LOOP MARINE AND ESTUARINE MONITORING PROGRAM, 1978–95

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VOLUME 4: ZOOPLANKTON AND ICHTHYOPLANKTON

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MEASUREMENT ABBREVIATIONS

cm = centimeter

h = hour

ha = hectare

km - kilometer

m = meter

ml =milliliter

mm = millimeter

ppt = parts per thousand

s = second

yr = year

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EXECUTIVE SUMMARY

Data Analysis of the LOOP Estuarine and Marine Monitoring Program, 1978-95

Introduction

Louisiana Offshore Oil Port

The Louisiana Offshore Oil Port (LOOP) facilities in coastal Louisiana provide the United States with the country's only superport for off-loading deep draft tankers. The facilities are located in Lafourche Parish in southeast Louisiana, south of New Orleans and adjacent offshore waters west of the Mississippi River Delta. The superport complex consists of a marine Offshore Terminal (Figure ES-1; Station 708) located about 30 km from the mainland in the Gulf of Mexico, an onshore storage facility at the Clovelly Storage Dome near Galliano about 50 km inland from the coast (Station 38), and a large diameter pipeline system including a pumping booster station near Fourchon onshore to deliver oil to the storage facility. A small-boat harbor and logistics facility are located at Port Fourchon, on Bayou Lafourche.

Monitoring Program

The proposed construction and use of these facilities have led to questions about various consequential environmental impacts arising from the following activities: (1) creation of the salt dome storage facility required solution mining of storage caverns within the Clovelly Storage Dome and the creation of a 101 ha brine storage area (brine is pumped back into the storage cavity to maintain the integrity of the caverns, as well as to float the oil back out) and would result in freshwater (used to excavate the salt dome) bypassing the estuary on its way to the offshore disposal site (Figure ES-2); (2) the brine (average 200 ppt) and other leachates are discharged 4.8 km offshore at the Brine Diffuser facility (Station 36) into a major US fishing zone; (3) creation of a pipeline corridor and subsequent related activities resulting in direct and indirect wetland losses and possible changes in hydrology; (4) subsequent logistical or economic activities

