100	28.8	2,270	26.30	228.1	0.0	266.2	0.0
	M				27.10	405.9	0.0	258.3	0.0
	B				26.30	380.2	0.0	456.3	0.0
6 NOV	S	1300	29.2	2,790	22.40	714.3	2,410.7	937.5	0.0
	M				24.60	609.8	2,398.4	772.4	0.0
	B				25.90	1,003.9	2,278.0	733.6	38.6
6 NOV	S	1500	30.4	3,370	23.40	641.0	5,299.1	1,794.9	0.0
	M				25.40	826.8	6,299.2	1,692.9	0.0
	B				27.80	2,086.3	5,287.8	1,474.8	36.0
6 NOV	S	1700	29.0	5,070	24.70	1,457.5	22,996.0	1,376.5	0.0
	M				25.30	4,189.7	23,596.8	1,581.0	39.5
	B				24.70	4,736.8	20,931.2	2,024.3	0.0

TABLE G (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Gammarus spp.	Neomysis americana	Monoculodes edwardsi	Chaoborus punctipennis
6 NOV	S	1900	29.0	4,740	27.70	3,357.4	2,599.3	2,599.3	0.0
	M				27.30	7,912.1	2,820.5	4,175.8	36.6
	B				27.20	11,654.4	4,227.9	6,176.5	73.5
6 NOV	S	2100	29.7	3,370	31.60	2,183.5	886.1	2,563.3	63.3
	M				30.80	5,714.3	616.9	3,831.2	64.9
	B				29.40	8,673.5	952.4	4,727.9	136.1
6 NOV	S	2300	30.2	2,970	27.60	1,558.0	1,304.3	1,087.0	0.0
	M				27.40	3,175.2	1,642.3	1,131.4	73.0
	B				26.30	3,384.0	1,901.1	1,178.7	38.0
11 DEC	S	1111	15.5	3,960	44.90	334.1	15,790.6	801.8	0.0
	M				42.80	490.7	17,757.0	911.2	0.0
	B				44.80	915.2	11,227.7	1,875.0	0.0
11 DEC	S	1300	15.6	3,020	38.60	1,114.0	2,746.1	1,450.8	0.0
	M				39.00	410.3	3,487.2	615.4	0.0
	B				41.20	2,330.1	2,063.1	1,456.3	0.0
11 DEC	S	1500	15.7	2,450	45.60	263.2	175.4	416.7	0.0
	M				44.80	647.3	267.9	982.1	0.0
	B				44.80	959.8	200.9	379.5	0.0
11 DEC	S	1700	15.3	2,030	43.60	986.2	206.4	642.2	0.0
	M				42.80	2,546.7	93.5	887.9	0.0
	B				43.90	3,462.4	0.0	615.0	0.0
11 DEC	S	1900	15.5	1,900	42.40	1,037.7	1,533.0	1,533.0	0.0
	M				42.60	2,981.2	1,032.9	4,319.2	0.0
	B				43.60	4,656.0	894.5	2,889.9	0.0
11 DEC	S	2100	16.2	2,670	38.40	1,015.6	3,750.0	1,927.1	0.0
	M				37.80	2,169.3	2,619.0	3,571.4	0.0
	B				39.60	3,510.1	2,247.5	2,550.5	0.0
11 DEC	S	2300	16.0	2,890	42.60	2,065.7	44,319.3	2,441.3	0.0
	M				41.40	4,637.7	39,613.5	4,251.2	193.2
	B				43.60	3,302.8	23,578.0	4,220.2	0.0

(a) Data excluded from analysis because of extremely high or low sample volume.

Note: Dashes (--) indicate data unavailable because of gear malfunction; water quality data recorded only at surface depth.
S = surface; M = middepth; B = bottom.

APPENDIX H

ENTRAINMENT SURVIVAL OF STRIPED BASS EARLY DEVELOPMENTAL STAGES, INDIAN POINT GENERATING STATION, 1978

APPENDIX H TABLES

Title	Number
H.1 ENTRAINMENT SURVIVAL OF STRIPED BASS COLLECTED AT STATION I2	
Eggs	H.1-1
Yolk-Sac Larvae	H.1-2
Post Yolk-Sac Larvae	H.1-3
Juveniles	H.1-4
H.2 ENTRAINMENT SURVIVAL OF STRIPED BASS COLLECTED AT STATION I3	
Eggs	H.2-1
Yolk-Sac Larvae	H.2-2
H.3 ENTRAINMENT SURVIVAL OF STRIPED BASS COLLECTED AT STATION D1	
Eggs	H.3-1
Yolk-Sac Larvae	H.3-2
Post Yolk-Sac Larvae	H.3-3
Juveniles	H.3-4

TABLE H.1-1 ENTRAINMENT SURVIVAL OF [illegible]PED BASS EGGS COLLECTED AT INTAKE I2, INDIAN POINT GENERATING S[illegible]TION, 1978

Sampling Date	Temperature (C)			Conductivity (μmho)			Total Number Collected	Number of Individuals										
								Initial			24 Hr		48 Hr		72 Hr		96 Hr	
	Min	Max	Mean	Min	Max	Mean		Live	Stunned	Dead	Live	Dead	Live	Dead	Live	Dead	Live	Dead
1 JUN	18.2	19.8	19.1	--	--	--	79	9	0	70	8	71	8	71	8	71	8	71
8 JUN	20.8	22.1	21.5	176	221	193	3	0	0	3	0	3	0	3	0	3	0	3
15 JUN	20.5	20.9	20.7	153	212	173	0	0	0	0	0	0	0	0	0	0	0	0
22 JUN	22.2	23.2	22.5	360	930	583	0	0	0	0	0	0	0	0	0	0	0	0
29 JUN	23.8	25.9	24.4	440	530	480	0	0	0	0	0	0	0	0	0	0	0	0
5 JUL	22.7	24.7	23.6	206	390	278	0	0	0	0	0	0	0	0	0	0	0	0
13 JUL	24.0	25.6	24.5	2,700	3,880	3,340	0	0	0	0	0	0	0	0	0	0	0	0
17 JUL	24.1	26.2	24.7	3,110	4,140	3,647	0	0	0	0	0	0	0	0	0	0	0	0
24 JUL	26.7	27.2	27.0	3,180	3,610	3,353	0	0	0	0	0	0	0	0	0	0	0	0
7 AUG	27.6	28.7	27.9	580	740	649	0	0	0	0	0	0	0	0	0	0	0	0
11 SEP	25.0	26.9	25.8	6,400	8,600	7,420	0	0	0	0	0	0	0	0	0	0	0	0
10 OCT	18.6	20.6	19.4	4,160	6,360	5,721	0	0	0	0	0	0	0	0	0	0	0	0
6 NOV	15.5	18.5	17.2	2,020	3,090	2,476	0	0	0	0	0	0	0	0	0	0	0	0
11 DEC	6.4	7.5	6.8	1,500	2,190	1,926	0	0	0	0	0	0	0	0	0	0	0	0

Note: Dashes (--) indicate data not available because of gear malfunction.

TABLE H.1-2 ENTRAINMENT SURVIVAL OF STRIPED BASS YOLK-SAC LARVAE COLLECTED AT INTAKE I2, INDIAN POINT GENERATING STATION, 1978

Sampling Date	Temperature (C)			Conductivity (μmho)			Total Number Collected	Number of Individuals										
								Initial			24 Hr		48 Hr		72 Hr		96 Hr	
	Min	Max	Mean	Min	Max	Mean		Live	Stunned	Dead	Live	Dead	Live	Dead	Live	Dead	Live	Dead
1 JUN	18.2	19.8	19.1	--	--	--	38	9	1	28	8	30	5	33	1	37	0	38
8 JUN	20.8	22.1	21.5	176	221	193	36	3	0	33	0	36	0	36	0	36	0	36
15 JUN	20.5	20.9	20.7	153	212	173	1	0	0	1	0	1	0	1	0	1	0	1
22 JUN	22.2	23.2	22.5	360	930	583	1	0	0	1	0	1	0	1	0	1	0	1
29 JUN	23.8	25.9	24.4	440	530	480	0	0	0	0	0	0	0	0	0	0	0	0
5 JUL	22.7	24.7	23.6	206	390	278	0	0	0	0	0	0	0	0	0	0	0	0
13 JUL	24.0	25.6	24.5	2,700	3,880	3,340	0	0	0	0	0	0	0	0	0	0	0	0
17 JUL	24.1	26.2	24.7	3,110	4,140	3,647	0	0	0	0	0	0	0	0	0	0	0	0
24 JUL	26.7	27.2	27.0	3,180	3,610	3,353	0	0	0	0	0	0	0	0	0	0	0	0
7 AUG	27.6	28.7	27.9	580	740	649	0	0	0	0	0	0	0	0	0	0	0	0
11 SEP	25.0	26.9	25.8	6,400	8,600	7,420	0	0	0	0	0	0	0	0	0	0	0	0
10 OCT	18.6	20.6	19.4	4,160	6,360	5,721	0	0	0	0	0	0	0	0	0	0	0	0
6 NOV	15.5	18.5	17.2	2,020	3,090	2,476	0	0	0	0	0	0	0	0	0	0	0	0
11 DEC	6.4	7.5	6.8	1,500	2,190	1,926	0	0	0	0	0	0	0	0	0	0	0	0

Note: Dashes (--) indicate data not available because of gear malfunction.

TABLE H.1-3 ENTRAINMENT SURVIVAL OF STRIPED [illegible] POST YOLK-SAC LARVAE COLLECTED AT INTAKE I2, INDIAN POINT GENERATING STATION, 1978

Sampling Date	Temperature (C)			Conductivity (μmho)			Total Number Collected	Number of Individuals											
								Initial			24 Hr		48 Hr		72 Hr		96 Hr		
	Min	Max	Mean	Min	Max	Mean		Live	Stunned	Dead	Live	Dead	Live	Dead	Live	Dead	Live	Dead
1 JUN	18.2	19.8	19.1	--	--	--	0	0	0	0	0	0	0	0	0	0	0	0
8 JUN	20.8	22.1	21.5	176	221	193	17	9	0	8	2	15	1	16	1	16	1	16
15 JUN	20.5	20.9	20.7	153	212	173	140	55	20	65	27	113	25	115	20	120	17	123
22 JUN	22.2	23.2	22.5	360	930	583	39	22	2	15	21	18	21	18	20	19	18	21
29 JUN	23.8	25.9	24.4	440	530	480	16	6	0	10	3	13	3	13	3	13	3	13
5 JUL	22.7	24.7	23.6	206	390	278	1	0	1	0	0	1	0	1	0	1	0	1
13 JUL	24.0	25.6	24.5	2,700	3,880	3,340	4	4	0	0	4	0	4	0	4	0	4	0
17 JUL	24.1	26.2	24.7	3,110	4,140	3,647	0	0	0	0	0	0	0	0	0	0	0	0
24 JUL	26.7	27.2	27.0	3,180	3,610	3,353	0	0	0	0	0	0	0	0	0	0	0	0
7 AUG	27.6	28.7	27.9	580	740	649	0	0	0	0	0	0	0	0	0	0	0	0
11 SEP	25.0	26.9	25.8	6,400	8,600	7,420	0	0	0	0	0	0	0	0	0	0	0	0
10 OCT	18.6	20.6	19.4	4,160	6,360	5,721	0	0	0	0	0	0	0	0	0	0	0	0
6 NOV	15.5	18.5	17.2	2,020	3,090	2,476	0	0	0	0	0	0	0	0	0	0	0	0
11 DEC	6.4	7.5	6.8	1,500	2,190	1,926	0	0	0	0	0	0	0	0	0	0	0	0

Note: Dashes (--) indicate data not available because of gear malfunction.

TABLE H.1-4 ENTRAINMENT SURVIVAL OF STRIPED BASS JUVENILES COLLECTED AT INTAKE I2, INDIAN POINT GENERATING STATION, 1978

Sampling Date	Temperature (C)			Conductivity (µmho)			Total Number Collected	Number of Individuals										
								Initial			24 Hr		48 Hr		72 Hr		96 Hr	
	Min	Max	Mean	Min	Max	Mean		Live	Stunned	Dead	Live	Dead	Live	Dead	Live	Dead	Live	Dead
1 JUN	18.2	19.8	19.1	--	--	--	0	0	0	0	0	0	0	0	0	0	0	0
8 JUN	20.8	22.1	21.5	176	221	193	0	0	0	0	0	0	0	0	0	0	0	0
15 JUN	20.5	20.9	20.7	153	212	173	0	0	0	0	0	0	0	0	0	0	0	0
22 JUN	22.2	23.2	22.5	360	930	583	1	1	0	0	1	0	1	0	1	0	1	0
29 JUN	23.8	25.9	24.4	440	530	480	21	21	0	0	17	4	17	4	15	6	14	7
5 JUL	22.7	24.7	23.6	206	390	278	0	0	0	0	0	0	0	0	0	0	0	0
13 JUL	24.0	25.6	24.5	2,700	3,880	3,340	2	2	0	0	2	0	2	0	2	0	2	0
17 JUL	24.1	26.2	24.7	3,110	4,140	3,647	0	0	0	0	0	0	0	0	0	0	0	0
24 JUL	26.7	27.2	27.0	3,180	3,610	3,353	3	3	0	0	3	0	3	0	3	0	3	0
7 AUG	27.6	28.7	27.9	580	740	649	0	0	0	0	0	0	0	0	0	0	0	0
11 SEP	25.0	26.9	25.8	6,400	8,600	7,420	0	0	0	0	0	0	0	0	0	0	0	0
10 OCT	18.6	20.6	19.4	4,160	6,360	5,721	0	0	0	0	0	0	0	0	0	0	0	0
6 NOV	15.5	18.5	17.2	2,020	3,090	2,476	0	0	0	0	0	0	0	0	0	0	0	0
11 DEC	6.4	7.5	6.8	1,500	2,190	1,926	0	0	0	0	0	0	0	0	0	0	0	0

Note: Dashes (--) indicate data not available because of gear malfunction.

TABLE H.2-1 ENTRAINMENT SURVIVAL OF [illegible]PED BASS EGGS COLLECTED AT INTAKE I3, INDIAN POINT GENERATING S[illegible]TION, 1978

Sampling Date	Temperature (C)			Conductivity (µmho)			Total Number Collected	Number of Individuals											
								Initial			24 Hr		48 Hr		72 Hr		96 Hr		
	Min	Max	Mean	Min	Max	Mean		Live	Stunned	Dead	Live	Dead	Live	Dead	Live	Dead	Live	Dead
16 MAR	1.6	4.0	2.1	110	138	116	0	0	0	0	0	0	0	0	0	0	0	0
17 APR	7.3	8.7	8.0	94	340	217	0	0	0	0	0	0	0	0	0	0	0	0
4 MAY	11.1	11.6	11.4	102	110	105	0	0	0	0	0	0	0	0	0	0	0	0
11 MAY	12.1	12.8	12.5	102	112	107	8	6	0	2	6	2	2	6	2	6	2	6
18 MAY	12.8	13.8	13.1	137	681	342	13	6	0	7	6	7	6	7	6	7	6	7
25 MAY	15.5	16.6	16.0	--	--	--	34	30	0	4	29	5	29	5	29	5	29	5
1 JUN	18.0	19.4	18.7	--	--	--	23	9	0	14	9	14	9	14	9	14	9	14
11 SEP	25.0	26.9	25.8	6,400	8,600	7,386	0	0	0	0	0	0	0	0	0	0	0	0
10 OCT	18.8	20.6	19.5	4,560	7,000	6,023	0	0	0	0	0	0	0	0	0	0	0	0
6 NOV	15.0	17.2	15.8	1,740	3,580	2,677	0	0	0	0	0	0	0	0	0	0	0	0

Note: Dashes (--) indicate data not available because of gear malfunction.

TABLE H.2-2 ENTRAINMENT SURVIVAL OF STRIPED BASS YOLK-SAC LARVAE COLLECTED AT INTAKE I3, INDIAN POINT GENERATING STATION, 1978

Sampling Date	Temperature (C)			Conductivity (μmho)			Total Number Collected	Number of Individuals										
								Initial			24 Hr		48 Hr		72 Hr		96 Hr	
	Min	Max	Mean	Min	Max	Mean		Live	Stunned	Dead	Live	Dead	Live	Dead	Live	Dead	Live	Dead
16 MAR	1.6	4.0	2.1	110	138	116	0	0	0	0	0	0	0	0	0	0	0	0
17 APR	7.3	8.7	8.0	94	340	217	0	0	0	0	0	0	0	0	0	0	0	0
4 MAY	11.1	11.6	11.4	102	110	105	0	0	0	0	0	0	0	0	0	0	0	0
11 MAY	12.1	12.8	12.5	102	112	107	0	0	0	0	0	0	0	0	0	0	0	0
18 MAY	12.8	13.8	13.1	137	681	342	0	0	0	0	0	0	0	0	0	0	0	0
25 MAY	15.5	16.6	16.0	--	--	--	4	1	0	3	1	3	1	3	1	3	0	4
1 JUN	18.0	19.4	18.7	--	--	--	10	0	0	10	0	10	0	10	0	10	0	10
11 SEP	25.0	26.9	25.8	6,400	8,600	7,386	0	0	0	0	0	0	0	0	0	0	0	0
10 OCT	18.8	20.6	19.5	4,560	7,000	6,023	0	0	0	0	0	0	0	0	0	0	0	0
6 NOV	15.0	17.2	15.8	1,740	3,580	2,677	0	0	0	0	0	0	0	0	0	0	0	0

Note: Dashes (--) indicate data not available because of gear malfunction.

TABLE H.3-1 ENTRAINMENT SURVIVAL OF [illegible]PED BASS EGGS COLLECTED AT INTAKE D1, INDIAN POINT GENERATING STATION, 1978

Sampling Date	Temperature (C)			Conductivity (µmho)			Total Number Collected	Number of Individuals											
								Initial			24 Hr		48 Hr		72 Hr		96 Hr		
	Min	Max	Mean	Min	Max	Mean		Live	Stunned	Dead	Live	Dead	Live	Dead	Live	Dead	Live	Dead
1 JUN	19.8	28.5	26.6	--	--	--	70	1	0	69	1	69	1	69	1	69	1	69
8 JUN	30.6	31.3	30.8	203	248	223	6	0	0	6	0	6	0	6	0	6	0	6
15 JUN	28.8	30.7	30.0	183	553	304	0	0	0	0	0	0	0	0	0	0	0	0
22 JUN	32.0	33.2	32.5	450	1,470	884	0	0	0	0	0	0	0	0	0	0	0	0
29 JUN	33.6	34.2	33.9	120	910	536	0	0	0	0	0	0	0	0	0	0	0	0
5 JUL	22.9	33.6	31.0	319	515	381	0	0	0	0	0	0	0	0	0	0	0	0
13 JUL	33.5	34.7	34.1	392	5,100	3,339	0	0	0	0	0	0	0	0	0	0	0	0
17 JUL	32.7	39.2	34.3	3,170	6,040	4,806	0	0	0	0	0	0	0	0	0	0	0	0
24 JUL	34.7	37.4	36.0	2,930	4,610	3,799	0	0	0	0	0	0	0	0	0	0	0	0
7 AUG	37.3	38.7	38.0	700	930	803	0	0	0	0	0	0	0	0	0	0	0	0
11 SEP	33.7	35.7	34.7	7,700	10,400	9,074	0	0	0	0	0	0	0	0	0	0	0	0
10 OCT	28.3	30.1	28.9	6,040	8,890	7,395	0	0	0	0	0	0	0	0	0	0	0	0
6 NOV	28.8	30.4	29.5	2,270	5,070	3,511	0	0	0	0	0	0	0	0	0	0	0	0
11 DEC	15.3	16.2	15.7	1,900	3,960	2,703	0	0	0	0	0	0	0	0	0	0	0	0

Note: Dashes (--) indicate data not available because of gear malfunction.

TABLE H.3-2 ENTRAINMENT SURVIVAL OF STRIPED BASS YOLK-SAC LARVAE COLLECTED AT INTAKE D1, INDIAN POINT GENERATING STATION, 1978

Sampling Date	Temperature (C)			Conductivity (µmho)			Total Number Collected	Number of Individuals											
								Initial			24 Hr		48 Hr		72 Hr		96 Hr		
	Min	Max	Mean	Min	Max	Mean		Live	Stunned	Dead	Live	Dead	Live	Dead	Live	Dead	Live	Dead
1 JUN	19.8	28.5	26.6	--	--	--	115	0	0	115	0	115	0	115	0	115	0	115
8 JUN	30.6	31.3	30.8	203	248	223	143	0	0	143	0	143	0	143	0	143	0	143
15 JUN	28.8	30.7	30.0	183	553	304	24	0	0	24	0	24	0	24	0	24	0	24
22 JUN	32.0	33.2	32.5	450	1,470	884	12	0	0	12	0	12	0	12	0	12	0	12
29 JUN	33.6	34.2	33.9	120	910	536	0	0	0	0	0	0	0	0	0	0	0	0
5 JUL	22.9	33.6	31.0	319	515	381	0	0	0	0	0	0	0	0	0	0	0	0
13 JUL	33.5	34.7	34.1	392	5,100	3,339	0	0	0	0	0	0	0	0	0	0	0	0
17 JUL	32.7	39.2	34.3	3,170	6,040	4,806	0	0	0	0	0	0	0	0	0	0	0	0
24 JUL	34.7	37.4	36.0	2,930	4,610	3,799	0	0	0	0	0	0	0	0	0	0	0	0
7 AUG	37.3	38.7	38.0	700	930	803	0	0	0	0	0	0	0	0	0	0	0	0
11 SEP	33.7	35.7	34.7	7,700	10,400	9,074	0	0	0	0	0	0	0	0	0	0	0	0
10 OCT	28.3	30.1	28.9	6,040	8,890	7,395	0	0	0	0	0	0	0	0	0	0	0	0
6 NOV	28.8	30.4	29.5	2,270	5,070	3,511	0	0	0	0	0	0	0	0	0	0	0	0
11 DEC	15.3	16.2	15.7	1,900	3,960	2,703	0	0	0	0	0	0	0	0	0	0	0	0

Note: Dashes (--) indicate data not available because of gear malfunction.

TABLE H.3-3 ENTRAINMENT SURVIVAL OF STRIPED [illegible] POST YOLK-SAC LARVAE COLLECTED AT INTAKE D1, INDIAN POINT GENERATING STATION, 1978

Sampling Date	Temperature (C)			Conductivity (μmho)			Total Number Collected	Number of Individuals											
								Initial			24 Hr		48 Hr		72 Hr		96 Hr		
	Min	Max	Mean	Min	Max	Mean		Live	Stunned	Dead	Live	Dead	Live	Dead	Live	Dead	Live	Dead
1 JUN	19.8	28.5	26.6	--	--	--	0	0	0	0	0	0	0	0	0	0	0	0
8 JUN	30.6	31.3	30.8	203	248	223	166	0	1	165	0	166	0	166	0	166	0	166
15 JUN	28.8	30.7	30.0	183	553	304	510	1	8	501	1	509	1	509	0	510	0	510
22 JUN	32.0	33.2	32.5	450	1,470	884	388	20	15	353	24	364	24	364	21	367	19	369
29 JUN	33.6	34.2	33.9	120	910	536	33	0	0	33	0	33	0	33	0	33	0	33
5 JUL	22.9	33.6	31.0	319	515	381	1	0	0	1	0	1	0	1	0	1	0	1
13 JUL	33.5	34.7	34.1	392	5,100	3,339	4	0	1	3	0	4	0	4	0	4	0	4
17 JUL	32.7	39.2	34.3	3,170	6,040	4,806	2	0	0	2	0	2	0	2	0	2	0	2
24 JUL	34.7	37.4	36.0	2,930	4,610	3,799	2	0	0	2	0	2	0	2	0	2	0	2
7 AUG	37.3	38.7	38.0	700	930	803	0	0	0	0	0	0	0	0	0	0	0	0
11 SEP	33.7	35.7	34.7	7,700	10,400	9,074	0	0	0	0	0	0	0	0	0	0	0	0
10 OCT	28.3	30.1	28.9	6,040	8,890	7,395	0	0	0	0	0	0	0	0	0	0	0	0
6 NOV	28.8	30.4	29.5	2,270	5,070	3,511	0	0	0	0	0	0	0	0	0	0	0	0
11 DEC	15.3	16.2	15.7	1,900	3,960	2,703	0	0	0	0	0	0	0	0	0	0	0	0

Note: Dashes (--) indicate data not available because of gear malfunction.

TABLE H.3-4 ENTRAINMENT SURVIVAL OF STRIPED BASS JUVENILES COLLECTED AT INTAKE D1, INDIAN POINT GENERATING STATION, 1978

Sampling Date	Temperature (C)			Conductivity (µmho)			Total Number Collected	Number of Individuals										
								Initial			24 Hr		48 Hr		72 Hr		96 Hr	
	Min	Max	Mean	Min	Max	Mean		Live	Stunned	Dead	Live	Dead	Live	Dead	Live	Dead	Live	Dead
1 JUN	19.8	28.5	26.6	--	--	--	0	0	0	0	0	0	0	0	0	0	0	0
8 JUN	30.6	31.3	30.8	203	248	223	0	0	0	0	0	0	0	0	0	0	0	0
15 JUN	28.8	30.7	30.0	183	553	304	0	0	0	0	0	0	0	0	0	0	0	0
22 JUN	32.0	33.2	32.5	450	1,470	884	0	0	0	0	0	0	0	0	0	0	0	0
29 JUN	33.6	34.2	33.9	120	910	536	4	0	0	4	0	4	0	4	0	4	0	4
5 JUL	22.9	33.6	31.0	319	515	381	0	0	0	0	0	0	0	0	0	0	0	0
13 JUL	33.5	34.7	34.1	392	5,100	3,339	2	1	0	1	1	1	1	1	1	1	1	1
17 JUL	32.7	39.2	34.3	3,170	6,040	4,806	0	0	0	0	0	0	0	0	0	0	0	0
24 JUL	34.7	37.4	36.0	2,930	4,610	3,799	0	0	0	0	0	0	0	0	0	0	0	0
7 AUG	37.3	38.7	38.0	700	930	803	0	0	0	0	0	0	0	0	0	0	0	0
11 SEP	33.7	35.7	34.7	7,700	10,400	9,074	0	0	0	0	0	0	0	0	0	0	0	0
10 OCT	28.3	30.1	28.9	6,040	8,890	7,395	0	0	0	0	0	0	0	0	0	0	0	0
6 NOV	28.8	30.4	29.5	2,270	5,070	3,511	0	0	0	0	0	0	0	0	0	0	0	0
11 DEC	15.3	16.2	15.7	1,900	3,960	2,703	0	0	0	0	0	0	0	0	0	0	0	0

Note: Dashes (--) indicate data not available because of gear malfunction.

APPENDIX I

ENTRAINMENT SURVIVAL OF SELECTED MACROZOOPLANKTON TAXA, INDIAN POINT GENERATING STATION, 1978

APPENDIX I TABLES

Title	Number
I.1 ENTRAINMENT SURVIVAL OF SELECTED MACROZOOPLANKTON TAXA COLLECTED AT STATION I2	
Gammarus spp.	I.1-1
Neoymsis americana	I.1-2
Monoculodes edwardsi	I.1-3
Chaoborus punctipennis	I.1-4
I.2 ENTRAINMENT SURVIVAL OF SELECTED MACROZOOPLANKTON TAXA COLLECTED AT STATION I3	
Gammarus spp.	I.2-1
Neoymsis americana	I.2-2
Monoculodes edwardsi	I.2-3
Chaoborus punctipennis	I.2-4
I.3 ENTRAINMENT SURVIVAL OF SELECTED MACROZOOPLANKTON TAXA COLLECTED AT STATION D1	
Gammarus spp.	I.3-1
Neoymsis americana	I.3-2
Monoculodes edwardsi	I.3-3
Chaoborus punctipennis	I.3-4

TABLE I.1-1 ENTRAINMENT SURVIVAL OF GAM[illegible]S SPP. COLLECTED AT INTAKE STATION I2, INDIAN POINT GENERATING STATION, 1978

				Initial Observation			Latent Effects Observations									
							0 Hr	24 Hr		48 Hr		72 Hr		96 Hr		
Sampling Date	Depth	Temperature (C)	Conductivity (μmho)	No. Live	No. Stunned	No. Dead	No. Live	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead
1 JUN	S	19.4	--	3	0	4	3	3	0	1	2	0	3	0	3
	M	19.4	--	83	0	0	38[b]	38	0	23	15	11	27	9	29
	B	19.4	--	306	0	0	49[b]	49	0	31	18	13	36	11	38
8 JUN	S	20.8	185	5	2	15[a]	7	4	3	4	3	3	4	1	6
	M	20.3	183	18	0	30[a]	18	17	1	17	1	10	8	6	12
	B	20.2	184	108	0	2	49[b]	40	9	40	9	20	29	9	40
15 JUN	S	20.8	157	15	0	5	15	15	0	15	0	14	1	14	1
	M	20.8	157	25	0	16	25	25	0	23	2	22	3	15	10
	B	20.8	157	118	0	2	24[b]	24	0	21	3	18	6	16	8
22 JUN	S	22.4	360	3	0	0	3	3	0	2	1	2	1	2	1
	M	22.3	360	0	0	3	0	0	0	0	0	0	0	0	0
	B	22.1	350	9	0	3	9	7	2	7	2	7	2	0	9
29 JUN	S	23.9	530	3	0	1	3	3	0	3	0	3	0	3	0
	M	23.9	530	5	0	0	4[b]	4	0	3	1	3	1	3	1
	B	23.9	530	31	0	48[a]	31	28	3	28	3	25	6	24	7
5 JUL	S	24.7	303	1	0	9[a]	1	0	1	0	1	0	1	0	1
	M	23.7	312	6	0	0	2[b]	2	0	2	0	2	0	2	0
	B	23.5	319	12	0	33[a]	12	12	0	11	1	11	1	11	1
13 JUL	S	24.7	3,880	4	0	1	2[b]	2	0	2	0	2	0	2	0
	M	24.7	4,020	16	0	0	8[b]	8	0	8	0	8	0	8	0
	B	24.7	4,170	150	0	1	10[b]	10	0	10	0	10	0	10	0
17 JUL	S	25.0	4,140	1	0	0	1	1	0	0	1	0	1	0	1
	M	25.0	4,400	15	0	0	0[b]	0	0	0	0	0	0	0	0
	B	24.7	4,520	48	0	5	0[b]	0	0	0	0	0	0	0	0
24 JUL	S	25.8	2,710	0	0	1	0	0	0	0	0	0	0	0	0
	M	25.8	2,710	21	0	2	0[b]	0	0	0	0	0	0	0	0
	B	25.9	2,710	51	0	1	6[b]	6	0	6	0	6	0	6	0
7 AUG	S	27.8	610	13	0	1	0[b]	0	0	0	0	0	0	0	0
	M	27.7	600	23	0	0	0[b]	0	0	0	0	0	0	0	0
	B	27.6	590	6	0	6	0[b]	0	0	0	0	0	0	0	0
11 SEP	S	25.8	7,000	2	0	1[a]	0[b]	0	0	0	0	0	0	0	0
	M	25.8	7,000	0	0	3[a]	0	0	0	0	0	0	0	0	0
	B	25.8	7,000	2	2	3[a]	2[b]	1	1	1	1	1	1	1	1

TABLE I.1-1 (CONT.)

Sampling Date	Depth	Temperature (C)	Conductivity (μmho)	Initial Observation No. Live	Initial Observation No. Stunned	Initial Observation No. Dead	Latent Effects Observations 0 Hr No. Live	24 Hr No. Live	24 Hr No. Dead	48 Hr No. Live	48 Hr No. Dead	72 Hr No. Live	72 Hr No. Dead	96 Hr No. Live	96 Hr No. Dead
10 OCT	S	19.1	5,910	9	0	0	0[b]	0	0	0	0	0	0	0	0
	M	18.9	7,720	7	0	0	0[b]	0	0	0	0	0	0	0	0
	B	18.6	7,800	42	0	0	5[b]	5	0	5	0	5	0	5	0
6 NOV	S	15.2	3,190	6	0	0	1[b]	1	0	1	0	1	0	1	0
	M	15.1	3,750	50	0	0	0[b]	0	0	0	0	0	0	0	0
	B	15.0	3,790	216	0	0	10[b]	10	0	10	0	10	0	0	10
11 DEC	S	6.8	1,500	39	0	1	8[b]	8	0	8	0	8	0	8	0
	M	6.8	1,480	109	0	0	17[b]	17	0	17	0	17	0	17	0
	B	6.9	1,490	118	0	0	1[b]	1	0	1	0	1	0	1	0

(a) Data excluded from analysis because of abnormally high numbers of dead organisms.
(b) Organisms were subsampled for latent effects observations. During periods of high total macrozooplankton abundance, a maximum of 50 live and 50 stunned organisms were retained for latent effects observations. The 50 macrozooplankton subsampled for each life condition included organisms of all four major species. Low numbers of certain major species held for latent effects observations occasionally occurred as a result of their proportionally low relative abundance in a given sample.

Note: Dashes (--) indicate data not available because of gear malfunction.
S = surface; M = middepth; B = bottom.

TABLE I.1-2 ENTRAINMENT SURVIVAL OF *NEOMY[illegible] AMERICANA* COLLECTED AT INTAKE STATION I2, INDIAN POINT GENERATING STATION, 1978

Sampling Date	Depth	Temperature (C)	Conductivity (μmho)	Initial Observation			Latent Effects Observations								
							0 Hr	24 Hr		48 Hr		72 Hr		96 Hr	
				No. Live	No. Stunned	No. Dead	No. Live	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead
1 JUN	S	19.4	--	0	0	0	0	0	0	0	0	0	0	0	0
	M	19.4	--	0	0	0	0	0	0	0	0	0	0	0	0
	B	19.4	--	0	0	0	0	0	0	0	0	0	0	0	0
8 JUN	S	20.8	185	0	0	0	0	0	0	0	0	0	0	0	0
	M	20.3	183	0	0	0	0	0	0	0	0	0	0	0	0
	B	20.2	184	0	0	0	0	0	0	0	0	0	0	0	0
15 JUN	S	20.8	157	0	0	0	0	0	0	0	0	0	0	0	0
	M	20.8	157	0	0	0	0	0	0	0	0	0	0	0	0
	B	20.8	157	0	0	0	0	0	0	0	0	0	0	0	0
22 JUN	S	22.4	360	0	0	0	0	0	0	0	0	0	0	0	0
	M	22.3	360	0	0	0	0	0	0	0	0	0	0	0	0
	B	22.1	350	0	0	0	0	0	0	0	0	0	0	0	0
29 JUN	S	23.9	530	0	0	0	0	0	0	0	0	0	0	0	0
	M	23.9	530	0	0	0	0	0	0	0	0	0	0	0	0
	B	23.9	530	0	0	1[a]	0	0	0	0	0	0	0	0	0
5 JUL	S	24.7	303	8	0	5[a]	8	8	0	8	0	8	0	8	0
	M	23.7	312	19	0	1	14[b]	14	0	14	0	12	2	10	4
	B	23.5	319	15	0	100[a]	15	14	1	13	2	12	3	12	3
13 JUL	S	24.7	3,880	69	0	2	6[b]	6	0	6	0	6	0	6	0
	M	24.7	4,020	57	0	1	16[b]	16	0	14	2	14	2	14	2
	B	24.7	4,170	243	0	33	17[b]	17	0	16	1	15	2	15	2
17 JUL	S	25.0	4,140	28	0	47	28	11	17	7	21	3	25	2	26
	M	25.0	4,400	453	0	143	48[b]	46	2	32	16	18	30	15	33
	B	24.7	4,520	556	0	1,297	48[b]	18	30	8	40	4	44	2	46
24 JUL	S	25.8	2,710	18	0	0	18	18	0	15	3	14	4	11	7
	M	25.8	2,710	598	0	1	22[b]	22	0	13	9	13	9	13	9
	B	25.9	2,710	699	0	0	17[b]	17	0	17	0	12	5	9	8
7 AUG	S	27.8	610	56	0	6	56	55	1	43	13	42	14	42	14
	M	27.7	600	1,476	0	26	21[b]	21	0	20	1	15	6	12	9
	B	27.6	590	478	0	16	42[b]	38	4	18	24	11	31	8	34
11 SEP	S	25.8	7,000	65	0	165[a]	44[b]	14	30	2	42	0	44	0	44
	M	25.8	7,000	71	5	160[a]	52[b]	6	46	1	51	0	52	0	52
	B	25.8	7,000	112	34	615[a]	35[b]	30	5	29	6	25	10	23	12

TABLE I.1-2 (CONT.)