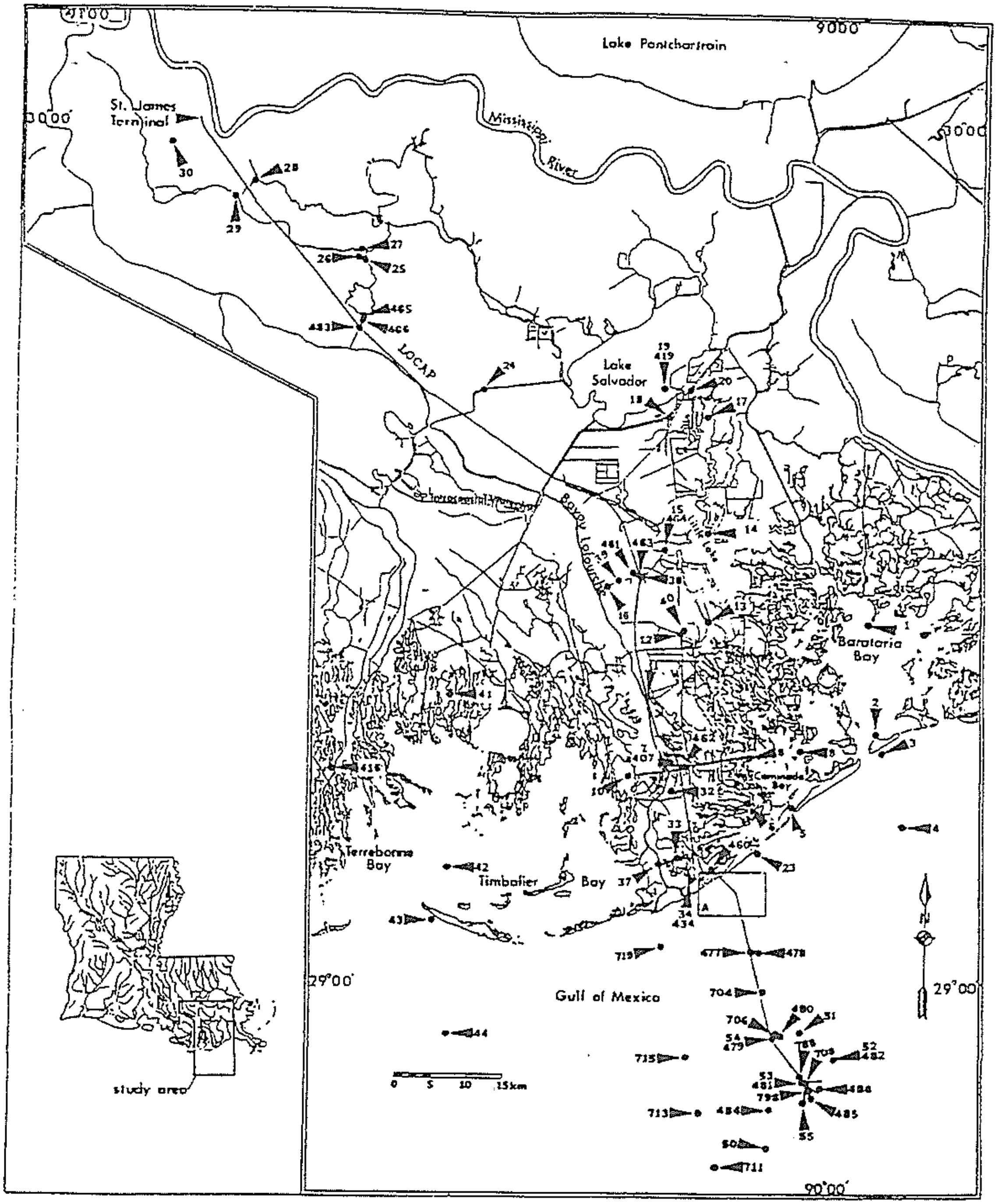

Figure ES-1. General map of the study area including the alignment of the LOOP (and LOCAP) pipelines. Zooplankton and ichthyoplankton stations are indicated by arrow and number. (scale = 1:494,000). Box A represents the LOOP Brine Diffuser area and is shown in detail in Figure ES-2. Modified after Hanifen et al. (1987; Figure 1.2).

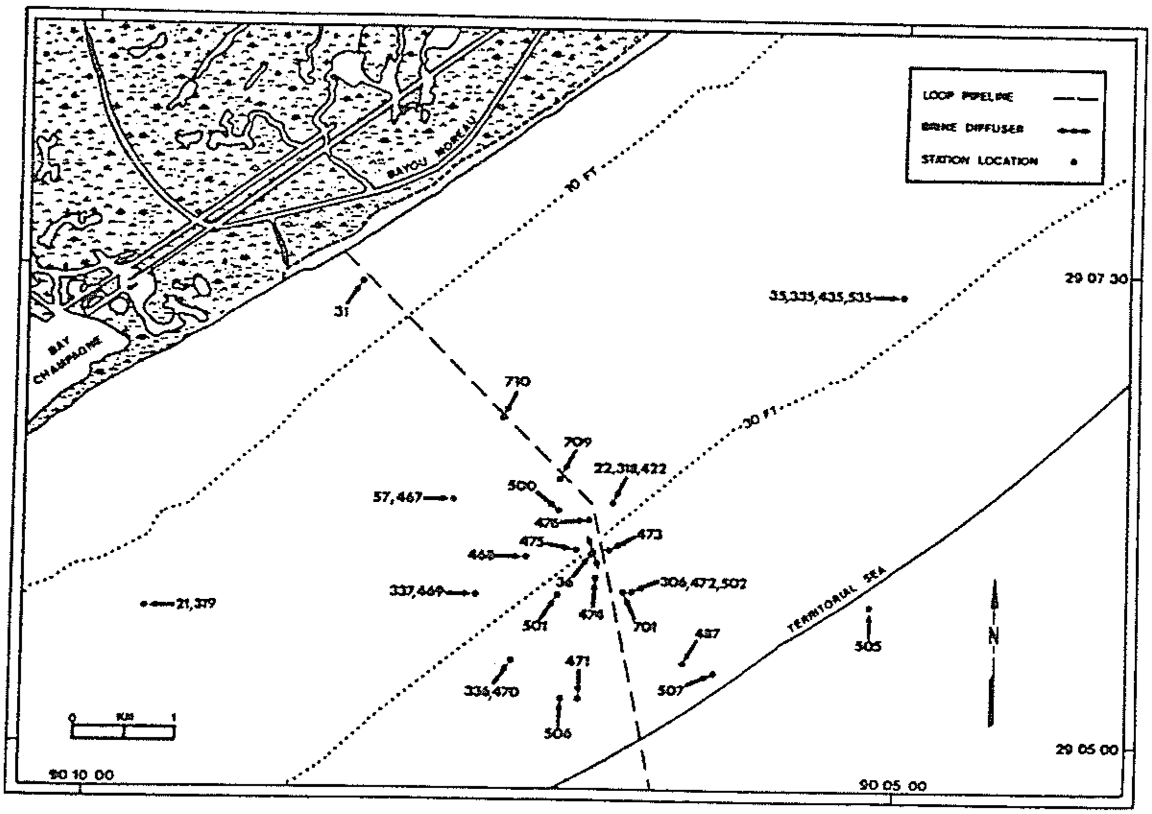

Figure ES-2. Zooplankton and ichthyoplankton sampling stations in the vicinity of the LOOP Brine Diffuser (Station 36) off the central Louisiana coast. (scale = 1:51,000). Modified after Hanifen et al. (1987; Figure 1.3).

during and after facility operations; and (5) small and large oil spills. Because of the potential risks associated with the construction and operation of the superport (e.g., bringing the world's largest oil tankers to one of the most productive fisheries resources in the world), both state and federal licenses required environmental monitoring of LOOP activities. The environmental monitoring program (EMP) was developed under mandate of the Superport Environmental Protection Plan (revised, 1977), a regulation of the State of Louisiana implementing the Offshore Terminal Act. The Louisiana Department of Wildlife and Fisheries (LDWF) collected data related to estuarine/marine monitoring components from 1978 to 1995. This report is the zooplankton and ichthyoplankton component in a series of five reports that analyze the impacts of LOOP construction, operation, and maintenance on the estuarine/marine environment.

Study Objectives

The objectives of this analysis are directly related to the original objectives of the LOOP, Inc. Environmental Management Plan (EMP 1986: section 3.1, page 8), which were:

(1) to obtain seasonal environmental and ecological data so that conditions existing during operation can be related to historical baseline conditions;

(2) to detect during the operation of the project any adverse alterations or damages to the environment so that corrective action can be taken as soon as possible;

(3) to obtain sufficient data to determine the cause of environmental damages or alterations so that responsibility can be properly placed; and,

(4) to provide information in order to evaluate long- and short-term impacts of the project.

Therefore, the main effort of Task 2 is to conduct appropriate statistical analyses on the existing data collected by LDWF to determine the impact (i.e., to test the null hypothesis of no difference or no impact) of LOOP construction and operation on the estuarine and inner continental shelf zooplankton and ichthyoplankton by testing whether the temporal trends at the monitoring impact stations are the same as in the control areas. This is tested with the TIME x TREATMENT interaction term in a standard Before-After, Control-Impact (BACI) design. However, all tests were not limited to the BACI design. In the absence of the appropriate Before data set(s), we conducted a During-After, Control-Impact statistical design and in one case simply a Control-Impact design.

Methods

The Data Base

Over the course of the zooplankton and ichthyoplankton field sampling program (February 1978 to December 1995), a total of 81 plankton sites (98 stations) were sampled at one time or another at environments ranging from freshwater to mid-continental shelf. Four (4) sampling gears and six (6) different sampling protocols were employed over the duration of the study. To examine the potential impacts of floating oil, surface tows were taken at inshore and offshore stations. Within inshore and offshore waters a 0.5-m plankton net with either 0.08- or 0.153-mm mesh was towed for one minute. In offshore waters and at one inshore station, a 1-m plankton net with 0.363-mm mesh was towed for 3-5 minutes. In deeper offshore waters, bongo nets were used to sample zooplankton and ichthyoplankton occupying various divisions of the water column where effects of aged and dispersed oil would most likely occur. This sampling involved various protocols utilizing a 60-cm, hinged, opening and closing bongo net frame with 0.363-mm mesh netting towed in a horizontally stratified or oblique fashion for approximately 3-5 minutes.

Zooplankton and ichthyoplankton sampling was conducted monthly at most stations with quarterly sampling at others. Only seven stations were sampled continuously from early in the study, February to July 1978, to near its completion. At all sampling stations temperature, conductivity, salinity, and dissolved oxygen profiles were taken.

Modifications to the Sampling Program

The zooplankton sampling program was revised a number of times, as the environmental program emphasis shifted from monitoring LOOP facility and pipeline construction and brine discharge, to monitoring potential impacts of ongoing operations including oil spill and dispersant use. Additional changes were implemented to streamline the sampling program (decrease field effort and sample processing time) and to alleviate the accumulating backlog of unsorted and unidentified plankton collections.

Zooplankton biomass (standing stock) estimates (ml/m^3) and selected decapod crustacean taxa were identified and enumerated from plankton collections over most of the duration of the project and consisted of the early developmental stages of *Penaeus* spp., *Callinectes* spp., and *Portunus* spp. In addition, Copepoda, Polychaeta, and Gastropoda were often recorded as well. Ichthyoplankton identification for all the major taxa was mostly complete after January 1981.

Results and Discussion

For a listing of the types of statistical analyses conducted and their time periods, control-impact station groupings, and the taxa considered see Table ES-1. There were numerous significant or marginally significant ($P \leq 0.1$) seasonal, temporal, and spatial main effects and interactions which were identified that were not directly related to LOOP operations or impacts (Table ES-2).

Only a few statistical analyses had significant or marginally significant Direct LOOP Impact implications (see DLI code in Table ES-2), while another test had results that appeared to have Indirect LOOP Impacts (ILI code). Some test results appear to be related to oil discharge or spills and/or subsequent clean up activities, while others were related to the construction phase. The discussion of marginally significant statistical results is environmentally, ecologically, and biologically meaningful because they suggest that those parameters are possibly sensitive to LOOP-related environmental perturbations.