Sampling Date	Depth	Temperature (C)	Conductivity (µmho)	Initial Observation No. Live	Initial Observation No. Stunned	Initial Observation No. Dead	Latent Effects Observations 0 Hr No. Live	24 Hr No. Live	24 Hr No. Dead	48 Hr No. Live	48 Hr No. Dead	72 Hr No. Live	72 Hr No. Dead	96 Hr No. Live	96 Hr No. Dead
10 OCT	S	19.1	5,910	64	0	8	32[b]	32	0	28	4	28	4	26	6
	M	18.9	7,720	84	0	18	36[b]	36	0	34	2	31	5	31	5
	B	18.6	7,800	234	3	28	29[b]	29	0	27	2	26	3	24	5
6 NOV	S	15.2	3,190	6	0	1	5[b]	5	0	5	0	5	0	5	0
	M	15.1	3,750	63	0	5	40[b]	39	1	39	1	38	2	38	2
	B	15.0	3,790	143	0	8	34[b]	33	1	32	2	28	6	28	6
11 DEC	S	6.8	1,500	20	0	1	20	20	0	20	0	20	0	20	0
	M	6.8	1,480	43	0	1	19[b]	19	0	19	0	19	0	19	0
	B	6.9	1,490	36	0	0	33[b]	33	0	33	0	32	1	32	1

(a) Data excluded from analysis because of abnormally high numbers of dead organisms.
(b) Organisms were subsampled for latent effects observations. During periods of high total macrozooplankton abundance, a maximum of 50 live and 50 stunned organisms were retained for latent effects observations. The 50 macrozooplankton subsampled for each life condition included organisms of all four major species. Low numbers of certain major species held for latent effects observations occasionally occurred as a result of their proportionally low relative abundance in a given sample.

Note: Dashes (--) indicate data not available because of gear malfunction.
S = surface; M = middepth; B = bottom.

TABLE I.1-3 ENTRAINMENT SURVIVAL OF MONOCU[illegible]S EDWARDSI COLLECTED AT INTAKE STATION I2, INDIAN POINT GENERATING STATION, 1978

Sampling Date	Depth	Temperature (C)	Conductivity (μmho)	Initial Observation No. Live	Initial Observation No. Stunned	Initial Observation No. Dead	Latent Effects Observations 0 Hr No. Live	24 Hr No. Live	24 Hr No. Dead	48 Hr No. Live	48 Hr No. Dead	72 Hr No. Live	72 Hr No. Dead	96 Hr No. Live	96 Hr No. Dead
1 JUN	S	19.4	--	0	0	0	0	0	0	0	0	0	0	0	0
	M	19.4	--	0	0	0	0	0	0	0	0	0	0	0	0
	B	19.4	--	0	0	0	0	0	0	0	0	0	0	0	0
8 JUN	S	20.8	185	0	0	0	0	0	0	0	0	0	0	0	0
	M	20.3	183	0	0	0	0	0	0	0	0	0	0	0	0
	B	20.2	184	0	0	0	0	0	0	0	0	0	0	0	0
15 JUN	S	20.8	157	0	0	0	0	0	0	0	0	0	0	0	0
	M	20.8	157	0	0	0	0	0	0	0	0	0	0	0	0
	B	20.8	157	0	0	0	0	0	0	0	0	0	0	0	0
22 JUN	S	22.4	360	0	0	0	0	0	0	0	0	0	0	0	0
	M	22.3	360	0	0	0	0	0	0	0	0	0	0	0	0
	B	22.1	350	0	0	0	0	0	0	0	0	0	0	0	0
29 JUN	S	23.9	530	0	0	1	0	0	0	0	0	0	0	0	0
	M	23.9	530	0	0	0	0	0	0	0	0	0	0	0	0
	B	23.9	530	0	0	11[a]	0	0	0	0	0	0	0	0	0
5 JUL	S	24.7	303	0	0	2[a]	0	0	0	0	0	0	0	0	0
	M	23.7	312	2	0	0	0[b]	0	0	0	0	0	0	0	0
	B	23.5	319	0	0	28[a]	0	0	0	0	0	0	0	0	0
13 JUL	S	24.7	3,880	23	0	7	2[b]	2	0	2	0	2	0	2	0
	M	24.7	4,020	25	0	1	0[b]	0	0	0	0	0	0	0	0
	B	24.7	4,170	134	0	3	0[b]	0	0	0	0	0	0	0	0
17 JUL	S	25.0	4,140	0	0	0	0	0	0	0	0	0	0	0	0
	M	25.0	4,400	12	0	0	0[b]	0	0	0	0	0	0	0	0
	B	24.7	4,520	74	0	10	0[b]	0	0	0	0	0	0	0	0
24 JUL	S	25.8	2,710	0	0	1	0	0	0	0	0	0	0	0	0
	M	25.8	2,710	30	0	0	1[b]	1	0	1	0	1	0	1	0
	B	25.9	2,710	69	0	0	1[b]	1	0	1	0	1	0	1	0
7 AUG	S	27.8	610	5	0	0	0[b]	0	0	0	0	0	0	0	0
	M	27.7	600	11	0	0	0[b]	0	0	0	0	0	0	0	0
	B	27.6	590	2	0	0	0[b]	0	0	0	0	0	0	0	0
11 SEP	S	25.8	7,000	10	0	9[a]	0[b]	0	0	0	0	0	0	0	0
	M	25.8	7,000	0	0	8[a]	0	0	0	0	0	0	0	0	0
	B	25.8	7,000	9	2	4[a]	2[b]	2	0	2	0	1	1	0	2

TABLE I.1-3 (CONT.)

Sampling Date	Depth	Temperature (C)	Conductivity (μmho)	Initial Observation			Latent Effects Observations								
							0 Hr	24 Hr		48 Hr		72 Hr		96 Hr	
				No. Live	No. Stunned	No. Dead	No. Live	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead
10 OCT	S	19.1	5,910	15	0	0	0[b]	0	0	0	0	0	0	0	0
	M	18.9	7,720	19	0	0	0[b]	0	0	0	0	0	0	0	0
	B	18.6	7,800	61	0	2	3[b]	3	0	3	0	3	0	3	0
6 NOV	S	15.2	3,190	7	0	0	0[b]	0	0	0	0	0	0	0	0
	M	15.1	3,750	50	0	0	0[b]	0	0	0	0	0	0	0	0
	B	15.0	3,790	190	0	0	0[b]	0	0	0	0	0	0	0	0
11 DEC	S	6.8	1,500	59	0	1	20[b]	20	0	20	0	20	0	20	0
	M	6.8	1,480	123	0	2	15[b]	15	0	15	0	15	0	15	0
	B	6.9	1,490	116	0	1	18[b]	18	0	18	0	18	0	18	0

(a) Data excluded from analysis because of abnormally high numbers of dead organisms.
(b) Organisms were subsampled for latent effects observations. During periods of high total macrozooplankton abundance, a maximum of 50 live and 50 stunned organisms were retained for latent effects observations. The 50 macrozooplankton subsampled for each life condition included organisms of all four major species. Low numbers of certain major species held for latent effects observations occasionally occurred as a result of their proportionally low relative abundance in a given sample.

Note: Dashes (--) indicate data not available because of gear malfunction.
S = surface; M = middepth; B = bottom.

TABLE I.1-4 ENTRAINMENT SURVIVAL OF CHAOBORUS PUNCTIPENNIS COLLECTED AT INTAKE STATION I2, INDIAN POINT GENERATING STATION, 1978

				Initial Observation			Latent Effects Observations								
							0 Hr	24 Hr		48 Hr		72 Hr		96 Hr	
Sampling Date	Depth	Temperature (C)	Conductivity (μmho)	No. Live	No. Stunned	No. Dead	No. Live	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead
1 JUN	S	19.4	--	0	0	0	0	0	0	0	0	0	0	0	0
	M	19.4	--	1	0	0	1	1	0	1	0	1	0	0	1
	B	19.4	--	4	0	0	2[b]	2	0	2	0	2	0	1	1
8 JUN	S	20.8	185	5	0	0[a]	5	5	0	5	0	5	0	1	4
	M	20.3	183	11	0	4[a]	11	11	0	11	0	11	0	4	7
	B	20.2	184	17	0	0	12[b]	10	2	10	2	10	2	8	4
15 JUN	S	20.8	157	15	0	3[a]	15	15	0	15	0	15	0	11	4
	M	20.8	157	18	0	2[a]	18	18	0	17	1	17	1	13	5
	B	20.8	157	23	0	0	19[b]	19	0	12	7	2	17	0	19
22 JUN	S	22.4	360	2	0	2	2	2	0	2	0	1	1	1	1
	M	22.3	360	0	0	4	0	0	0	0	0	0	0	0	0
	B	22.1	350	10	0	3	10	10	0	10	0	6	4	5	5
29 JUN	S	23.9	530	4	0	0	4	4	0	4	0	4	0	4	0
	M	23.9	530	9	0	0	8[b]	7	1	7	1	7	1	7	1
	B	23.9	530	9	0	28[a]	9	7	2	7	2	6	3	6	3
5 JUL	S	24.7	303	7	0	3[a]	7	7	0	7	0	7	0	4	3
	M	23.7	312	5	0	0	2[b]	2	0	2	0	2	0	2	0
	B	23.5	319	11	0	34[a]	11	11	0	11	0	11	0	10	1
13 JUL	S	24.7	3,880	40	0	0	26[b]	26	0	25	1	25	1	25	1
	M	24.7	4,020	39	0	1	12[b]	12	0	11	1	11	1	11	1
	B	24.7	4,170	155	0	0	5[b]	5	0	5	0	4	1	4	1
17 JUL	S	25.0	4,140	0	0	0	0	0	0	0	0	0	0	0	0
	M	25.0	4,400	7	0	2	0[b]	0	0	0	0	0	0	0	0
	B	24.7	4,520	10	0	0	0[b]	0	0	0	0	0	0	0	0
24 JUL	S	25.8	2,710	3	0	2	3	3	0	3	0	3	0	2	1
	M	25.8	2,710	27	0	1	0[b]	0	0	0	0	0	0	0	0
	B	25.9	2,710	40	0	0	7[b]	7	0	7	0	7	0	7	0
7 AUG	S	27.8	610	16	0	0	0[b]	0	0	0	0	0	0	0	0
	M	27.7	600	55	0	0	8[b]	8	0	8	0	6	2	5	3
	B	27.6	590	7	0	0	0[b]	0	0	0	0	0	0	0	0
11 SEP	S	25.8	7,000	1	0	0[a]	1	0	1	0	1	0	1	0	1
	M	25.8	7,000	0	0	4[a]	0	0	0	0	0	0	0	0	0
	B	25.8	7,000	0	0	6[a]	0	0	0	0	0	0	0	0	0

TABLE I.1-4 (CONT.)

Sampling Date	Depth	Temperature (C)	Conductivity (μmho)	Initial Observation No. Live	Initial Observation No. Stunned	Initial Observation No. Dead	Latent Effects Observations 0 Hr No. Live	24 Hr No. Live	24 Hr No. Dead	48 Hr No. Live	48 Hr No. Dead	72 Hr No. Live	72 Hr No. Dead	96 Hr No. Live	96 Hr No. Dead
10 OCT	S	19.1	5,910	0	0	0	0	0	0	0	0	0	0	0	0
	M	18.9	7,720	0	0	0	0	0	0	0	0	0	0	0	0
	B	18.6	7,800	0	0	0	0	0	0	0	0	0	0	0	0
6 NOV	S	15.2	3,190	0	0	0	0	0	0	0	0	0	0	0	0
	M	15.1	3,750	0	0	0	0	0	0	0	0	0	0	0	0
	B	15.0	3,790	5	0	0	0[b]	0	0	0	0	0	0	0	0
11 DEC	S	6.8	1,500	0	0	0	0	0	0	0	0	0	0	0	0
	M	6.8	1,480	0	0	0	0	0	0	0	0	0	0	0	0
	B	6.9	1,490	0	0	0	0	0	0	0	0	0	0	0	0

(a) Data excluded from analysis because of abnormally high numbers of dead organisms.
(b) Organisms were subsampled for latent effects observations. During periods of high total macrozooplankton abundance, a maximum of 50 live and 50 stunned organisms were retained for latent effects observations. The 50 macrozooplankton subsampled for each life condition included organisms of all four major species. Low numbers of certain major species held for latent effects observations occasionally occurred as a result of their proportionally low relative abundance in a given sample.

Note: Dashes (--) indicate data not available because of gear malfunction.
S = surface; M = middepth; B = bottom.

TABLE I.2-1 ENTRAINMENT SURVIVAL OF GA[illegible]S SPP. COLLECTED AT INTAKE STATION I3, INDIAN POINT GENERATING STA[illegible]N, 1978

				Initial Observation			Latent Effects Observations									
							0 Hr	24 Hr		48 Hr		72 Hr		96 Hr		
Sampling Date	Depth	Temperature (C)	Conductivity (μmho)	No. Live	No. Stunned	No. Dead	No. Live	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead
16 MAR	S	1.6	111	1	0	0	1	1	0	1	0	1	0	1	0
	M	1.6	111	4	0	0	4	4	0	4	0	4	0	4	0
	B	1.6	111	9	0	0	9	9	0	9	0	9	0	9	0
17 APR	S	8.2	272	1	0	1	1	1	0	1	0	1	0	1	0
	M	8.2	272	6	0	0	6	6	0	6	0	6	0	6	0
	B	8.2	272	18	12	2	30	30	0	30	0	30	0	30	0
4 MAY	S	11.3	102	6	0	4	6	6	0	6	0	6	0	6	0
	M	11.3	102	104	0	119[a]	104	103	1	103	1	103	1	103	1
	B	11.3	102	67	0	15	67	67	0	66	1	66	1	66	1
11 MAY	S	12.1	109	4	0	1	4	4	0	4	0	4	0	4	0
	M	12.1	109	7	1	1	8	8	0	8	0	8	0	8	0
	B	12.1	109	2	0	0	2	2	0	2	0	2	0	1	1
18 MAY	S	12.9	339	0	0	1	0	0	0	0	0	0	0	0	0
	M	12.9	339	0	0	0	0	0	0	0	0	0	0	0	0
	B	12.9	339	0	0	4	0	0	0	0	0	0	0	0	0
25 MAY	S	15.5	--	1	0	3	1	1	0	1	0	1	0	0	1
	M	15.5	--	3	0	5	3	3	0	3	0	2	1	2	1
	B	15.5	--	7	0	14[a]	7	7	0	5	2	5	2	5	2
1 JUN	S	19.3	--	19	0	10[a]	19	19	0	18	1	14	5	12	7
	M	19.3	--	231	0	5	47[b]	47	0	29	18	19	28	10	37
	B	19.3	--	110	0	0	51[b]	51	0	38	13	30	21	28	23
11 SEP	S	25.8	7,000	0	0	0	0	0	0	0	0	0	0	0	0
	M	25.8	7,000	0	0	0	0	0	0	0	0	0	0	0	0
	B	25.8	7,000	0	0	1[a]	0	0	0	0	0	0	0	0	0
10 OCT	S	19.2	6,330	0	0	0	0	0	0	0	0	0	0	0	0
	M	18.9	7,690	0	0	6	0	0	0	0	0	0	0	0	0
	B	18.7	7,720	12	0	0	0[b]	0	0	0	0	0	0	0	0
6 NOV	S	15.2	3,580	0	0	2	0	0	0	0	0	0	0	0	0
	M	15.0	3,890	12	0	0	4[b]	4	0	4	0	4	0	4	0
	B	15.1	3,790	10	0	7[a]	10	10	0	10	0	10	0	10	0

(a) Data excluded from analysis because of abnormally high numbers of dead organisms.

(b) Organisms were subsampled for latent effects observations. During periods of high total macrozooplankton abundance, a maximum of 50 live and 50 stunned organisms were retained for latent effects observations. The 50 macrozooplankton subsampled for each life condition included organisms of all four major species. Low numbers of certain major species held for latent effects observations occasionally occurred as a result of their proportionally low relative abundance in a given sample.

Note: Dashes (--) indicate data not available because of gear malfunction.
S = surface; M = middepth; B = bottom.

TABLE I.2-2 ENTRAINMENT SURVIVAL OF *NEOMYSIS AMERICANA* COLLECTED AT INTAKE STATION I3, INDIAN POINT GENERATING STATION, 1978

				Initial Observation			Latent Effects Observations								
							0 Hr	24 Hr		48 Hr		72 Hr		96 Hr	
Sampling Date	Depth	Temperature (C)	Conductivity (μmho)	No. Live	No. Stunned	No. Dead	No. Live	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead
16 MAR	S	1.6	111	0	0	0	0	0	0	0	0	0	0	0	0
	M	1.6	111	0	0	0	0	0	0	0	0	0	0	0	0
	B	1.6	111	0	0	0	0	0	0	0	0	0	0	0	0
17 APR	S	8.2	272	0	0	0	0	0	0	0	0	0	0	0	0
	M	8.2	272	0	0	0	0	0	0	0	0	0	0	0	0
	B	8.2	272	0	0	0	0	0	0	0	0	0	0	0	0
4 MAY	S	11.3	102	0	0	0	0	0	0	0	0	0	0	0	0
	M	11.3	102	0	0	0	0	0	0	0	0	0	0	0	0
	B	11.3	102	0	0	0	0	0	0	0	0	0	0	0	0
11 MAY	S	12.1	109	0	0	0	0	0	0	0	0	0	0	0	0
	M	12.1	109	0	0	0	0	0	0	0	0	0	0	0	0
	B	12.1	109	0	0	0	0	0	0	0	0	0	0	0	0
18 MAY	S	12.9	339	0	0	0	0	0	0	0	0	0	0	0	0
	M	12.9	339	0	0	0	0	0	0	0	0	0	0	0	0
	B	12.9	339	0	0	0	0	0	0	0	0	0	0	0	0
25 MAY	S	15.5	--	0	0	0	0	0	0	0	0	0	0	0	0
	M	15.5	--	0	0	0	0	0	0	0	0	0	0	0	0
	B	15.5	--	0	0	0	0	0	0	0	0	0	0	0	0
1 JUN	S	19.3	--	0	0	0	0	0	0	0	0	0	0	0	0
	M	19.3	--	0	0	0	0	0	0	0	0	0	0	0	0
	B	19.3	--	0	0	0	0	0	0	0	0	0	0	0	0
11 SEP	S	25.8	7,000	0	0	4[a]	0	0	0	0	0	0	0	0	0
	M	25.8	7,000	0	0	9[a]	0	0	0	0	0	0	0	0	0
	B	25.8	7,000	0	0	38[a]	0	0	0	0	0	0	0	0	0
10 OCT	S	19.2	6,330	11	0	24[a]	11	11	0	11	0	10	1	8	3
	M	18.9	7,690	315	0	30	18[b]	18	0	18	0	16	2	15	3
	B	18.7	7,720	139	0	7	35[b]	35	0	33	2	30	5	27	8
6 NOV	S	15.2	3,580	0	0	1	0	0	0	0	0	0	0	0	0
	M	15.0	3,890	5	0	1	3[b]	3	0	3	0	3	0	3	0
	B	15.1	3,790	13	0	25[a]	13	13	0	13	0	10	3	10	3

(a) Data excluded from analysis because of abnormally high numbers of dead organisms.

(b) Organisms were subsampled for latent effects observations. During periods of high total macrozooplankton abundance, a maximum of 50 live and 50 stunned organisms were retained for latent effects observations. The 50 macrozooplankton subsampled for each life condition included organisms of all four major species. Low numbers of certain major species held for latent effects observations occasionally occurred as a result of their proportionally low relative abundance in a given sample.

Note: Dashes (--) indicate data not available because of gear [illegible]tion.
S = surface; M = middepth; B = bottom.

TABLE I.2-3 ENTRAINMENT SURVIVAL — *MONOCULODES EDWARDSI* COLLECTED AT INTAKE STATION I3, INDIAN POINT GENERATING STATION, 1978

				Initial Observation			Latent Effects Observations								
							0 Hr	24 Hr		48 Hr		72 Hr		96 Hr	
Sampling Date	Depth	Temperature (C)	Conductivity (μmho)	No. Live	No. Stunned	No. Dead	No. Live	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead
16 MAR	S	1.6	111	1	0	0	1	1	0	1	0	1	0	1	0
	M	1.6	111	0	0	0	0	0	0	0	0	0	0	0	0
	B	1.6	111	0	0	0	0	0	0	0	0	0	0	0	0
17 APR	S	8.2	272	0	0	1	0	0	0	0	0	0	0	0	0
	M	8.2	272	0	0	0	0	0	0	0	0	0	0	0	0
	B	8.2	272	0	0	2	0	0	0	0	0	0	0	0	0
4 MAY	S	11.3	102	0	0	0	0	0	0	0	0	0	0	0	0
	M	11.3	102	0	0	3[a]	0	0	0	0	0	0	0	0	0
	B	11.3	102	0	0	0	0	0	0	0	0	0	0	0	0
11 MAY	S	12.1	109	0	0	0	0	0	0	0	0	0	0	0	0
	M	12.1	109	1	0	0	1	1	0	1	0	1	0	1	0
	B	12.1	109	0	0	0	0	0	0	0	0	0	0	0	0
18 MAY	S	12.9	339	0	0	0	0	0	0	0	0	0	0	0	0
	M	12.9	339	0	0	0	0	0	0	0	0	0	0	0	0
	B	12.9	339	0	0	0	0	0	0	0	0	0	0	0	0
25 MAY	S	15.5	--	0	0	0	0	0	0	0	0	0	0	0	0
	M	15.5	--	0	0	0	0	0	0	0	0	0	0	0	0
	B	15.5	--	0	0	0	0	0	0	0	0	0	0	0	0
1 JUN	S	19.3	--	0	0	0[a]	0	0	0	0	0	0	0	0	0
	M	19.3	--	0	0	0	0	0	0	0	0	0	0	0	0
	B	19.3	--	0	0	0	0	0	0	0	0	0	0	0	0
11 SEP	S	25.8	7,000	0	0	0	0	0	0	0	0	0	0	0	0
	M	25.8	7,000	0	0	1[a]	0	0	0	0	0	0	0	0	0
	B	25.8	7,000	0	0	1[a]	0	0	0	0	0	0	0	0	0
10 OCT	S	19.2	6,330	0	0	1[a]	0	0	0	0	0	0	0	0	0
	M	18.9	7,690	0	0	19	0	0	0	0	0	0	0	0	0
	B	18.7	7,720	10	0	0	0[b]	0	0	0	0	0	0	0	0
6 NOV	S	15.2	3,580	0	0	0	0	0	0	0	0	0	0	0	0
	M	15.0	3,890	8	0	0	3[b]	3	0	3	0	3	0	3	0
	B	15.1	3,790	0	0	9[a]	0	0	0	0	0	0	0	0	0

(a) Data excluded from analysis because of abnormally high numbers of dead organisms.
(b) Organisms were subsampled for latent effects observations. During periods of high total macrozooplankton abundance, a maximum of 50 live and 50 stunned organisms were retained for latent effects observations. The 50 macrozooplankton subsampled for each life condition included organisms of all four major species. Low numbers of certain major species held for latent effects observations occasionally occurred as a result of their proportionally low relative abundance in a given sample.

Note: Dashes (--) indicate data not available because of gear malfunction.
S = surface; M = middepth; B = bottom.

TABLE I.2-4 ENTRAINMENT SURVIVAL OF *CHAOBORUS PUNCTIPENNIS* COLLECTED AT INTAKE STATION I3, INDIAN POINT GENERATING STATION, 1978

				Initial Observation			Latent Effects Observations								
							0 Hr	24 Hr		48 Hr		72 Hr		96 Hr	
Sampling Date	Depth	Temperature (C)	Conductivity (μmho)	No. Live	No. Stunned	No. Dead	No. Live	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead
16 MAR	S	1.6	111	0	0	0	0	0	0	0	0	0	0	0	0
	M	1.6	111	0	0	0	0	0	0	0	0	0	0	0	0
	B	1.6	111	0	0	0	0	0	0	0	0	0	0	0	0
17 APR	S	8.2	272	0	0	0	0	0	0	0	0	0	0	0	0
	M	8.2	272	0	0	0	0	0	0	0	0	0	0	0	0
	B	8.2	272	1	0	0	1	1	0	1	0	1	0	1	0
4 MAY	S	11.3	102	0	0	0	0	0	0	0	0	0	0	0	0
	M	11.3	102	0	0	0	0	0	0	0	0	0	0	0	0
	B	11.3	102	0	0	0	0	0	0	0	0	0	0	0	0
11 MAY	S	12.1	109	0	3	0	3	3	0	3	0	3	0	3	0
	M	12.1	109	1	0	0	1	1	0	1	0	1	0	1	0
	B	12.1	109	1	0	0	1	1	0	1	0	1	0	1	0
18 MAY	S	12.9	339	0	0	0	0	0	0	0	0	0	0	0	0
	M	12.9	339	0	0	0	0	0	0	0	0	0	0	0	0
	B	12.9	339	0	0	0	0	0	0	0	0	0	0	0	0
25 MAY	S	15.5	--	1	0	1	1	1	0	1	0	1	0	1	0
	M	15.5	--	1	0	0	1	1	0	0	1	0	1	0	1
	B	15.5	--	1	0	0[a]	1	1	0	1	0	1	0	1	0
1 JUN	S	19.3	--	0	0	0	0	0	0	0	0	0	0	0	0
	M	19.3	--	3	0	1	3	3	0	3	0	2	1	2	1
	B	19.3	--	2	0	0	0[b]	0	0	0	0	0	0	0	0
11 SEP	S	25.8	7,000	0	0	0	0	0	0	0	0	0	0	0	0
	M	25.8	7,000	0	0	0	0	0	0	0	0	0	0	0	0
	B	25.8	7,000	0	0	0	0	0	0	0	0	0	0	0	0
10 OCT	S	19.2	6,330	0	0	0	0	0	0	0	0	0	0	0	0
	M	18.9	7,690	0	0	0	0	0	0	0	0	0	0	0	0
	B	18.7	7,720	0	0	0	0	0	0	0	0	0	0	0	0
6 NOV	S	15.2	3,582	0	0	0	0	0	0	0	0	0	0	0	0
	M	15.0	3,890	0	0	0	0	0	0	0	0	0	0	0	0
	B	15.1	3,790	0	0	1[a]	0	0	0	0	0	0	0	0	0

(a) Data excluded from analysis because of abnormally high numbers of dead organisms.

(b) Organisms were subsampled for latent effects observations. During periods of high total macrozooplankton abundance, a maximum of 50 live and 50 stunned organisms were retained for latent effects observations. The 50 macrozooplankton subsampled for each life condition included organisms of all four major species. Low numbers of certain major species held for latent effects observations occasionally occurred as a result of their proportionally low relative abundance in a given sample.

Note: Dashes (--) indicate data not available because of gear [illegible]ction.
S = surface; M = middepth; B = bottom.

TABLE I.3-1 ENTRAINMENT SURVIVAL OF GAMMARUS SPP. COLLECTED AT DISCHARGE STATION D1, INDIAN POINT GENERATING STATION, 1978

Sampling Date	Depth	Temperature (C)	Conductivity (μmho)	Initial Observation No. Live	Initial Observation No. Stunned	Initial Observation No. Dead	Latent Effects Observations 0 Hr No. Live	24 Hr No. Live	24 Hr No. Dead	48 Hr No. Live	48 Hr No. Dead	72 Hr No. Live	72 Hr No. Dead	96 Hr No. Live	96 Hr No. Dead
1 JUN	S	27.8	--	1,764	0	24	49[a]	49	0	30	19	18	31	6	43
	M	27.8	--	1,599	16	217	46[a]	46	0	20	26	13	33	7	39
	B	27.8	--	2,755	0	75	52[a]	52	0	37	15	29	23	21	31
8 JUN	S	30.6	228	532	0	12	24[a]	18	6	18	6	7	17	3	21
	M	30.6	228	499	0	24	20[a]	16	4	16	4	13	7	11	9
	B	30.6	228	695	1	42	26[a]	22	4	22	4	14	12	8	18
15 JUN	S	30.6	553	91	0	20	34[a]	32	2	29	5	26	8	26	8
	M	30.6	553	479	0	0	43[a]	38	5	35	8	30	13	28	15
	B	30.6	553	621	0	11	40[a]	40	0	40	0	38	2	38	2
22 JUN	S	32.2	450	47	0	5	19[a]	16	3	14	5	13	6	12	7
	M	32.2	450	138	0	9	32[a]	26	6	26	6	23	9	23	9
	B	32.2	450	205	0	5	34[a]	26	8	26	8	22	12	21	13
29 JUN	S	33.7	910	393	0	61	32[a]	31	1	30	2	26	6	25	7
	M	33.7	910	808	0	36	33[a]	32	1	30	3	27	6	24	9
	B	33.6	910	802	0	60	28[a]	27	1	27	1	27	1	27	1
5 JUL	S	32.3	378	128	0	17	24[a]	23	1	22	2	21	3	21	3
	M	32.3	378	250	0	19	36[a]	35	1	33	3	33	3	33	3
	B	32.3	378	311	0	25	15[a]	15	0	15	0	15	0	15	0
13 JUL	S	34.7	930	112	0	53	27[a]	27	0	27	0	27	0	26	1
	M	34.7	930	135	0	18	21[a]	20	1	18	3	18	3	18	3
	B	34.7	930	186	0	26	32[a]	31	1	31	1	31	1	31	1
17 JUL	S	33.5	5,420	52	0	15	23[a]	23	0	23	0	23	0	23	0
	M	33.5	5,420	38	0	22	15[a]	15	0	15	0	15	0	15	0
	B	33.5	5,420	54	0	33	22[a]	22	0	22	0	0	22	0	22
24 JUL	S	35.7	3,260	26	0	157	21[a]	21	0	21	0	21	0	21	0
	M	35.7	3,260	36	0	170	21[a]	20	1	20	1	20	1	20	1
	B	35.7	3,260	18	0	232	13[a]	10	3	10	3	10	3	10	3
7 AUG	S	38.7	804	34	0	208	20[a]	20	0	20	0	20	0	20	0
	M	38.7	804	45	0	120	37[a]	30	7	30	7	30	7	30	7
	B	38.7	804	36	0	72	29[a]	26	3	25	4	25	4	25	4
11 SEP	S	34.5	10,400	6	0	3	6	5	1	5	1	5	1	5	1
	M	34.5	10,400	6	2	18	8	7	1	6	2	6	2	6	2
	B	34.5	10,400	14	0	10	14	11	3	8	6	6	8	6	8

TABLE I.3-1 (CONT.)

Sampling Date	Depth	Temperature (C)	Conductivity (μmho)	Initial Observation			Latent Effects Observations								
							0 Hr	24 Hr		48 Hr		72 Hr		96 Hr	
				No. Live	No. Stunned	No. Dead	No. Live	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead
10 OCT	S	28.8	8,890	10	0	0	0[a]	0	0	0	0	0	0	0	0
	M	28.8	8,890	21	0	0	0[a]	0	0	0	0	0	0	0	0
	B	28.8	8,890	53	0	2	19[a]	19	0	19	0	19	0	19	0
6 NOV	S	29.0	4,740	41	8	44	22[a]	19	3	18	4	17	5	17	5
	M	29.0	4,740	212	0	4	36[a]	36	0	34	2	34	2	34	2
	B	29.0	4,740	293	9	15	59[a]	59	0	59	0	57	2	57	2
11 DEC	S	15.5	1,900	44	0	0	12[a]	12	0	12	0	12	0	12	0
	M	15.5	1,900	126	0	1	25[a]	24	1	24	1	24	1	24	1
	B	15.5	1,900	201	0	2	30[a]	30	0	30	0	30	0	30	0

(a) Organisms were subsampled for latent effects observations. During periods of high total macrozooplankton abundance, a maximum of 50 live and 50 stunned organisms were retained for latent effects observations. The 50 macrozooplankton subsampled for each life condition included organisms of all four major species. Low numbers of certain major species held for latent effects observations occasionally occurred as a result of their proportionally low relative abundance in a given sample.

Note: Dashes (--) indicate data not available because of gear malfunction.
S = surface; M = middepth; B = bottom.

TABLE I.3-2 ENTRAINMENT SURVIVAL OF NEOMYS[illegible]MERICANA COLLECTED AT DISCHARGE STATION D1, INDIAN POINT GENERATING STATION, 1978

Sampling Date	Depth	Temperature (C)	Conductivity (µmho)	Initial Observation No. Live	Initial Observation No. Stunned	Initial Observation No. Dead	Latent Effects Observations 0 Hr No. Live	24 Hr No. Live	24 Hr No. Dead	48 Hr No. Live	48 Hr No. Dead	72 Hr No. Live	72 Hr No. Dead	96 Hr No. Live	96 Hr No. Dead
1 JUN	S	27.8	--	0	0	0	0	0	0	0	0	0	0	0	0
	M	27.8	--	0	0	0	0	0	0	0	0	0	0	0	0
	B	27.8	--	0	0	0	0	0	0	0	0	0	0	0	0
8 JUN	S	30.6	228	0	0	0	0	0	0	0	0	0	0	0	0
	M	30.6	228	0	0	0	0	0	0	0	0	0	0	0	0
	B	30.6	228	0	0	0	0	0	0	0	0	0	0	0	0
15 JUN	S	30.6	553	0	0	0	0	0	0	0	0	0	0	0	0
	M	30.6	553	0	0	0	0	0	0	0	0	0	0	0	0
	B	30.6	553	0	0	0	0	0	0	0	0	0	0	0	0
22 JUN	S	32.2	450	0	0	0	0	0	0	0	0	0	0	0	0
	M	32.2	450	0	0	0	0	0	0	0	0	0	0	0	0
	B	32.2	450	0	0	0	0	0	0	0	0	0	0	0	0
29 JUN	S	33.7	910	1	0	2	0[a]	0	0	0	0	0	0	0	0
	M	33.7	910	5	0	0	0[a]	0	0	0	0	0	0	0	0
	B	33.6	910	3	0	0	0[a]	0	0	0	0	0	0	0	0
5 JUL	S	32.3	378	62	0	172	7[a]	7	0	6	1	6	1	6	1
	M	32.3	378	55	0	134	0[a]	0	0	0	0	0	0	0	0
	B	32.3	378	134	0	157	14[a]	13	1	12	2	11	3	11	3
13 JUL	S	34.7	930	66	0	465	0[a]	0	0	0	0	0	0	0	0
	M	34.7	930	141	0	406	0[a]	0	0	0	0	0	0	0	0
	B	34.7	930	160	0	702	0[a]	0	0	0	0	0	0	0	0
17 JUL	S	33.5	5,420	13	0	2,039	13	9	4	7	6	7	6	6	7
	M	33.5	5,420	79	0	3,319	8[a]	8	0	7	1	7	1	7	1
	B	33.5	5,420	35	0	3,119	2[a]	1	1	0	2	0	2	0	2
24 JUL	S	35.7	3,260	35	0	1,396	0[a]	0	0	0	0	0	0	0	0
	M	35.7	3,260	18	0	1,664	0[a]	0	0	0	0	0	0	0	0
	B	35.7	3,260	20	0	1,630	15[a]	14	1	14	1	14	1	14	1
7 AUG	S	38.7	804	44	0	3,448	0[a]	0	0	0	0	0	0	0	0
	M	38.7	804	23	0	2,896	0[a]	0	0	0	0	0	0	0	0
	B	38.7	804	14	0	3,048	0[a]	0	0	0	0	0	0	0	0
11 SEP	S	34.5	10,400	3	0	137	3	3	0	3	0	3	0	2	1
	M	34.5	10,400	0	0	735	0	0	0	0	0	0	0	0	0
	B	34.5	10,400	0	0	664	0	0	0	0	0	0	0	0	0

TABLE I.3-2 (CONT.)

Sampling Date	Depth	Temperature (C)	Conductivity (μmho)	Initial Observation No. Live	Initial Observation No. Stunned	Initial Observation No. Dead	Latent Effects Observations 0 Hr No. Live	24 Hr No. Live	24 Hr No. Dead	48 Hr No. Live	48 Hr No. Dead	72 Hr No. Live	72 Hr No. Dead	96 Hr No. Live	96 Hr No. Dead
10 OCT	S	28.8	8,890	630	0	99	34[a]	34	0	23	11	17	17	10	24
	M	28.8	8,890	377	0	62	32[a]	32	0	28	4	24	8	16	16
	B	28.8	8,890	274	0	146	21[a]	21	0	16	5	15	6	14	7
6 NOV	S	29.0	4,740	28	0	44	22[a]	19	3	15	7	11	11	11	11
	M	29.0	4,740	36	8	33	21[a]	15	6	13	8	13	8	10	11
	B	29.0	4,740	47	0	68	0[a]	0	0	0	0	0	0	0	0
11 DEC	S	15.5	1,900	56	0	9	28[a]	27	1	27	1	26	2	26	2
	M	15.5	1,900	34	0	10	17[a]	17	0	16	1	16	1	13	4
	B	15.5	1,900	35	0	4	19[a]	17	2	16	3	12	7	10	9

(a) Organisms were subsampled for latent effects observations. During periods of high total macrozooplankton abundance, a maximum of 50 live and 50 stunned organisms were retained for latent effects observations. The 50 macrozooplankton subsampled for each life condition included organisms of all four major species. Low numbers of certain major species held for latent effects observations occasionally occurred as a result of their proportionally low relative abundance in a given sample.

Note: Dashes (--) indicate data not available because of gear malfunction.
S = surface; M = middepth; B = bottom.