The zooplankton biomass data set was by far the most complete (longest time series and largest sample size) and had a greater number of significant and/or marginally

Table ES-1. Summary of statistical analyses used to investigate potential environmental impacts resulting from LOOP related activities. Listed are the type of statistical model used, type of impact tested for, the time periods defined within each test, the LDWF zooplankton/ichthyoplankton stations (divided into impact and controls) and taxonomic groupings used. BACI = Before-After, Control-Impact statistical design. DACI = During-After, Control-Impact statistical design. CI = Control-Impact statistical design. See Table 1 for definitions of HL and OM gears. N = Total number of stations available for analysis; + sign indicates a positive station (i.e., a station at which that organism was collected).

Statistical Model	Type of Impacts	Time Period			Stations Used		Taxonomic Groupings
		Before	During	After	Impact	Control	
BACI, Mixed ANOVA Model	Inshore, Long-term Combined Impacts - with oil data & with season (main effect); HL stations only; See Table 5 for statistical results.	2/78-2/79		3/79-12/95	7 (407) (≈462) 11 15 (≈464) 16 38 (≈463) 39	1 13 6 14 8 18 9 32 10 33 12 37 (40) 41	Zooplankton biomass (displacement vol.); N = 1970; After ends 12/94 *Penaeus aztecus*; N = 1835 with 106 + sta.'s; excluded 2/78 Osteichthyes; N = 1727 with 766 + sta.'s; excluded 2/78 and 2-4/80
BACI, Mixed ANOVA Model	Inshore, Long-term Construction Impacts - without oil or brine data & with season (main effect) for pipeline & Clovelly Storage Dome; maximizing longevity of stations while minimizing variability of extraneous transient stations; HL stations only; See Table 6.	2/78-2/79		3/79-8/85	7 (407) (≈462) 15 (≈464) 16	1 12 (40) 13 14 18	Zooplankton biomass (settled vol.); N = 613 *Penaeus aztecus*; N = 412 with 24 + sta.'s; excluded Fall (only 1 + sta.) and sta. 16 (no catch) Osteichthyes; N = 581 with 301 + sta.'s; excluded 2-4/78 and 2-4/80
BACI, Mixed ANOVA Model	Inshore Construction Impacts Reduced Time Interval - without oil or brine data & with season (main effect) for pipeline & Clovelly Storage Dome; maximizing more detailed zooplankton data set early in study; HL stations only; See Table 7.	2/78-2/79		3/79-3/83	7 (407) (≈462) 15 (≈464) 16	1 (40) 6 13 8 14 9 18 10 41 12	Polychaeta; N = 543 with 200 + sta.'s; excluded 7/82-3/83 Gastropoda; N = 543 with 184 + sta.'s; excluded 7/82-3/83 Copepoda (excluded nauplii and *Acartia* spp.); N = 550 with 513 + sta.'s; excluded stations where no copepods were identified *Acartia* spp. (excluded nauplii); N = 550 with 489 + sta.'s; excluded stations where no copepods were identified Decapoda (excluded *Penaeus aztecus*); N = 423 with 268 + sta.'s; excluded 2-3/78 and 7/82-3/83; excluded Winter