TABLE I.3-3 ENTRAINMENT SURVIVAL OF *MONOCULODES EDWARDSI* COLLECTED AT DISCHARGE STATION D1, INDIAN POINT GENERATING STATION, 1978

				Initial Observation			Latent Effects Observations								
							0 Hr	24 Hr		48 Hr		72 Hr		96 Hr	
Sampling Date	Depth	Temperature (C)	Conductivity (μmho)	No. Live	No. Stunned	No. Dead	No. Live	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead
1 JUN	S	27.8	--	0	0	0	0	0	0	0	0	0	0	0	0
	M	27.8	--	0	0	0	0	0	0	0	0	0	0	0	0
	B	27.8	--	0	0	0	0	0	0	0	0	0	0	0	0
8 JUN	S	30.6	228	0	0	0	0	0	0	0	0	0	0	0	0
	M	30.6	228	0	0	0	0	0	0	0	0	0	0	0	0
	B	30.6	228	0	0	0	0	0	0	0	0	0	0	0	0
15 JUN	S	30.6	553	0	0	0	0	0	0	0	0	0	0	0	0
	M	30.6	553	0	0	0	0	0	0	0	0	0	0	0	0
	B	30.6	553	0	0	0	0	0	0	0	0	0	0	0	0
22 JUN	S	32.2	450	2	0	0	0[a]	0	0	0	0	0	0	0	0
	M	32.2	450	0	0	0	0	0	0	0	0	0	0	0	0
	B	32.2	450	1	0	0	0[a]	0	0	0	0	0	0	0	0
29 JUN	S	33.7	910	19	0	2	0[a]	0	0	0	0	0	0	0	0
	M	33.7	910	19	0	0	0[a]	0	0	0	0	0	0	0	0
	B	33.6	910	26	0	0	0[a]	0	0	0	0	0	0	0	0
5 JUL	S	32.3	378	54	0	3	0[a]	0	0	0	0	0	0	0	0
	M	32.3	378	67	0	3	0[a]	0	0	0	0	0	0	0	0
	B	32.3	378	78	0	2	0[a]	0	0	0	0	0	0	0	0
13 JUL	S	34.7	930	198	0	36	0[a]	0	0	0	0	0	0	0	0
	M	34.7	930	202	0	33	0[a]	0	0	0	0	0	0	0	0
	B	34.7	930	198	0	15	1[a]	1	0	1	0	1	0	1	0
17 JUL	S	33.5	5,420	93	0	7	2[a]	1	1	1	1	1	1	1	1
	M	33.5	5,420	70	0	49	10[a]	10	0	10	0	10	0	10	0
	B	33.5	5,420	54	0	51	9[a]	9	0	9	0	0	9	0	9
24 JUL	S	35.7	3,260	9	0	63	1[a]	1	0	1	0	1	0	0	1
	M	35.7	3,260	12	0	77	0[a]	0	0	0	0	0	0	0	0
	B	35.7	3,260	7	0	60	2[a]	2	0	2	0	2	0	2	0
7 AUG	S	38.7	804	3	0	112	0[a]	0	0	0	0	0	0	0	0
	M	38.7	804	4	0	72	2[a]	1	1	1	1	1	1	1	1
	B	38.7	804	4	0	32	0[a]	0	0	0	0	0	0	0	0
11 SEP	S	34.5	10,400	1	0	12	1	1	0	1	0	1	0	1	0
	M	34.5	10,400	5	0	37	5	5	0	4	1	4	1	4	1
	B	34.5	10,400	6	0	34	6	6	0	6	0	6	0	6	0

TABLE I.3-3 (CONT.)

Sampling Date	Depth	Temperature (C)	Conductivity (μmho)	Initial Observation No. Live	Initial Observation No. Stunned	Initial Observation No. Dead	Latent Effects Observations 0 Hr No. Live	24 Hr No. Live	24 Hr No. Dead	48 Hr No. Live	48 Hr No. Dead	72 Hr No. Live	72 Hr No. Dead	96 Hr No. Live	96 Hr No. Dead
10 OCT	S	28.8	8,890	76	0	0	0[a]	0	0	0	0	0	0	0	0
	M	28.8	8,890	73	0	1	0[a]	0	0	0	0	0	0	0	0
	B	28.8	8,890	77	0	3	1[a]	1	0	0	1	0	1	0	1
6 NOV	S	29.0	4,740	61	0	11	3[a]	3	0	3	0	3	0	3	0
	M	29.0	4,740	114	0	0	0[a]	0	0	0	0	0	0	0	0
	B	29.0	4,740	168	0	0	2[a]	2	0	2	0	2	0	2	0
11 DEC	S	15.5	1,900	64	0	1	10[a]	10	0	10	0	10	0	10	0
	M	15.5	1,900	180	0	4	7[a]	7	0	7	0	7	0	7	0
	B	15.5	1,900	125	0	1	0[a]								

(a) Organisms were subsampled for latent effects observations. During periods of high total macrozooplankton abundance, a maximum of 50 live and 50 stunned organisms were retained for latent effects observations. The 50 macrozooplankton subsampled for each life condition included organisms of all four major species. Low numbers of certain major species held for latent effects observations occasionally occurred as a result of their proportionally low relative abundance in a given sample.

Note: Dashes (--) indicate data not available because of gear malfunction.
S = surface; M = middepth; B = bottom.

TABLE I.3-4 ENTRAINMENT SURVIVAL OF CHAOBORUS PUNCTIPENNIS COLLECTED AT DISCHARGE STATION D1, INDIAN POINT GENERATING STATION, 1978

Sampling Date	Depth	Temperature (C)	Conductivity (μmho)	Initial Observation			Latent Effects Observations									
							0 Hr	24 Hr		48 Hr		72 Hr		96 Hr	
				No. Live	No. Stunned	No. Dead	No. Live	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead	No. Live	No. Dead
1 JUN	S	27.8	--	8	0	0	0[a]	0	0	0	0	0	0	0	0
	M	27.8	--	11	0	2	4[a]	4	0	4	0	4	0	2	2
	B	27.8	--	5	0	0	0[a]	0	0	0	0	0	0	0	0
8 JUN	S	30.6	228	30	0	0	16[a]	15	1	15	1	13	3	9	7
	M	30.6	228	28	0	0	15[a]	15	0	15	0	12	3	9	6
	B	30.6	228	32	0	0	10[a]	10	0	10	0	6	4	1	9
15 JUN	S	30.6	553	25	0	0	15[a]	15	0	15	0	12	3	8	7
	M	30.6	553	47	0	0	8[a]	7	1	7	1	7	1	5	3
	B	30.6	553	50	0	0	10[a]	10	0	10	0	0	10	0	10
22 JUN	S	32.2	450	48	0	1	26[a]	21	5	20	6	4	22	3	23
	M	32.2	450	53	0	0	12[a]	7	5	7	5	3	9	3	9
	B	32.2	450	62	0	0	3[a]	3	0	3	0	2	1	2	1
29 JUN	S	33.7	910	37	0	0	10[a]	9	1	6	4	4	6	4	6
	M	33.7	910	53	0	4	10[a]	9	1	8	2	6	4	6	4
	B	33.6	910	46	0	0	10[a]	9	1	8	2	7	3	7	3
5 JUL	S	32.3	378	42	0	0	8[a]	8	0	6	2	6	2	6	2
	M	32.3	378	35	0	0	10[a]	10	0	10	0	10	0	10	0
	B	32.3	378	9	0	0	9	9	0	9	0	7	2	7	2
13 JUL	S	34.7	930	25	0	7	12[a]	12	0	12	0	10	2	10	2
	M	34.7	930	76	0	3	12[a]	11	1	11	1	11	1	11	1
	B	34.7	930	61	0	2	6[a]	6	0	6	0	6	0	6	0
17 JUL	S	33.5	5,420	5	0	2	0[a]	0	0	0	0	0	0	0	0
	M	33.5	5,420	13	0	2	7[a]	7	0	7	0	6	1	6	1
	B	33.5	5,420	2	0	0	2	2	0	2	0	2	0	2	0
24 JUL	S	35.7	3,260	18	0	24	15[a]	15	0	13	2	12	3	6	9
	M	35.7	3,260	15	0	18	9[a]	9	0	8	1	7	2	7	2
	B	35.7	3,260	6	0	29	4[a]	4	0	2	2	0	4	0	4
7 AUG	S	38.7	804	27	0	32	25[a]	23	2	20	5	19	6	19	6
	M	38.7	804	25	0	80	0[a]	0	0	0	0	0	0	0	0
	B	38.7	804	28	0	32	16[a]	15	1	15	1	12	4	12	4
11 SEP	S	34.5	10,400	0	0	3	0	0	0	0	0	0	0	0	0
	M	34.5	10,400	0	0	3	0	0	0	0	0	0	0	0	0
	B	34.5	10,400	0	0	0	0	0	0	0	0	0	0	0	0

TABLE I.3-4 (CONT.)

Sampling Date	Depth	Temperature (C)	Conductivity (μmho)	Initial Observation No. Live	Initial Observation No. Stunned	Initial Observation No. Dead	Latent Effects Observations 0 Hr No. Live	24 Hr No. Live	24 Hr No. Dead	48 Hr No. Live	48 Hr No. Dead	72 Hr No. Live	72 Hr No. Dead	96 Hr No. Live	96 Hr No. Dead
10 OCT	S	28.8	8,890	0	0	0	0	0	0	0	0	0	0	0	0
	M	28.8	8,890	1	0	0	0[a]	0	0	0	0	0	0	0	0
	B	28.8	8,890	2	0	0	0[a]	0	0	0	0	0	0	0	0
6 NOV	S	29.0	4,740	0	0	0	0	0	0	0	0	0	0	0	0
	M	29.0	4,740	1	0	0	0[a]	0	0	0	0	0	0	0	0
	B	29.0	4,740	2	0	0	0[a]	0	0	0	0	0	0	0	0
11 DEC	S	15.5	1,900	0	0	0	0	0	0	0	0	0	0	0	0
	M	15.5	1,900	0	0	0	0	0	0	0	0	0	0	0	0
	B	15.5	1,900	0	0	0	0	0	0	0	0	0	0	0	0

(a) Organisms were subsampled for latent effects observations. During periods of high total macrozooplankton abundance, a maximum of 50 live and 50 stunned organisms were retained for latent effects observations. The 50 macrozooplankton subsampled for each life condition included organisms of all four major species. Low numbers of certain major species held for latent effects observations occasionally occurred as a result of their proportionally low relative abundance in a given sample.

Note: Dashes (--) indicate data not available because of gear malfunction.
S = surface; M = middepth; B = bottom.

APPENDIX J

ABUNDANCE OF STRIPED BASS EARLY DEVELOPMENTAL STAGES COLLECTED AT RIVER TRANSECT STATIONS, INDIAN POINT GENERATING STATION, 1978

APPENDIX J TABLES

Title	Number
J.1 ABUNDANCE OF STRIPED BASS COLLECTED AT STATION RD	J.1-1
J.2 ABUNDANCE OF STRIPED BASS COLLECTED AT STATION RC	J.2-1
J.3 ABUNDANCE OF STRIPED BASS COLLECTED AT STATION RW	J.3-1

TABLE J.1-1 ABUNDANCES OF STRIPED BAS[illegible]RLY DEVELOPMENTAL STAGES COLLECTED AT STATION RD DURING THE RIVER TRANSECT STUDY, INDIAN POINT GENERATING STATION, 1978

Date	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3)					
						Eggs	YSL	PYSL	Juv	Uid	Total[a]
4 MAY	S	1305	11.6	106	150.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		--	--	142.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		11.2	104	159.40	0.0	0.0	0.0	0.0	0.0	0.0
4 MAY	S	1504	11.1	101	111.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		--	--	111.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		10.9	100	117.90	0.0	0.0	0.0	0.0	0.0	0.0
4 MAY	S	1659	11.2	100	190.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		--	--	168.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		10.7	99	194.20	0.0	0.0	0.0	0.0	0.0	0.0
4 MAY	S	1900	11.4	99	119.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		--	--	103.40	0.0	0.0	0.0	0.0	0.0	0.0
	B		10.6	141	111.00	0.0	0.0	0.0	0.0	0.0	0.0
4 MAY	S	2102	10.7	99	266.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	B		10.9	99	250.00	0.0	0.0	0.0	0.0	0.0	0.0
4 MAY	S	2302	12.4	121	108.30	0.0	0.0	0.0	0.0	0.0	0.0
	M		(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	B		11.4	118	189.10	0.0	0.0	0.0	0.0	0.0	0.0
5 MAY	S	0101	11.3	118	155.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	B		11.2	117	146.90	0.0	0.0	0.0	0.0	0.0	0.0
11 MAY	S	1400	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	M		12.0	103	150.30	0.0	0.0	0.0	0.0	0.0	0.0
	B		11.7	101	163.10	6.1	0.0	0.0	0.0	0.0	0.0
11 MAY	S	1600	12.9	103	145.50	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.1	103	111.10	0.0	0.0	0.0	0.0	0.0	0.0
	B		12.0	105	164.50	0.0	0.0	0.0	0.0	0.0	0.0
11 MAY	S	1800	13.7	108	152.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.0	102	158.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		11.8	102	170.80	0.0	0.0	0.0	0.0	0.0	0.0
11 MAY	S	2000	12.2	107	147.30	0.0	0.0	0.0	0.0	0.0	0.0
	M		(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	B		11.9	106	161.90	0.0	0.0	0.0	0.0	0.0	0.0

TABLE J.1-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[a]
11 MAY	S	2200	12.0	109	107.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		11.9	108	97.40	0.0	0.0	0.0	0.0	0.0	0.0
	B		11.9	136	131.50	0.0	0.0	0.0	0.0	0.0	0.0
12 MAY	S	0000	13.4	114	141.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.0	109	107.50	0.0	0.0	0.0	0.0	0.0	0.0
	B		11.9	109	148.50	0.0	0.0	0.0	0.0	0.0	0.0
12 MAY	S	0200	12.1	111	149.10	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.1	111	113.70	0.0	0.0	0.0	0.0	0.0	0.0
	B		12.2	109	163.60	0.0	0.0	0.0	0.0	0.0	0.0
18 MAY	S	1407	12.9	210	167.80	11.9	6.0	0.0	0.0	0.0	6.0
	M		12.8	260	132.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		12.8	475	162.90	18.4	0.0	0.0	0.0	0.0	0.0
18 MAY	S	1605	13.2	107	160.30	25.0	0.0	0.0	0.0	0.0	0.0
	M		12.9	105	130.60	7.7	0.0	0.0	0.0	0.0	0.0
	B		12.9	110	164.50	0.0	0.0	0.0	0.0	0.0	0.0
18 MAY	S	1802	13.2	105	203.50	19.7	0.0	0.0	0.0	0.0	0.0
	M		12.7	104	151.30	0.0	0.0	0.0	0.0	0.0	0.0
	B		12.9	107	225.80	0.0	0.0	0.0	0.0	0.0	0.0
18 MAY	S	2026	12.9	181	169.10	23.6	0.0	0.0	0.0	0.0	0.0
	M		12.9	233	151.30	39.7	0.0	0.0	0.0	0.0	0.0
	B		12.8	109	166.60	12.0	6.0	0.0	0.0	0.0	6.0
18 MAY	S	2244	13.8	409	162.60	6.2	0.0	0.0	0.0	0.0	0.0
	M		13.0	720	108.70	0.0	0.0	0.0	0.0	0.0	0.0
	B		12.8	1,727	188.80	10.6	0.0	0.0	0.0	0.0	0.0
19 MAY	S	0024	13.0	525	187.30	0.0	5.3	0.0	0.0	0.0	5.3
	M		13.0	871	136.30	0.0	0.0	0.0	0.0	0.0	0.0
	B		13.0	865	164.60	0.0	24.3	0.0	0.0	0.0	24.3
19 MAY	S	0223	12.9	323	175.30	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.8	501	129.10	0.0	0.0	0.0	0.0	0.0	0.0
	B		12.8	659	168.00	6.0	0.0	0.0	0.0	0.0	0.0
25 MAY	S	1405	15.8	--	153.30	221.7	32.6	0.0	0.0	0.0	32.6
	M		15.6	--	147.40	956.6	47.5	0.0	0.0	0.0	47.5
	B		15.6	--	181.70	704.4	132.1	0.0	0.0	0.0	132.1

TABLE J. (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[a]
25 MAY	S	1625	15.9	--	204.80	4.9	0.0	0.0	0.0	0.0	0.0
	M		15.9	--	168.30	0.0	0.0	0.0	0.0	0.0	0.0
	B		16.1	--	203.80	19.6	122.6	0.0	0.0	0.0	122.6
25 MAY	S	1800	16.0	--	162.70	0.0	12.3	0.0	0.0	0.0	12.3
	M		15.7	--	155.10	0.0	19.3	0.0	0.0	0.0	19.3
	B		15.8	--	169.10	11.8	53.2	0.0	0.0	0.0	53.2
25 MAY	S	2005	15.5	--	179.10	39.1	0.0	0.0	0.0	0.0	0.0
	M		15.5	--	167.10	6.0	6.0	0.0	0.0	0.0	6.0
	B		15.2	--	175.70	34.2	0.0	0.0	0.0	0.0	0.0
25 MAY	S	2158	15.3	--	141.10	7.1	0.0	0.0	0.0	0.0	0.0
	M		15.4	--	124.60	0.0	0.0	0.0	0.0	0.0	0.0
	B		15.5	--	142.10	63.3	28.1	0.0	0.0	0.0	28.1
25 MAY	S	2359	15.5	--	192.40	285.8	15.6	0.0	0.0	0.0	15.6
	M		15.4	--	167.10	29.9	29.9	0.0	0.0	0.0	29.9
	B		15.4	--	158.20	50.6	25.3	0.0	0.0	0.0	25.3
26 MAY	S	0159	15.9	--	160.70	728.3	49.8	0.0	0.0	0.0	49.8
	M		15.8	--	154.70	180.9	96.9	0.0	0.0	0.0	96.9
	B		15.8	--	159.70	262.9	194.1	0.0	0.0	0.0	194.1
1 JUN	S	1425	19.7	--	187.90	0.0	0.0	0.0	0.0	0.0	0.0
	M		18.4	--	159.00	0.0	50.3	81.8	0.0	0.0	132.1
	B		18.3	--	170.50	58.7	105.6	64.5	0.0	5.9	176.0
1 JUN	S	1601	18.6	--	188.70	0.0	0.0	0.0	0.0	0.0	0.0
	M		17.9	--	164.00	0.0	24.4	48.8	0.0	0.0	73.2
	B		18.1	--	187.90	21.3	47.9	122.4	0.0	0.0	170.3
1 JUN	S	1801	21.0	--	181.40	27.6	16.5	0.0	0.0	0.0	16.5
	M		18.3	--	146.80	13.6	95.4	88.5	0.0	0.0	183.9
	B		18.0	--	178.00	0.0	11.2	0.0	0.0	5.6	16.8
1 JUN	S	2000	19.6	--	189.50	195.2	10.6	0.0	0.0	0.0	10.6
	M		19.3	--	176.10	51.1	85.2	34.1	0.0	0.0	119.3
	B		18.9	--	181.30	11.0	0.0	0.0	0.0	0.0	0.0
1 JUN	S	2200	21.0	--	173.30	23.1	28.8	40.4	0.0	5.8	75.0
	M		20.0	--	133.70	0.0	0.0	15.0	0.0	0.0	15.0
	B		19.6	--	160.80	56.0	18.7	62.2	0.0	12.4	93.3

TABLE J.1-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[a]
2 JUN	S	0019	19.8	--	162.90	0.0	12.3	0.0	0.0	0.0	12.3
	M		19.2	--	140.90	0.0	14.2	14.2	0.0	0.0	28.4
	B		18.9	--	209.40	0.0	23.9	9.5	0.0	0.0	33.4
2 JUN	S	0200	19.4	--	175.20	0.0	22.8	11.4	0.0	0.0	34.2
	M		19.4	--	137.70	0.0	14.5	0.0	0.0	14.5	29.0
	B		19.4	--	213.80	14.0	28.1	18.7	0.0	9.4	56.2
8 JUN	S	1405	21.0	187	154.20	0.0	0.0	6.5	0.0	0.0	6.5
	M		21.0	173	136.40	0.0	73.3	286.0	0.0	0.0	359.3
	B		22.0	164	155.60	0.0	122.1	135.0	0.0	0.0	257.1
8 JUN	S	1600	22.2	180	168.80	0.0	5.9	5.9	0.0	0.0	11.8
	M		22.1	184	152.50	0.0	78.7	288.5	0.0	0.0	367.2
	B		21.4	186	166.60	0.0	48.0	612.1	0.0	0.0	660.1
8 JUN	S	1800	23.6	172	174.50	0.0	0.0	0.0	0.0	0.0	0.0
	M		21.2	170	150.30	0.0	139.7	172.9	0.0	0.0	312.6
	B		20.8	169	158.40	0.0	296.7	782.9	0.0	0.0	1,079.6
8 JUN	S	2000	21.5	174	190.60	0.0	5.2	5.2	0.0	0.0	10.4
	M		20.5	174	170.40	0.0	1,050.6	874.5	0.0	0.0	1,925.1
	B		20.4	176	172.40	5.8	237.8	580.0	0.0	0.0	817.8
8 JUN	S	2202	22.2	181	161.20	0.0	322.5	303.9	0.0	0.0	626.4
	M		20.4	180	128.60	0.0	132.2	272.1	0.0	0.0	404.3
	B		20.2	182	179.30	16.7	396.0	278.9	0.0	0.0	674.9
9 JUN	S	0013	22.3	200	161.70	0.0	105.1	222.6	0.0	0.0	327.7
	M		20.8	200	141.70	0.0	162.4	494.1	0.0	0.0	656.5
	B		20.7	204	162.00	6.2	209.9	240.8	0.0	0.0	450.7
9 JUN	S	0201	22.0	222	175.60	0.0	142.4	176.5	0.0	0.0	318.9
	M		21.4	214	143.70	7.0	257.4	424.4	0.0	0.0	681.8
	B		21.3	212	160.40	0.0	268.1	386.5	0.0	0.0	654.6
15 JUN	S	1409	20.6	152	153.70	0.0	0.0	0.0	0.0	0.0	0.0
	M		20.7	150	179.40	0.0	33.5	490.6	0.0	0.0	524.1
	B		20.7	150	160.90	0.0	43.5	360.6	0.0	0.0	404.1
15 JUN	S	1603	22.6	153	150.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.0	153	144.40	0.0	0.0	41.6	0.0	0.0	41.6
	B		20.8	150	165.60	0.0	24.1	102.6	0.0	0.0	126.7

TABLE J. (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[a]
15 JUN	S	1800	21.1	154	167.00	0.0	6.0	125.7	0.0	0.0	131.7
	M		20.7	151	161.50	0.0	18.6	235.3	0.0	0.0	253.9
	B		20.8	151	192.90	0.0	10.4	451.1	0.0	0.0	461.5
15 JUN	S	2005	21.5	184	162.90	0.0	61.4	208.7	0.0	0.0	270.1
	M		21.3	276	143.40	0.0	20.9	41.8	0.0	0.0	62.7
	B		21.2	374	212.40	0.0	65.9	536.8	0.0	0.0	602.7
15 JUN	S	2200	21.3	360	128.90	0.0	46.6	395.8	0.0	0.0	442.4
	M		21.1	395	123.80	0.0	16.2	436.2	0.0	0.0	452.4
	B		20.8	780	161.40	0.0	24.8	396.4	0.0	0.0	421.2
16 JUN	S	0000	20.8	337	154.60	0.0	103.5	1,532.6	0.0	0.0	1,636.1
	M		20.6	363	139.60	0.0	100.3	1,010.1	0.0	0.0	1,110.4
	B		20.5	361	159.60	0.0	6.3	357.2	0.0	0.0	363.5
16 JUN	S	0200	20.4	157	157.40	0.0	0.0	514.7	0.0	0.0	514.7
	M		20.4	158	163.60	0.0	0.0	1,021.0	0.0	0.0	1,021.0
	B		20.3	167	175.90	0.0	0.0	835.8	0.0	0.0	835.8
22 JUN	S	1407	23.6	810	202.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	B		22.6	1,200	223.20	0.0	0.0	371.9	0.0	0.0	371.9
22 JUN	S	1604	23.1	1,130	190.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.8	1,270	209.60	0.0	0.0	2,471.0	0.0	0.0	2,471.0
	B		22.8	1,310	113.80	0.0	35.2	2,645.3	0.0	0.0	2,680.5
22 JUN	S	1800	22.3	710	198.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.3	730	170.70	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.5	750	191.50	0.0	0.0	151.4	0.0	0.0	151.4
22 JUN	S	2000	22.1	420	194.60	0.0	0.0	0.0	0.0	0.0	0.0
	M		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	B		22.2	420	213.50	0.0	0.0	164.0	4.7	0.0	168.7
22 JUN	S	2200	22.3	400	171.50	0.0	0.0	58.3	0.0	0.0	58.3
	M		22.0	400	180.40	0.0	0.0	149.7	0.0	0.0	149.7
	B		22.0	400	210.80	0.0	0.0	104.3	0.0	0.0	104.3
23 JUN	S	0000	22.1	640	182.10	0.0	0.0	131.8	0.0	0.0	131.8
	M		22.1	650	172.00	0.0	0.0	34.9	0.0	0.0	34.9
	B		22.1	660	216.60	0.0	0.0	355.5	0.0	0.0	355.5

TABLE J.1-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[a]
23 JUN	S	0200	23.1	1,230	171.70	0.0	0.0	46.6	0.0	0.0	46.6
	M		23.1	1,240	151.50	0.0	0.0	52.8	6.6	0.0	59.4
	B		22.7	1,260	202.50	0.0	0.0	602.4	0.0	0.0	602.4
29 JUN	S	1400	23.5	290	173.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.3	280	128.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		23.5	290	179.10	0.0	0.0	22.3	0.0	0.0	22.3
29 JUN	S	1600	26.0	2,800	153.70	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.3	2,800	126.40	0.0	0.0	15.8	0.0	0.0	15.8
	B		23.4	2,800	166.40	0.0	0.0	36.1	0.0	0.0	36.1
29 JUN	S	1803	24.0	3,500	154.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.6	3,300	118.40	0.0	0.0	8.4	0.0	0.0	8.4
	B		23.6	3,200	174.10	0.0	0.0	23.0	0.0	0.0	23.0
29 JUN	S	2000	25.1	650	190.50	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.8	840	130.30	0.0	0.0	23.0	0.0	0.0	23.0
	B		24.5	900	173.70	0.0	0.0	17.3	0.0	0.0	17.3
29 JUN	S	2200	24.1	430	168.50	0.0	0.0	17.8	0.0	0.0	17.8
	M		24.5	920	124.70	0.0	0.0	32.1	0.0	0.0	32.1
	B		24.3	1,210	144.10	0.0	0.0	27.8	0.0	0.0	27.8
30 JUN	S	0000	24.5	850	176.40	0.0	0.0	5.7	0.0	0.0	5.7
	M		24.4	770	131.70	0.0	0.0	7.6	0.0	0.0	7.6
	B		24.3	850	150.90	0.0	0.0	39.8	0.0	0.0	39.8
30 JUN	S	0200	23.6	400	206.40	0.0	0.0	9.7	0.0	0.0	9.7
	M		23.6	410	138.70	0.0	0.0	36.1	0.0	0.0	36.1
	B		23.6	400	130.80	0.0	0.0	45.9	0.0	0.0	45.9
5 JUL	S	1408	23.7	283	154.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.6	372	112.10	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.4	430	137.40	0.0	0.0	0.0	0.0	0.0	0.0
5 JUL	S	1605	23.4	283	179.60	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.1	372	159.10	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.8	430	128.00	0.0	0.0	0.0	0.0	0.0	0.0
5 JUL	S	1810	23.1	280	177.90	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.8	318	204.10	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.8	356	119.40	0.0	0.0	8.4	0.0	0.0	8.4

TABLE J. (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[a]
5 JUL	S	2000	23.0	200	137.30	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.0	283	106.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.8	338	192.10	0.0	0.0	5.2	0.0	0.0	5.2
5 JUL	S	2215	22.8	263	174.40	0.0	0.0	5.7	0.0	0.0	5.7
	M		22.8	290	143.90	0.0	0.0	6.9	0.0	0.0	6.9
	B		22.5	351	197.60	0.0	0.0	5.1	0.0	0.0	5.1
6 JUL	S	0005	23.8	308	167.30	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.9	326	140.40	0.0	0.0	0.0	0.0	0.0	0.0
	B		27.7	329	169.80	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	S	0200	22.7	346	143.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.5	423	122.50	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.2	474	161.40	0.0	0.0	0.0	0.0	0.0	0.0
13 JUL	S	1415	25.1	2,720	191.90	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.9	2,660	126.80	0.0	0.0	0.0	0.0	0.0	0.0
	B		23.9	3,140	145.90	0.0	0.0	0.0	0.0	0.0	0.0
13 JUL	S	1612	24.6	3,140	159.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.4	3,420	118.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.3	3,410	156.00	0.0	0.0	0.0	0.0	0.0	0.0
13 JUL	S	1800	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	M		24.8	3,620	129.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.8	3,660	123.10	0.0	0.0	0.0	0.0	0.0	0.0
13 JUL	S	2003	24.6	3,610	173.10	0.0	0.0	0.0	0.0	0.0	0.0
	M		25.2	3,620	131.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.8	3,660	134.30	0.0	0.0	14.9	0.0	0.0	14.9
13 JUL	S	2200	24.7	3,950	178.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.5	4,380	141.70	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.5	4,510	137.50	0.0	0.0	0.0	0.0	0.0	0.0
14 JUL	S	0030	24.1	3,620	189.10	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.1	3,680	171.80	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.1	3,750	185.00	0.0	0.0	0.0	0.0	0.0	0.0
14 JUL	S	0200	24.0	3,330	187.60	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.1	3,560	149.10	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.2	3,890	208.50	0.0	0.0	0.0	9.6	0.0	9.6

TABLE J.1-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[a]
17 JUL	S	1400	24.4	3,058	195.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.4	3,063	151.80	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.4	4,050	136.50	0.0	0.0	0.0	0.0	0.0	0.0
17 JUL	S	1600	24.1	3,090	187.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.1	3,063	136.10	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.2	4,050	164.30	0.0	0.0	0.0	0.0	0.0	0.0
17 JUL	S	1800	25.4	3,100	172.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.0	3,020	157.40	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.1	3,180	170.20	0.0	0.0	0.0	0.0	0.0	0.0
17 JUL	S	2000	25.8	3,620	195.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.4	3,570	132.60	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.4	3,580	166.60	0.0	0.0	0.0	0.0	0.0	0.0
17 JUL	S	2203	25.3	4,560	144.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.8	4,720	118.30	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.0	5,550	165.40	0.0	0.0	6.0	0.0	0.0	6.0
18 JUL	S	0030	24.1	3,490	182.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.2	5,090	132.10	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.0	5,210	163.10	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	S	0157	24.2	3,990	204.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.3	4,360	147.70	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.3	4,610	135.40	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	1403	26.2	3,120	165.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		26.2	3,200	144.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		26.2	3,330	182.30	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	1600	28.0	3,950	177.60	0.0	0.0	0.0	0.0	0.0	0.0
	M		27.8	3,910	148.60	0.0	0.0	0.0	0.0	0.0	0.0
	B		27.4	3,910	208.70	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	1800	26.5	3,510	177.50	0.0	0.0	0.0	0.0	0.0	0.0
	M		26.8	4,050	124.70	0.0	0.0	0.0	0.0	0.0	0.0
	B		26.8	4,080	141.30	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	2001	26.5	3,470	188.70	0.0	0.0	0.0	0.0	0.0	0.0
	M		26.6	3,830	158.50	0.0	0.0	0.0	0.0	0.0	0.0
	B		26.7	3,910	156.00	0.0	0.0	0.0	0.0	0.0	0.0

TABLE J. (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3)					
						Eggs	YSL	PYSL	Juv	Uid	Total[a]
24 JUL	S	2200	26.0	3,060	203.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		26.1	3,170	152.80	0.0	0.0	0.0	0.0	0.0	0.0
	B		26.0	3,210	188.70	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	S	0001	27.6	2,640	154.10	0.0	0.0	0.0	0.0	0.0	0.0
	M		26.4	2,620	121.50	0.0	0.0	0.0	0.0	0.0	0.0
	B		25.9	2,810	180.10	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	S	0155	26.9	2,850	201.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		26.2	3,230	140.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		26.1	3,250	201.50	0.0	0.0	0.0	0.0	0.0	0.0

(a) Total of all striped bass collected excluding eggs.
(b) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.3.2).
(c) No valid sample collected.

Note: Dashes (--) indicate data not available because of equipment malfunction.
S = surface; M = middepth; B = bottom.
YSL = yolk-sac larvae; PYSL = post yolk-sac larvae; Juv = juveniles; Uid = unidentified life stage.

TABLE J.2-1 ABUNDANCES OF STRIPED BASS EARLY DEVELOPMENTAL STAGES COLLECTED AT STATION RC DURING THE RIVER TRANSECT STUDY, INDIAN POINT GENERATING STATION, 1978

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[a]
4 MAY	S	1300	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	M		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	B		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
4 MAY	S	1502	11.1	101	120.70	0.0	0.0	0.0	0.0	0.0	0.0
	M		--	--	106.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		10.9	1,000	107.90	0.0	0.0	0.0	0.0	0.0	0.0
4 MAY	S	1659	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	M		--	--	164.30	0.0	0.0	0.0	0.0	0.0	0.0
	B		10.7	99	163.40	0.0	0.0	0.0	0.0	0.0	0.0
4 MAY	S	1900	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	M		--	--	140.30	0.0	0.0	0.0	0.0	0.0	0.0
	B		10.6	141	162.10	0.0	0.0	0.0	0.0	0.0	0.0
4 MAY	S	2101	10.7	99	201.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		--	--	184.30	0.0	0.0	0.0	0.0	0.0	0.0
	B		(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
4 MAY	S	2301	12.4	121	177.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		--	--	140.10	0.0	0.0	0.0	0.0	0.0	0.0
	B		11.4	118	170.70	0.0	0.0	0.0	0.0	0.0	0.0
5 MAY	S	0100	11.3	118	194.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	B		11.4	117	170.50	0.0	0.0	0.0	0.0	0.0	0.0
11 MAY	S	1400	12.6	105	148.70	0.0	0.0	0.0	0.0	0.0	0.0
	M		(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	B		11.7	101	185.40	0.0	0.0	0.0	0.0	0.0	0.0
11 MAY	S	1600	12.9	103	134.90	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.1	1,030	119.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		12.0	105	119.10	0.0	0.0	0.0	0.0	0.0	0.0
11 MAY	S	1801	13.7	108	160.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.0	102	154.30	0.0	0.0	0.0	0.0	0.0	0.0
	B		11.8	102	163.40	0.0	0.0	0.0	0.0	0.0	0.0
11 MAY	S	2002	12.2	107	188.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		11.9	103	176.60	0.0	0.0	0.0	0.0	0.0	0.0
	B		11.9	106	179.50	0.0	0.0	0.0	0.0	0.0	0.0

TABLE J. (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[a]
11 MAY	S	2201	12.0	109	158.50	0.0	0.0	0.0	0.0	0.0	0.0
	M		11.9	108	172.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		11.9	136	212.10	0.0	0.0	0.0	0.0	0.0	0.0
12 MAY	S	0000	13.4	114	158.90	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.0	109	145.60	0.0	0.0	0.0	0.0	0.0	0.0
	B		11.9	109	171.70	0.0	0.0	0.0	0.0	0.0	0.0
12 MAY	S	0201	12.1	111	175.50	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.1	111	164.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		12.2	109	181.30	0.0	0.0	0.0	0.0	0.0	0.0
18 MAY	S	1403	12.9	210	162.10	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.8	260	150.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		12.8	475	138.40	158.9	0.0	0.0	0.0	0.0	0.0
18 MAY	S	1600	13.2	107	172.50	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.9	105	151.30	6.6	0.0	0.0	0.0	0.0	0.0
	B		12.9	110	160.80	93.3	0.0	0.0	0.0	0.0	0.0
18 MAY	S	1759	13.2	105	208.30	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.7	104	156.40	0.0	0.0	0.0	0.0	0.0	0.0
	B		12.9	107	182.40	153.5	0.0	0.0	0.0	0.0	0.0
18 MAY	S	2002	12.9	181	163.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.9	233	145.50	0.0	6.9	0.0	0.0	0.0	6.9
	B		12.8	109	153.40	13.0	6.5	0.0	0.0	0.0	6.5
18 MAY	S	2225	13.8	409	164.20	0.0	6.1	0.0	0.0	0.0	6.1
	M		13.0	7,200	143.70	0.0	0.0	0.0	0.0	0.0	0.0
	B		12.8	1,727	169.10	0.0	17.7	0.0	0.0	0.0	17.7
19 MAY	S	0000	13.0	525	181.30	0.0	0.0	0.0	0.0	0.0	0.0
	M		13.0	871	146.70	0.0	0.0	0.0	0.0	0.0	0.0
	B		13.0	865	158.10	0.0	0.0	0.0	0.0	0.0	0.0
19 MAY	S	0200	12.9	323	180.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.8	501	148.70	0.0	0.0	0.0	0.0	0.0	0.0
	B		12.8	659	141.60	0.0	21.2	0.0	0.0	0.0	21.2
25 MAY	S	1408	15.8	--	203.10	0.0	0.0	0.0	0.0	0.0	0.0
	M		15.6	--	160.20	6.2	0.0	0.0	0.0	0.0	0.0
	B		15.6	--	173.20	906.6	155.9	0.0	0.0	0.0	155.9