DACI, Mixed ANOVA Model	Inshore, Long-term Construction Impacts -no pre-impact data; without oil or brine data & with season (main effect) for pipeline & Clovelly Storage Dome; maximizing longevity of stations especially those which started later while minimizing variability of extraneous stations; HL stations only; See Table 8.		3/79-3/81	4/81-8/85	7 15 16 38 (≈463)	1 14 12 18 (40) 37 13	Zooplankton biomass (settled vol.); N = 674 *Penaeus aztecus*; N = 640 with 41 + sta.'s (low abundance) Osteichthyes; N = 642 with 355 + sta.'s; excluded 2-4/80
DACI, Mixed ANOVA Model	Long-term Offshore Brine Diffuser - with and without brine data & with season (main effect); contains gap in detailed zooplankton data (2/84-7/86); maximizes longevity of appropriate stations; OM stations only; See Table 9. * data start dates used within the individual taxonomic analyses varies according to first occurrence - see Taxonomic Groupings column.		8/80*-11/83 (see Type of Impact column notes)	12/83 - 12/95	36 (474) (475)	21 22 35/535	Zooplankton biomass (displacement vol.); N = 666 *Penaeus aztecus*; N = 470 with 194 + sta.'s; During starts 10/80 *Callinectes sapidus* (megalopa); N = 462 with 253 + sta.'s; During starts 1/81 *C. similis* (megalopa); N = 460 with 249 + sta.'s; During starts 1/81 *Brevoortia patronus* (included all *Brevoortia* spp.); N = 308 with 209 + sta.'s; only two seasons with Apr. in Winter and Sept. in Fall; During starts 12/80 *Anchoa* spp. (included Engraulidae, *A. hepsetus* and *A. mitchilli*); N = 441 with 275 + sta.'s; During starts 2/81 Myctophidae (included *Diaphus* spp., *Lampanyctus* spp. And *Hygophum* spp.); N = 238 with 82 + sta.'s (low abundance); only Winter (months 11, 12, and 1) and Spring (months 2, 3, and 4); During starts 1/81 *Chloroscombrus chrysurus*; N = 322 with 123 + sta.'s; excluded Winter; During starts 5/81 *Cynoscion arenarius*; N = 208 with 102 + sta.'s; excluded Winter (10 + sta's) and Fall (9 + sta's); During starts 4/82 *Sciaenops ocellatus*; N = 92 with 71 + sta.'s; instead of Season model run on Month = 8, 9 and 10; During starts 8/81; model weak due to low abundance Blenniidae (included *Hypsobennius hentzi*, *Ophioblennius* spp., and *Scartella cristata*); N = 437 with 194 + sta.'s; During starts 3/81 Gobiidae (included *Gobionellus hastatus* now renamed *G. oceanicus*); N = 444 with 84 + sta.'s (low abundance); During starts 1/81 Scombridae; N = 420 with 43 + sta.'s (low abundance); During starts 7/81 *Peprilus* spp. (included *P. alepidotus* (≈*P. paru*), *P. burti*, and Stomateidae); N = 429 with 52 + sta.'s (low abundance); During starts 4/81 Bothidae; N = 442 with 72 + sta.'s (low abundance); During starts 1/81
DACI, Mixed ANOVA Model	Reduced Long-term Offshore Brine Diffuser - with and without brine data & with season (main effect); insufficient detailed zooplankton data due to data gap (2/84-7/86); maximizing longevity of stations while minimizing variability of extraneous transient stations and of a long After time period; HL stations only; See Table 10.		5/80-11/83	12/83 -7/86	36	21 22 35/535	Zooplankton biomass (settled vol.); N = 263

CI Mixed ANOVA Model	Long-term Offshore Terminal Oil Impact-with Offshore Terminal oil data (which ends 12/94) as a covariate & year & season as main effects; no pre-impact and post-impact effects; maximizing longevity of stations while minimizing variability of extraneous transient stations; OM stations only; See Table 11. * data start and end dates used within the individual taxonomic analyses varies according to occurrence - see Taxonomic Groupings column.		5/81*-12/94* (see Type of Impact column notes)		53 (481) 55 708	52 (482) 54 (479) 704 706	Zooplankton biomass (displacement vol.); N = 642 *Penaeus aztecus* (postlarvae); N = 322 with 95 + sta.'s (low abundance); data analyzed from 6/82 to 2/90 *Callinectes sapidus* (megalopa); N = 302 with 113 + sta.'s; data analyzed from 5/81 to 12/89; excluded 1983 data *C. similis* (megalopa); N = 344 with 168 + sta.'s; data analyzed from 5/81 to 2/90 *Portunus* spp. (megalopa); N = 318 with 149 + sta.'s; data analyzed from 4/82 to 12/89 *Brevoortia patronus* (included *B. gunteri*); N = 158 with 134 + sta.'s; data analyzed from 10/82 to 2/90; excluded Spring and Summer *Anchoa* spp. (included Engralidae, *A. hepsetus* and *A. mitchilli*); N = 247 with 154 + sta.'s; data analyzed from 6/81 to 9/89; excluded Fall Myctophidae (included *Centrobranchus nigrocellatus*, *Diagenichthys altanticus*, *Notoscopelus resplendens*, *Gonichthys* spp., *Hygophum* spp., *Lampanyctus* spp., and *Myctophum* spp.); N = 244 with 109 + sta.'s; data analyzed from 5/82 to 2/90; excluded Summer *Chloroscombrus chrysurus*; N = 145 with 71 + sta.'s; data analyzed from 8/81 to 9/89; only Spr./Sum. (months 5, 6, and 7) and Sum./Fall (months 8, 9, and 10); excluded 1983 data *Cynoscion arenarius*; N = 239 with 64 + sta.'s (low abundance); data analyzed from 4/82 to 9/89; excluded Fall Blenniidae (included *Hypoblennius* spp. and *Ophioblennius* spp.); N = 310 with 179 + sta.'s; data analyzed from 8/81 to 6/89 Scombridae; N = 190 with 74 + sta.'s; data analyzed from 8/81 to 9/89; only Spr./Sum (Apr. through July 15) and Sum./Fall (July 16 through Oct.) *Peprilus* spp. (included *P. alepidotus* (≈ *P. paru*), *P. burti* and Stomateidae); N = 194 with 71 + sta.'s; data analyzed from 11/81 to 3/88; excluded Summer Bothidae; N = 315 with 70 + sta.'s (low abundance); data analyzed from 5/81 to 6/89 *Symphurus* spp. (included *S. plagiusa* and Cynoglossidae); N = 248 with 76 + sta.'s (low abundance); data analyzed from 5/81 to 9/89; excluded Winter

Table ES-2. Summary of parameters tested and their specific environmental impact test results which are given within the parentheses as actual P values for main effects, covariates or interactions versus the Bonferroni adjusted alpha values for that family of multiple tests. Also provided are test interpretation codes: Significant (S), Marginally Significant (MS), and Non-Significant (NS), with a probable explanation of significant observed differences, i.e., Direct Loop Impact (DLI), Indirect LOOP Impact (ILI), or Non-LOOP Impact (NLI). Also presented is a probable explanation of why marginally significant or non-significant responses were found, i.e., Parameter Insensitive to LOOP operations (PI), Parameter Sensitive But Variability too high to detect significant differences with the sampling design used (PSBV), or Parameter Sensitive to LOOP operations, but LOOP operations Not Implicated (PSNI). The reader is referred to Appendix Tables II-A to II-F for a listing of all biological parameters used (zooplankton and ichthyoplankton monthly mean densities across all years with number of positive sampling stations and standard deviations needed to calculate 95% confidence limits and/or coefficients of variation). See Table 4 for test details. See Tables 5-11 for test results.

Parameter Tested	Specific Test Results	Sig. Code	Prob. Explanation for Sig. or Marginal Sig.	Prob. Reason for Marginal Sig. or Non-Sig.
Zooplankton biomass estimate (settled or displacement vol. - ml/m^3)	BACI Inshore Combined Impact with oil as a covariate (2/78 - 12/94)			
	· Oil covariate (P = 0.0983 vs. 0.0167)	MS	DLI	PSBV
	· Before-After Season interaction (P = 0.0811 vs. 0.0167)	MS	NLI	PSNI
	BACI Inshore Construction (2/78 - 8/85)	NS		PSBV
	DACI Inshore Construction (3/79 - 8/85)			
	· Season effect (P = 0.0005 vs. 0.0167)	S	NLI	
	· During-After, Control-Impact interaction (P = 0.0428 vs. 0.0167)	MS	DLI	PSBV
	DACI Offshore Brine Diffuser with brine as a covariate OM data only (8/80 - 12/95)	NS		PSBV
	· No brine data - During-After effect (P = 0.0303 vs. 0.0033)	MS	NLI	PSBV
	DACI Offshore Brine Diffuser with brine as covariate HL data only (5/80 - 7/86)	NS		PSBV
	· No brine data - Season effect (P = 0.0011)	S	NLI	
	· No brine data - During-After effect (P = 0.0510)	MS	NLI	PSBV
	· No brine data - During-After Season interaction (P = 0.0029)	S	NLI	
	· No brine data - During-After, Control-Impact interaction (P = 0.0566)	MS	ILI	PSBV
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (5/81 - 12/94)			
	· Season effect (P = 0.0161 vs. 0.0033)	MS	NLI	PSNI
	· Year effect (P = 0.0079 vs. 0.0033)	MS	NLI	PSNI
	· Year Season interaction (P = 0.0003 vs. 0.0033)	S	NLI	
Polychaeta	BACI Inshore Construction Impact (2/78 - 6/82)			
	· Before-After Season interaction (P = 0.0112 vs. 0.0100)	MS	NLI	PSNI