TABLE J.2-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[a]
25 MAY	S	1600	15.9	--	183.60	0.0	0.0	0.0	0.0	0.0	0.0
	M		15.9	--	133.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		16.1	--	158.10	94.9	164.5	0.0	0.0	0.0	164.5
25 MAY	S	1801	16.0	--	152.90	0.0	0.0	0.0	0.0	0.0	0.0
	M		15.7	--	114.70	0.0	17.4	0.0	0.0	0.0	17.4
	B		15.8	--	175.00	74.3	40.0	0.0	0.0	0.0	40.0
25 MAY	S	2005	15.5	--	195.40	5.1	0.0	0.0	0.0	0.0	0.0
	M		15.5	--	140.40	163.8	35.6	0.0	0.0	0.0	35.6
	B		15.5	--	142.50	820.8	161.4	0.0	0.0	0.0	161.4
25 MAY	S	2158	15.3	--	184.60	5.4	5.4	0.0	0.0	0.0	5.4
	M		--	--	138.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		15.5	--	157.70	114.1	31.7	63.4	0.0	0.0	95.1
25 MAY	S	2358	15.5	--	235.40	4.2	8.5	0.0	0.0	0.0	8.5
	M		15.4	--	138.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		15.4	--	158.70	6.3	12.6	0.0	0.0	0.0	12.6
26 MAY	S	0201	15.9	--	200.60	5.0	24.9	0.0	0.0	0.0	24.9
	M		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	B		15.8	--	169.70	11.8	41.2	0.0	0.0	0.0	41.2
1 JUN	S	1406	19.7	--	160.60	0.0	0.0	0.0	0.0	0.0	0.0
	M		18.4	--	138.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		18.3	--	137.10	255.4	58.4	36.5	0.0	14.6	109.5
1 JUN	S	1601	18.6	--	167.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		17.9	--	145.40	34.4	48.1	61.9	0.0	0.0	110.0
	B		18.1	--	152.10	644.4	907.4	59.2	0.0	0.0	966.6
1 JUN	S	1802	21.0	--	175.10	5.7	5.7	0.0	0.0	0.0	5.7
	M		18.3	--	139.40	7.2	0.0	50.2	0.0	7.2	57.4
	B		18.0	--	154.60	381.5	872.9	161.7	0.0	0.0	1,034.6
1 JUN	S	2001	19.6	--	160.90	0.0	0.0	0.0	0.0	0.0	0.0
	M		19.3	--	153.40	0.0	78.2	71.7	0.0	0.0	149.9
	B		18.9	--	166.70	0.0	36.0	114.0	0.0	0.0	150.0
1 JUN	S	2201	21.0	--	154.30	0.0	19.4	51.8	0.0	0.0	71.2
	M		20.1	--	143.40	0.0	0.0	20.9	0.0	0.0	20.9
	B		19.6	--	166.90	12.0	53.9	18.0	0.0	0.0	71.9

TABLE J. (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[a]
2 JUN	S	0017	19.8	--	178.60	5.6	22.4	0.0	0.0	0.0	22.4
	M		19.2	--	186.40	0.0	37.6	10.7	0.0	0.0	48.3
	B		18.9	--	166.90	215.7	65.9	30.0	0.0	0.0	95.9
2 JUN	S	0158	19.4	--	152.50	0.0	13.1	6.6	0.0	0.0	19.7
	M		19.4	--	130.00	0.0	53.9	30.8	0.0	7.7	92.4
	B		19.4	--	146.50	61.5	109.2	6.8	0.0	0.0	116.0
8 JUN	S	1403	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	M		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	B		22.0	164	203.00	0.0	704.4	1,482.7	0.0	0.0	2,187.1
8 JUN	S	1557	22.2	180	179.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		21.6	184	122.20	0.0	0.0	73.6	0.0	0.0	73.6
	B		21.4	186	135.40	0.0	620.4	797.6	0.0	0.0	1,418.0
8 JUN	S	1758	23.6	172	157.50	0.0	0.0	0.0	0.0	0.0	0.0
	M		21.2	170	103.00	0.0	9.7	106.8	0.0	0.0	116.5
	B		20.8	169	139.90	0.0	521.8	521.8	0.0	0.0	1,043.6
8 JUN	S	1959	21.5	174	175.40	0.0	11.4	5.7	0.0	0.0	17.1
	M		20.5	174	114.3	0.0	96.3	227.6	0.0	0.0	323.9
	B		20.4	176	167.40	6.0	776.6	370.4	0.0	0.0	1,147.0
8 JUN	S	2159	22.2	181	181.70	0.0	368.8	236.7	0.0	0.0	605.5
	M		20.4	180	107.70	0.0	92.8	74.3	0.0	0.0	167.1
	B		20.2	182	153.80	0.0	526.8	260.1	0.0	0.0	786.9
9 JUN	S	0011	22.3	200	193.10	0.0	62.1	129.5	0.0	0.0	191.6
	M		20.8	200	119.40	0.0	0.0	92.1	0.0	0.0	92.1
	B		20.7	204	146.40	6.8	375.6	198.0	0.0	0.0	573.6
9 JUN	S	0158	22.0	222	202.70	0.0	113.5	123.3	0.0	0.0	236.8
	M		21.4	214	139.50	5.0	602.2	673.9	0.0	0.0	1,276.1
	B		21.3	212	168.50	0.0	415.4	255.2	0.0	0.0	670.6
15 JUN	S	1407	20.6	152	192.20	0.0	5.2	5.2	0.0	0.0	10.4
	M		20.6	150	149.30	0.0	0.0	33.5	0.0	0.0	33.5
	B		20.7	150	202.30	0.0	24.7	1,631.1	0.0	0.0	1,655.8
15 JUN	S	1603	22.6	153	187.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.0	153	151.80	0.0	0.0	171.3	0.0	0.0	171.3
	B		20.8	150	197.80	0.0	40.4	1,961.1	0.0	0.0	2,001.5

TABLE J.2-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (μmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[a]
15 JUN	S	1845	21.1	154	174.30	0.0	0.0	0.0	0.0	0.0	0.0
	M		20.7	151	171.10	0.0	0.0	5.8	0.0	0.0	5.8
	B		20.8	151	193.00	0.0	25.9	310.9	0.0	0.0	336.8
15 JUN	S	2002	21.5	184	186.60	0.0	0.0	10.7	0.0	0.0	10.7
	M		21.3	276	160.80	0.0	0.0	49.7	0.0	0.0	49.7
	B		21.2	379	186.20	0.0	5.4	1,938.9	0.0	0.0	1,944.3
15 JUN	S	2159	21.3	360	162.00	0.0	6.2	111.1	0.0	0.0	117.3
	M		21.1	395	134.20	0.0	22.3	588.5	0.0	0.0	610.8
	B		20.8	780	170.30	0.0	0.0	522.5	0.0	0.0	522.5
16 JUN	S	0000	20.8	337	179.00	0.0	5.6	770.8	0.0	0.0	776.4
	M		20.6	363	156.30	0.0	6.4	537.6	0.0	0.0	544.0
	B		20.5	361	185.10	0.0	10.8	1,550.3	0.0	0.0	1,561.1
16 JUN	S	0200	20.4	157	200.10	0.0	5.0	429.8	0.0	0.0	434.8
	M		20.4	158	163.40	0.0	6.1	269.3	0.0	0.0	275.4
	B		20.3	167	200.40	0.0	5.0	259.5	0.0	0.0	264.5
22 JUN	S	1408	23.6	810	147.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.1	1,100	87.40	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.6	1,200	159.10	0.0	0.0	56.6	0.0	0.0	56.6
22 JUN	S	1603	23.1	1,130	166.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.8	1,270	125.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.8	1,310	160.20	0.0	0.0	349.5	0.0	0.0	349.5
22 JUN	S	1801	22.3	710	175.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.3	730	157.40	0.0	0.0	114.4	0.0	0.0	114.4
	B		22.5	750	196.40	0.0	0.0	295.4	0.0	0.0	295.4
22 JUN	S	1959	22.1	420	208.50	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.1	420	112.10	0.0	0.0	526.4	0.0	0.0	526.4
	B		22.2	420	190.40	0.0	0.0	509.4	0.0	0.0	509.4
22 JUN	S	2202	22.3	400	216.00	0.0	0.0	162.1	0.0	0.0	162.1
	M		22.0	400	154.30	0.0	0.0	291.7	0.0	0.0	291.7
	B		22.0	400	202.30	0.0	0.0	697.1	0.0	0.0	697.1
23 JUN	S	0000	22.1	640	212.80	0.0	0.0	23.5	0.0	0.0	23.5
	M		22.1	650	152.30	0.0	0.0	19.7	0.0	0.0	19.7
	B		22.1	660	218.20	0.0	0.0	307.0	0.0	0.0	307.0

TABLE J (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[a]
23 JUN	S	0157	23.1	1,230	202.80	0.0	0.0	24.7	0.0	0.0	24.7
	M		23.1	1,240	152.90	0.0	0.0	13.1	0.0	0.0	13.1
	B		22.7	1,260	193.50	0.0	0.0	237.8	0.0	0.0	237.8
29 JUN	S	1404	23.5	2,900	157.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.3	2,800	120.10	0.0	0.0	8.3	0.0	0.0	8.3
	B		23.5	2,900	146.20	0.0	0.0	20.5	0.0	0.0	20.5
29 JUN	S	1600	26.0	2,900	181.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.3	2,800	142.60	0.0	0.0	28.1	0.0	0.0	28.1
	B		23.4	2,800	170.60	0.0	0.0	23.4	0.0	0.0	23.4
29 JUN	S	1805	24.0	3,500	164.10	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.6	3,300	125.10	0.0	0.0	0.0	0.0	0.0	0.0
	B		23.6	3,200	153.50	0.0	0.0	0.0	0.0	0.0	0.0
29 JUN	S	1958	25.1	650	175.10	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.8	840	148.80	0.0	0.0	6.7	0.0	0.0	6.7
	B		24.5	900	198.50	0.0	0.0	5.0	0.0	0.0	5.0
29 JUN	S	2203	24.1	430	143.80	0.0	0.0	13.9	0.0	0.0	13.9
	M		24.5	420	102.50	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.3	1,210	165.40	0.0	0.0	18.1	0.0	0.0	18.1
30 JUN	S	0001	24.5	850	158.10	0.0	0.0	44.3	0.0	0.0	44.3
	M		24.4	770	136.40	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.3	850	146.20	0.0	0.0	41.0	0.0	0.0	41.0
30 JUN	S	0159	23.6	400	173.00	0.0	0.0	34.7	0.0	0.0	34.7
	M		23.6	410	137.30	0.0	0.0	0.0	0.0	0.0	0.0
	B		23.6	400	155.70	0.0	0.0	64.2	0.0	0.0	64.2
5 JUL	S	1421	23.7	283	181.30	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.6	372	109.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.4	430	162.50	0.0	0.0	0.0	0.0	0.0	0.0
5 JUL	S	1559	23.4	283	195.60	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.1	355	140.80	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.8	440	136.00	0.0	0.0	0.0	0.0	0.0	0.0
5 JUL	S	1809	23.1	280	196.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.8	318	138.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.8	356	154.10	0.0	0.0	13.0	0.0	0.0	13.0

TABLE J.2-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3)					
						Eggs	YSL	PYSL	Juv	Uid	Total[a]
5 JUL	S	1957	23.0	200	185.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.0	283	147.00	0.0	0.0	6.8	0.0	0.0	6.8
	B		22.8	338	181.90	0.0	0.0	38.5	0.0	0.0	38.5
5 JUL	S	2203	22.8	263	230.10	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.8	290	166.60	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.5	351	211.30	0.0	0.0	14.2	0.0	0.0	14.2
6 JUL	S	0001	23.8	308	196.10	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.9	326	129.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.7	329	175.10	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	S	0158	22.7	346	235.90	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.5	423	123.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.2	474	163.30	0.0	0.0	0.0	0.0	0.0	0.0
13 JUL	S	1356	25.1	2,720	187.90	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.9	2,660	128.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		23.9	3,140	170.50	0.0	0.0	0.0	0.0	0.0	0.0
13 JUL	S	1609	24.6	3,140	181.90	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.4	3,420	122.50	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.3	3,410	168.80	0.0	0.0	11.8	0.0	0.0	11.8
13 JUL	S	1757	25.1	3,610	188.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.8	3,620	135.10	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.8	3,660	163.40	0.0	0.0	0.0	0.0	0.0	0.0
13 JUL	S	2001	24.6	3,370	188.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		25.2	3,620	128.40	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.8	3,660	152.20	0.0	0.0	0.0	0.0	0.0	0.0
13 JUL	S	2158	24.7	3,950	198.90	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.5	4,380	145.10	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.5	4,510	172.00	0.0	0.0	0.0	0.0	0.0	0.0
14 JUL	S	0027	24.1	3,620	263.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.1	3,680	159.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.1	3,750	186.80	0.0	0.0	0.0	0.0	0.0	0.0
14 JUL	S	0157	24.0	3,330	203.20	0.0	0.0	4.9	0.0	0.0	4.9
	M		24.1	3,560	115.60	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.2	3,890	155.60	0.0	0.0	0.0	0.0	0.0	0.0

TABLE J. (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[a]
17 JUL	S	1403	24.4	3,058	185.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.4	3,063	151.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.4	4,050	173.70	0.0	0.0	0.0	0.0	0.0	0.0
17 JUL	S	1558	24.1	3,050	184.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.1	3,063	139.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.2	4,050	177.00	0.0	0.0	0.0	0.0	0.0	0.0
17 JUL	S	1802	25.4	3,100	176.10	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.0	3,020	148.80	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.1	3,180	193.20	0.0	0.0	0.0	0.0	0.0	0.0
17 JUL	S	2000	25.8	3,620	207.40	0.0	0.0	4.8	0.0	0.0	4.8
	M		24.4	3,570	183.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.4	3,580	204.20	0.0	0.0	0.0	0.0	0.0	0.0
17 JUL	S	2205	25.3	4,560	171.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.8	4,720	128.10	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.0	5,550	172.50	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	S	0029	24.1	3,490	201.30	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.2	5,090	147.50	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.0	5,210	171.20	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	S	0158	24.2	3,990	200.70	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.3	4,360	154.80	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.3	4,610	158.90	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	1359	26.2	3,120	210.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		26.2	3,200	151.60	0.0	0.0	0.0	0.0	0.0	0.0
	B		26.2	3,330	200.20	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	1556	28.0	3,950	244.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		27.8	3,910	157.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		27.4	3,910	195.10	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	1801	26.5	3,510	205.50	0.0	0.0	0.0	0.0	0.0	0.0
	M		26.8	4,050	142.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		26.8	4,080	158.80	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	1959	26.5	3,470	208.60	0.0	0.0	0.0	0.0	0.0	0.0
	M		26.6	3,830	143.70	0.0	0.0	0.0	0.0	0.0	0.0
	B		26.7	3,910	162.70	0.0	0.0	0.0	0.0	0.0	0.0

TABLE J.2-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3)					
						Eggs	YSL	PYSL	Juv	Uid	Total[a]
24 JUL	S	2200	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	M		26.1	3,170	160.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		26.0	3,210	179.80	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	S	0000	27.6	2,640	241.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		26.4	2,620	128.10	0.0	0.0	0.0	0.0	0.0	0.0
	B		25.9	2,810	169.80	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	S	0200	26.9	2,850	267.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		26.2	3,230	170.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		26.1	3,250	220.20	0.0	0.0	0.0	0.0	0.0	0.0

(a) Total of all striped bass collected excluding eggs.
(b) No valid sample collected.
(c) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.3.2).

Note: Dashes (--) indicate data not available because of equipment malfunction.
S = surface; M = middepth; B = bottom.
YSL = yolk-sac larvae; PYSL = post yolk-sac larvae; JUV = juveniles; Uid = unidentified life stage.

TABLE J.3-1 ABUNDANCES OF STRIPED BASS EARLY DEVELOPMENTAL STAGES COLLECTED AT STATION RW DURING THE RIVER TRANSECT STUDY, INDIAN POINT GENERATING STATION, 1978

Date	Depth	Time	Temperature (C)	Conductivity (mho)	Sample Volume (m^3)	Density (No./1,000 m^3)					
						Eggs	YSL	PYSL	Juv	Uid	Total[a]
4 MAY	S	1300	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	M		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	B		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
4 MAY	S	1501	11.1	101	122.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		--	--	107.80	0.0	0.0	0.0	0.0	0.0	0.0
	B		10.9	100	103.10	0.0	0.0	0.0	0.0	0.0	0.0
4 MAY	S	1700	11.2	100	125.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		--	--	118.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		10.7	99	125.10	0.0	0.0	0.0	0.0	0.0	0.0
4 MAY	S	1900	11.4	99	165.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		--	--	146.40	0.0	0.0	0.0	0.0	0.0	0.0
	B		10.6	141	138.80	0.0	0.0	0.0	0.0	0.0	0.0
4 MAY	S	2100	10.7	99	161.50	0.0	0.0	0.0	0.0	0.0	0.0
	M		--	--	138.80	0.0	0.0	0.0	0.0	0.0	0.0
	B		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
4 MAY	S	2300	12.4	121	151.90	0.0	0.0	0.0	0.0	0.0	0.0
	M		--	--	184.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		11.4	118	134.80	0.0	0.0	0.0	0.0	0.0	0.0
5 MAY	S	0100	11.3	118	198.10	0.0	0.0	0.0	0.0	0.0	0.0
	M		--	--	157.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
11 MAY	S	1403	12.6	105	204.30	0.0	0.0	0.0	0.0	0.0	0.0
	M		(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	B		11.7	101	251.80	0.0	0.0	0.0	0.0	0.0	0.0
11 MAY	S	1601	12.9	--	189.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.1	103	164.00	6.1	0.0	0.0	0.0	0.0	0.0
	B		12.0	105	178.70	5.6	0.0	0.0	0.0	0.0	0.0
11 MAY	S	1800	13.7	108	165.90	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.0	102	139.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		11.8	102	175.00	0.0	0.0	0.0	0.0	0.0	0.0
11 MAY	S	2001	12.2	107	194.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		11.9	103	175.80	0.0	0.0	0.0	0.0	0.0	0.0
	B		11.9	106	164.20	0.0	0.0	0.0	0.0	0.0	0.0