Gastropoda	BACI Inshore Construction Impact (2/78 - 6/82)			
	· Season effect (P = 0.0001 vs. 0.0100)	S	NLI	
Copepoda	BACI Inshore Construction Impact (2/78 - 3/83)			
	· Season effect (P = 0.0637 vs. 0.0100)	MS	NLI	PSBV
	· Before-After Season interaction (P = 0.0027 vs. 0.0100)	S	NLI	
	· Control-Impact Season interaction (P = 0.0013 vs. 0.0100)	S	NLI	
	· Before-After, Control Impact interaction (P = 0.0991 vs. 0.0100)	MS	NLI	PSBV
	· Before-After, Control-Impact Season interaction (P = 0.0037 vs. 0.0100)	S	NLI	
Acartia spp.	BACI Inshore Construction Impact (2/78 - 3/83)			
	· Season effect (P = 0.0001 vs. 0.0100)	S	NLI	
	· Before-After Season interaction (P= = 0.0222 vs. 0.0100)	MS	NLI	PSNI
Decapoda	BACI Inshore Construction Impact (4/78 - 6/82)			
	· Season effect (P = 0.0001 vs. 0.0100)	S	NLI	
	· Before-After Season interaction (P = 0.0559 vs. 0.0100)	MS	NLI	PSNI
Penaeus aztecus	BACI Inshore Combined Impact with oil as a covariate (3/78 - 12/95)	NS		PSBV
	BACI Inshore Construction (2/78 - 8/85)			
	· Control-Impact Season interaction (P = 0.0543 vs. 0.0167)	MS	NLI	PSBV
	DACI Inshore Construction (3/79 - 8/85)	NS		PSBV
	DACI Offshore Brine Diffuser with brine as a covariate (10/80 - 12/95)	NS		PSBV
	· No brine data - Season effect (P = 0.0027 vs. 0.0033)	S	NLI	
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (6/82 - 2/90)			
	· Season effect (P = 0.0001 vs 0.0033)	S	NLI	
	· Year effect (P = 0.0316 vs 0.0033)	MS	NLI	PSNI
	· Year Season interaction (P = 0.0001 vs 0.0033)	S	NLI	
Callinectes sapidus	DACI Offshore Brine Diffuser with brine as a covariate (1/81 - 12/95)	NS		PSBV
	· No brine data - Season effect (P = 0.0001 vs. 0.0033)	S	NLI	
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (5/81 - 12/89)			
	· Season effect (P = 0.0002 vs. 0.0033)	S	NLI	
	· Control-Impact Season interaction (P = 0.0005 vs. 0.0033)	S	NLI	
	· Year effect (P = 0.0001 vs. 0.0033)	S	NLI	
	· Control-Impact Year interaction (P = 0.0001 vs. 0.0033)	S	NLI	
	· Year Season interaction (P = 0.0001 vs. 0.0033)	S	NLI	
	· Control-Impact, Year Season interaction (P = 0.0001 vs. 0.0033)	S	NLI	
C. similis	DACI Offshore Brine Diffuser with brine as a covariate (1/81 - 12/95)	NS		PSBV
	· No brine data - During-After effect (P = 0.0572 vs. 0.0033)	MS	NLI	PSBV
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (5/81 - 2/90)			
	· Season effect (P = 0.0683 vs. 0.0033)	MS	NLI	PSNI
	· Year effect (P = 0.0333 vs. 0.0033)	MS	NLI	PSNI
	· Year Season interaction (P = 0.0001 vs. 0.0033)	S	NLI	
Portunus spp.	CI Offshore Terminal Oil Impact with platform oil data as a covariate (4/82 - 12/89)			
	· Season effect (P = 0.0066 vs. 0.0033)	MS	NLI	PSBV
	· Year effect (P = 0.0018 vs. 0.0033)	S	NLI	
	· Year Season interaction (P = 0.0007 vs. 0.0033)	S	NLI	

Osteichthyes	BACI Inshore Combined Impact with oil as covariate (3/78 - 12/95)	NS		PSBV
	· No oil data - Control-Impact effect (P = 0.0861 vs. 0.0167)	MS	DLI	PSBV
	BACI Inshore Construction Impact (5/78 - 8/85)	NS		PSBV
	DACI Inshore Construction (3/79 - 8/85)			
	· Season effect (P = 0.0023 vs. 0.0167)	S	NLI	
	· During-After Season interaction (P = 0.0046 vs. 0.0167)	S	NLI	
	· Control-Impact Season interaction (P = 0.0962 vs. 0.0167)	MS	NLI	PSBV
Brevoortia patronus	DACI Offshore Brine Diffuser with brine as a covariate (12/80 - 12/95)	NS		PSBV
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (10/82 - 2/90)			
	· Season effect (P = 0.0248 vs. 0.0033)	MS	NLI	PSBV
	· Year effect (P = 0.0849 vs. 0.0033)	MS	NLI	PSBV
	· Year Season interaction (P = 0.0656 vs. 0.0033)	MS	NLI	PSBV
Anchoa spp.	DACI Offshore Brine Diffuser with brine as a covariate (2/81 - 12/95)	NS		PSBV
	· No brine data - Season effect (P = 0.0001 vs. 0.0033)	S	NLI	
	· No brine data - During-After Season interaction (P = 0.0755 vs. 0.0033)	MS	NLI	PSBV
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (6/81 - 9/89)			
	· Oil covariate (P = 0.0991 vs. 0.0033)	MS	DLI	PSBV
	· Season effect (P = 0.0023 vs. 0.0033)	S	NLI	
	· Year effect (P = 0.0006 vs. 0.0033)	S	NLI	
Myctophidae	DACI Offshore Brine Diffuser with brine as a covariate (1/81 - 12/95)	NS		PI
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (5/82 - 2/90)			
	· Season effect (P = 0.0004 vs. 0.0033)	S	NLI	
	· Year effect (P = 0.0247 vs. 0.0033)	MS	NLI	PSBV
	· Year Season interaction (P = 0.0962 vs. 0.0033)	MS	NLI	PSBV
Chloroscombrus chrysurus	DACI Offshore Brine Diffuser with brine as a covariate (5/81 - 12/95)	NS		PSBV
	· No brine data - Season effect (P = 0.0001 vs. 0.0033)	S	NLI	
	· No brine data - During-After Season interaction (P = 0.0745 vs. 0.0033)	MS	NLI	PSNI
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (8/81 - 9/89)			
	· Year effect (P = 0.0565 vs. 0.0033)	MS	NLI	PSBV
	· Year Season interaction (P = 0.0770 vs. 0.0033)	MS	NLI	PSBV
	· Control-Impact, Year Season interaction (P = 0.0271 vs. 0.0033)	MS	DLI	PSBV
Cynoscion arenarius	DACI Offshore Brine Diffuser with brine as a covariate (4/82 - 12/95)	NS		PSBV
	· No brine data - Season effect (P = 0.0071 vs. 0.0033)	MS	NLI	PSNI
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (4/82 - 9/89)	NS		PSBV
Sciaenops ocellatus	DACI Offshore Brine Diffuser with brine as a covariate (8/81 - 12/95)	NS		PI
Blenniidae	DACI Offshore Brine Diffuser with brine as a covariate (3/81 - 12/95)	NS		PI
	· No brine data - Season effect (P = 0.0117 vs. 0.0033)	MS	NLI	PI
	· No brine data - During-After effect (P = 0.0713 vs. 0.0033)	MS	NLI	PSBV
	· No brine data - During-After Season interaction (P = 0.0809 vs. 0.0033)	MS	NLI	PSBV
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (8/81 - 6/89)			
	· Season effect (P = 0.0044 vs. 0.0033)	MS	NLI	PSBV
	· Year Season interaction (P = 0.0247 vs. 0.0033)	MS	NLI	PSBV
Gobiidae	DACI Offshore Brine Diffuser with brine as a covariate (1/81 - 12/95)	NS		PI
	· No brine data - During-After Season interaction (P = 0.0333 vs. 0.0033)	MS	NLI	PI