TABLE J.3-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (mho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[a]
11 MAY	S	2204	12.0	109	181.70	0.0	0.0	0.0	0.0	0.0	0.0
	M		11.9	108	138.50	0.0	0.0	0.0	0.0	0.0	0.0
	B		11.9	136	158.80	0.0	0.0	0.0	0.0	0.0	0.0
12 MAY	S	0000	13.4	114	159.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.0	109	135.30	0.0	0.0	0.0	0.0	0.0	0.0
	B		11.9	109	160.00	0.0	0.0	0.0	0.0	0.0	0.0
12 MAY	S	0200	12.1	111	184.70	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.1	111	154.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		12.2	109	158.70	0.0	0.0	0.0	0.0	0.0	0.0
18 MAY	S	1407	12.9	210	212.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.8	260	194.50	0.0	0.0	0.0	0.0	0.0	0.0
	B		12.8	575	210.60	9.5	0.0	0.0	0.0	0.0	0.0
18 MAY	S	1602	13.2	107	186.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.9	105	138.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		12.9	110	139.40	0.0	0.0	0.0	0.0	0.0	0.0
18 MAY	S	1800	13.2	105	203.60	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.7	104	147.30	0.0	0.0	0.0	0.0	0.0	0.0
	B		12.9	107	191.50	94.0	20.9	0.0	0.0	0.0	20.9
18 MAY	S	2001	12.9	181	188.20	10.6	0.0	0.0	0.0	0.0	0.0
	M		12.9	233	152.80	0.0	0.0	0.0	0.0	0.0	0.0
	B		12.8	109	163.20	0.0	6.1	0.0	0.0	0.0	6.1
18 MAY	S	2226	13.8	109	163.50	0.0	6.1	0.0	0.0	0.0	6.1
	M		13.0	720	179.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		12.8	1,027	143.00	0.0	0.0	0.0	0.0	0.0	0.0
19 MAY	S	0002	13.0	525	205.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		13.0	871	183.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		13.0	865	180.90	0.0	0.0	0.0	0.0	0.0	0.0
19 MAY	S	0200	12.9	323	244.50	0.0	0.0	0.0	0.0	0.0	0.0
	M		12.8	501	178.50	0.0	0.0	0.0	0.0	0.0	0.0
	B		12.8	659	188.20	0.0	0.0	0.0	0.0	0.0	0.0
25 MAY	S	1400	15.8	--	180.30	0.0	0.0	0.0	0.0	0.0	0.0
	M		15.6	--	138.30	0.0	0.0	0.0	0.0	0.0	0.0
	B		15.6	--	148.10	47.3	27.0	0.0	0.0	0.0	27.0

TABLE J. (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (mho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[a]
25 MAY	S	1623	15.9	--	158.10	0.0	0.0	0.0	0.0	0.0	0.0
	M		15.9	--	99.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		--	--	214.80	4.7	60.5	0.0	0.0	0.0	60.5
25 MAY	S	1801	16.0	--	181.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		15.7	--	104.10	9.6	0.0	0.0	0.0	0.0	0.0
	B		15.8	--	182.00	0.0	109.9	0.0	0.0	0.0	109.9
25 MAY	S	2005	15.5	--	167.10	6.0	0.0	0.0	0.0	0.0	0.0
	M		15.5	--	121.00	74.4	0.0	0.0	0.0	0.0	0.0
	B		15.2	--	151.30	0.0	0.0	6.6	0.0	0.0	6.6
25 MAY	S	2157	15.3	--	165.40	0.0	30.2	6.0	0.0	0.0	36.2
	M		15.4	--	129.30	0.0	15.5	0.0	0.0	0.0	15.5
	B		15.5	--	179.10	11.2	33.5	0.0	0.0	0.0	33.5
26 MAY	S	0001	15.5	--	196.00	5.1	51.0	0.0	0.0	1.0	52.0
	M		15.4	--	190.30	15.8	0.0	0.0	0.0	0.0	0.0
	B		15.4	--	234.00	12.8	0.0	0.0	0.0	0.0	0.0
26 MAY	S	0200	15.9	--	203.50	0.0	9.8	4.9	0.0	0.0	14.7
	M		15.8	--	167.30	17.9	0.0	0.0	0.0	0.0	0.0
	B		15.8	--	230.00	13.0	21.7	0.0	0.0	0.0	21.7
1 JUN	S	1410	19.7	--	147.70	0.0	0.0	0.0	0.0	0.0	0.0
	M		18.4	--	99.40	120.7	130.8	40.2	0.0	0.0	171.0
	B		18.3	--	202.90	133.1	310.5	0.0	0.0	0.0	310.5
1 JUN	S	1600	19.7	--	159.40	6.3	0.0	0.0	0.0	0.0	0.0
	M		18.4	--	154.50	6.5	6.5	0.0	0.0	0.0	6.5
	B		18.3	--	194.10	92.7	103.1	0.0	0.0	0.0	103.1
1 JUN	S	1803	21.0	--	174.50	0.0	0.0	0.0	0.0	0.0	0.0
	M		18.3	--	147.40	149.2	142.5	0.0	0.0	0.0	142.5
	B		18.0	--	189.40	21.1	15.8	15.8	0.0	0.0	31.6
1 JUN	S	2003	19.6	--	206.10	4.9	4.9	0.0	0.0	0.0	4.9
	M		19.3	--	162.60	0.0	12.3	0.0	0.0	0.0	12.3
	B		18.9	--	171.50	11.7	58.3	35.0	0.0	0.0	93.3
1 JUN	S	2158	21.0	--	232.20	0.0	8.6	4.3	0.0	0.0	12.9
	M		20.1	--	150.60	0.0	59.8	112.9	0.0	0.0	172.7
	B		19.6	--	143.20	14.0	20.9	27.9	0.0	0.0	48.8

TABLE J.3-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (mho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[a]
2 JUN	S	0015	19.8	--	199.80	0.0	50.0	5.0	0.0	0.0	55.0
	M		19.2	--	128.00	0.0	31.3	62.5	0.0	0.0	93.8
	B		18.9	--	163.50	0.0	24.5	48.9	0.0	0.0	73.4
2 JUN	S	0155	19.4	--	230.90	0.0	34.6	21.7	0.0	0.0	56.3
	M		19.4	--	124.10	0.0	88.6	32.2	0.0	0.0	120.8
	B		19.4	--	150.10	0.0	119.9	53.3	0.0	0.0	173.2
8 JUN	S	1405	21.0	187	164.00	0.0	18.3	12.2	0.0	0.0	30.5
	M		21.0	173	163.30	0.0	6.1	30.6	0.0	0.0	36.7
	B		22.0	164	200.40	0.0	957.9	543.8	0.0	0.0	1,501.7
8 JUN	S	1558	22.2	180	187.80	0.0	5.3	0.0	0.0	0.0	5.3
	M		21.6	184	134.40	0.0	59.5	0.0	0.0	0.0	59.5
	B		21.4	186	190.70	0.0	183.5	445.6	0.0	0.0	629.1
8 JUN	S	1800	23.6	172	200.90	0.0	5.0	0.0	0.0	0.0	5.0
	M		21.2	170	130.10	0.0	76.9	15.4	0.0	0.0	92.3
	B		20.8	169	166.00	0.0	746.9	397.6	0.0	0.0	1,144.5
8 JUN	S	2000	21.5	174	193.50	0.0	5.2	10.3	0.0	0.0	15.5
	M		20.5	174	149.00	0.0	194.6	308.7	0.0	0.0	503.3
	B		20.4	176	183.30	5.5	1,085.5	261.8	0.0	0.0	1,347.3
8 JUN	S	2200	22.2	181	178.30	0.0	201.9	106.6	0.0	0.0	308.5
	M		20.4	180	173.30	0.0	236.6	161.6	0.0	0.0	398.2
	B		20.2	182	184.30	0.0	591.5	483.0	0.0	0.0	1,074.5
9 JUN	S	0012	22.3	200	208.00	0.0	201.9	298.1	0.0	0.0	500.0
	M		20.8	200	139.70	0.0	200.4	966.3	0.0	0.0	1,166.7
	B		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
9 JUN	S	0200	22.0	222	236.30	0.0	12.7	42.3	0.0	0.0	55.0
	M		21.4	214	161.90	0.0	24.7	389.2	0.0	0.0	413.9
	B		21.3	212	207.50	0.0	77.1	212.1	0.0	0.0	289.2
15 JUN	S	1452	20.6	152	193.90	0.0	0.0	0.0	0.0	0.0	0.0
	M		20.6	150	168.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		20.7	150	207.40	0.0	0.0	1,137.7	0.0	0.0	1,137.7
15 JUN	S	1625	22.6	153	167.40	0.0	0.0	6.0	0.0	0.0	6.0
	M		22.0	153	168.80	0.0	0.0	0.0	0.0	0.0	0.0
	B		20.8	150	190.30	0.0	215.5	704.3	0.0	0.0	919.8

TABLE J. (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (mho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[a]
15 JUN	S	1826	21.1	154	168.50	0.0	0.0	0.0	0.0	0.0	0.0
	M		20.7	151	162.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		20.8	151	170.00	0.0	41.2	582.4	0.0	0.0	623.6
15 JUN	S	2033	21.5	184	224.60	0.0	0.0	0.0	0.0	0.0	0.0
	M		21.3	276	210.10	0.0	0.0	9.5	0.0	0.0	9.5
	B		21.2	374	200.80	0.0	0.0	1,095.5	0.0	0.0	1,095.5
15 JUN	S	2220	21.3	360	146.70	0.0	0.0	729.1	0.0	0.0	729.1
	M		21.1	395	153.40	0.0	0.0	997.5	0.0	0.0	997.5
	B		20.8	780	177.20	0.0	0.0	524.9	0.0	0.0	524.9
16 JUN	S	0022	20.8	337	187.10	0.0	10.7	1,346.8	0.0	0.0	1,357.5
	M		20.6	363	170.50	0.0	5.9	961.8	0.0	0.0	967.7
	B		20.5	361	196.00	0.0	20.4	846.9	0.0	0.0	867.3
16 JUN	S	0223	20.4	157	174.00	0.0	5.7	632.1	0.0	0.0	637.8
	M		20.4	158	167.50	0.0	17.9	489.6	0.0	0.0	507.5
	B		20.3	167	199.10	0.0	50.2	311.5	0.0	0.0	361.7
22 JUN	S	1433	23.6	810	167.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.1	1,100	97.70	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.6	1,200	183.60	0.0	0.0	533.7	0.0	0.0	533.7
22 JUN	S	1601	23.1	1,130	245.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.8	1,270	179.80	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.8	1,310	212.80	0.0	0.0	32.9	0.0	0.0	32.9
22 JUN	S	1800	22.3	710	200.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.3	730	144.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.5	750	186.60	0.0	10.7	1,168.4	0.0	0.0	1,179.1
22 JUN	S	2000	22.1	420	169.50	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.1	420	179.20	0.0	16.7	429.7	0.0	0.0	446.4
	B		22.2	420	165.80	0.0	30.2	229.2	0.0	0.0	259.4
22 JUN	S	2200	22.3	400	187.90	0.0	5.3	260.7	0.0	0.0	266.0
	M		22.0	400	128.70	0.0	0.0	116.6	0.0	0.0	116.6
	B		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
23 JUN	S	0000	22.1	640	193.90	0.0	0.0	25.8	0.0	0.0	25.8
	M		22.1	650	159.70	0.0	0.0	25.1	0.0	0.0	25.1
	B		(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)

TABLE J.3-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (mho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[a]
23 JUN	S	0154	23.1	1,230	260.50	0.0	0.0	7.7	0.0	0.0	7.7
	M		(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
	B		22.7	1,260	149.40	0.0	0.0	642.5	0.0	0.0	642.5
29 JUN	S	1400	23.5	2,900	185.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.3	2,800	151.90	0.0	0.0	19.8	0.0	0.0	19.8
	B		23.5	2,900	179.40	0.0	0.0	44.6	0.0	0.0	44.6
29 JUN	S	1600	26.0	2,800	147.60	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.3	2,800	185.40	0.0	0.0	43.1	0.0	0.0	43.1
	B		23.4	2,800	135.00	0.0	14.8	37.0	0.0	0.0	51.8
29 JUN	S	1800	24.0	3,500	186.50	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.6	3,300	164.70	0.0	0.0	0.0	0.0	0.0	0.0
	B		23.6	3,200	184.00	0.0	0.0	70.6	0.0	0.0	70.6
29 JUN	S	2000	25.1	650	191.10	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.8	840	160.60	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.5	900	176.50	0.0	0.0	136.0	0.0	0.0	136.0
29 JUN	S	2200	24.1	430	156.80	0.0	0.0	19.1	0.0	0.0	19.1
	M		24.5	920	132.80	0.0	0.0	22.6	0.0	0.0	22.6
	B		24.3	1,210	222.00	0.0	0.0	18.0	0.0	0.0	18.0
30 JUN	S	0000	24.5	850	213.70	0.0	0.0	74.9	0.0	0.0	74.9
	M		24.4	770	163.90	0.0	0.0	91.5	0.0	0.0	91.5
	B		24.3	850	172.10	0.0	0.0	34.9	0.0	0.0	34.9
30 JUN	S	0200	23.6	400	213.60	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.6	410	175.50	0.0	0.0	102.6	0.0	0.0	102.6
	B		23.6	420	169.20	0.0	0.0	177.3	0.0	0.0	177.3
5 JUL	S	1425	23.7	283	221.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.6	372	172.80	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.4	430	109.60	0.0	0.0	27.4	0.0	0.0	27.4
5 JUL	S	1600	23.4	283	211.30	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.1	355	179.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.8	440	185.00	0.0	0.0	5.4	0.0	0.0	5.4
5 JUL	S	1810	23.1	280	218.60	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.8	318	176.40	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.8	356	173.60	0.0	0.0	0.0	0.0	0.0	0.0

TABLE J. (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (mho)	Sample Volume (m^3)	Density (No./1,000 m^3) Eggs	YSL	PYSL	Juv	Uid	Total[a]
5 JUL	S	2000	23.0	200	187.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.0	283	161.40	0.0	0.0	0.0	0.0	0.0	0.0
	B		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
5 JUL	S	2200	22.8	263	182.60	0.0	5.5	16.4	0.0	0.0	21.9
	M		22.8	290	174.20	0.0	0.0	5.7	0.0	0.0	5.7
	B		22.5	351	194.50	0.0	0.0	5.1	0.0	0.0	5.1
6 JUL	S	0000	23.8	308	178.10	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.9	326	153.30	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.7	329	165.70	0.0	0.0	0.0	0.0	0.0	0.0
6 JUL	S	0200	22.7	346	197.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		22.5	423	157.40	0.0	0.0	0.0	0.0	0.0	0.0
	B		22.2	474	188.80	0.0	0.0	0.0	0.0	0.0	0.0
13 JUL	S	1356	25.1	2,720	178.30	0.0	0.0	0.0	0.0	0.0	0.0
	M		23.9	2,660	152.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		23.9	3,140	184.70	0.0	0.0	0.0	0.0	0.0	0.0
13 JUL	S	1610	24.6	3,140	187.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.4	3,420	155.60	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.3	3,410	188.10	0.0	0.0	0.0	0.0	0.0	0.0
13 JUL	S	1800	25.1	3,610	208.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.8	3,620	187.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.8	3,660	190.30	0.0	0.0	0.0	0.0	0.0	0.0
13 JUL	S	2002	24.6	3,610	182.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		25.2	3,620	158.50	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.8	3,660	203.80	0.0	0.0	0.0	0.0	0.0	0.0
13 JUL	S	2200	24.7	3,950	211.70	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.5	4,380	174.70	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.5	4,510	192.80	0.0	0.0	0.0	0.0	0.0	0.0
14 JUL	S	0028	24.1	3,620	209.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.1	3,680	179.70	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.1	3,750	195.50	0.0	0.0	0.0	0.0	0.0	0.0
14 JUL	S	0200	24.0	3,330	184.70	0.0	0.0	5.4	0.0	0.0	5.4
	M		24.1	3,560	162.40	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.2	3,890	200.50	0.0	0.0	0.0	0.0	0.0	0.0

TABLE J.3-1 (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (mho)	Sample Volume (m^3)	Density (No./1,000 m^3)					
						Eggs	YSL	PYSL	Juv	Uid	Total[a]
17 JUL	S	1429	24.4	3,058	178.50	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.4	3,063	172.30	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.4	4,050	168.80	0.0	0.0	5.9	0.0	0.0	5.9
17 JUL	S	1600	24.1	3,090	197.60	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.1	3,140	162.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.2	3,160	198.90	0.0	0.0	0.0	0.0	0.0	0.0
17 JUL	S	1800	25.4	3,100	187.70	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.0	3,020	156.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.1	3,180	182.20	0.0	0.0	5.5	0.0	0.0	5.5
17 JUL	S	2000	25.8	3,620	212.00	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.4	3,570	174.10	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.4	3,580	211.90	0.0	0.0	0.0	0.0	0.0	0.0
17 JUL	S	2200	25.3	4,560	174.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.8	4,720	154.00	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.0	5,550	167.70	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	S	0031	24.1	3,490	186.70	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.2	5,090	134.10	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.0	5,210	161.80	0.0	0.0	0.0	0.0	0.0	0.0
18 JUL	S	0200	24.2	3,990	229.10	0.0	0.0	0.0	0.0	0.0	0.0
	M		24.3	4,360	170.70	0.0	0.0	0.0	0.0	0.0	0.0
	B		24.3	4,610	181.70	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	1400	26.2	3,120	191.50	0.0	0.0	0.0	0.0	0.0	0.0
	M		26.2	3,200	185.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		26.2	3,330	179.70	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	1600	28.0	3,950	197.40	0.0	0.0	0.0	0.0	0.0	0.0
	M		27.8	3,910	178.70	0.0	0.0	0.0	0.0	0.0	0.0
	B		27.4	3,910	169.30	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	1801	26.5	3,510	159.80	0.0	0.0	0.0	0.0	0.0	0.0
	M		26.8	4,030	125.20	0.0	0.0	0.0	0.0	0.0	0.0
	B		26.8	4,080	148.00	0.0	0.0	0.0	0.0	0.0	0.0
24 JUL	S	2000	26.5	3,470	183.10	0.0	0.0	0.0	0.0	0.0	0.0
	M		26.6	3,830	160.40	0.0	0.0	0.0	0.0	0.0	0.0
	B		26.7	3,910	155.40	0.0	0.0	0.0	0.0	0.0	0.0

TABLE J[illegible] (CONT.)

Date	Depth	Time	Temperature (C)	Conductivity (µmho)	Sample Volume (m^3)	Density (No./1,000 m^3)					
						Eggs	YSL	PYSL	Juv	Uid	Total[a]
24 JUL	S	2200	26.0	3,060	217.90	0.0	0.0	0.0	0.0	0.0	0.0
	M		26.4	3,170	176.40	0.0	0.0	0.0	0.0	0.0	0.0
	B		26.0	3,210	191.20	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	S	0001	27.6	2,640	192.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		26.4	2,620	177.30	0.0	0.0	0.0	0.0	0.0	0.0
	B		25.9	2,810	205.20	0.0	0.0	0.0	0.0	0.0	0.0
25 JUL	S	0153	26.9	2,850	172.20	0.0	0.0	0.0	0.0	0.0	0.0
	M		26.2	3,230	156.90	0.0	0.0	0.0	0.0	0.0	0.0
	B		26.1	3,200	167.40	0.0	0.0	0.0	0.0	0.0	0.0

(a) Total of all striped bass collected excluding eggs.
(b) No valid sample collected.
(c) Data excluded from analysis because of extremely high or low sample volume (see Subsection 4.3.2).

Note: Dashes (--) indicate data not available because of equipment malfunction.
S = surface; M = middepth; B = bottom.
YSL = yolk-sac larvae; PYSL = post yolk-sac larvae; Juv = juveniles; Uid = unidentified life stage.