Scombridae	DACI Offshore Brine Diffuser with brine as a covariate (7/81 - 12/95)	NS		PI
	· No brine data - Season effect ($P = 0.0194$ vs. 0.0033)	MS	NLI	PI
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (8/81 - 9/89)			
	· Year effect ($P = 0.0111$ vs. 0.0033)	MS	NLI	PSBV
Peprilus spp.	DACI Offshore Brine Diffuser with brine as a covariate (4/81 - 12/95)	NS		PI
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (11/81 - 3/88)	NS		PSBV
Bothidae	DACI Offshore Brine Diffuser with brine as a covariate (1/81 - 12/95)	NS		PI
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (5/81 - 6/89)	NS		PI
Symphurus spp.	CI Offshore Terminal Oil Impact with platform oil data as a covariate (5/81 - 9/89)	NS		PI

significant test results. The most relevant test finding resulted from the BACI Long-term, Inshore, Combined Impacts Model (February 1978 to December 1994) which entered the Clovelly Storage Dome oil spill data as a covariate. The oil covariate proved to be marginally significant (P = 0.0983) and showed an inverse (negative) relationship with zooplankton biomass (Figure ES-3). Another relevant finding involving zooplankton biomass occurred within the During-After, Control-Impact (DACI) Inshore, Long-term Construction Impacts Model, which had a marginally significant (P = 0.0428) During-After, Control-Impact interaction whereby mean zooplankton biomass at Impact stations was greater than the Controls (2.17 vs. 1.70 ml/m^3) During the construction phase, but was lower than Control estimates (1.48 vs. 1.81 ml/m^3) After construction. Perhaps construction disturbances initially stimulated the standing stock of zooplankton, which later was depressed by chronic or long-term combinations of perturbations. Other marginally significant test results were more difficult to explain in terms of Indirect LOOP impacts, such as the During-After, Control-Impact interaction (P = 0.0566) seen within the zooplankton biomass data in the DACI Brine Diffuser model run on the HL data set over the May 1980 to July 1986 time period. Mean zooplankton biomass at Impact stations was less than Controls within the During period, but was greater than Controls After (Figure ES-4).

As with the oil, brine, and construction analyses conducted inshore, the Offshore Terminal Oil Impact analyses, which used the platform oil spill data set as a covariate, produced a number of significant and marginally significant temporal (in this case seasonal and annual) results (Table ES-2). However, two (2) test results relate directly to the discussion of LOOP-related environmental impacts. Densities for *Anchoa* spp., a very abundant, and ecologically important, coastal taxonomic group, displayed a marginally significant (P = 0.0991; Figure ES-5) negative (inverse) relationship with the offshore oil covariate. This negative relationship was not strong and appeared to be influenced by the five largest oil spill points. Although the negative relationship was not additionally supported by significant Control-Impact (spatial) interactions, the analysis was able to identify significant temporal relationships. The second noteworthy impact-related finding occurred with *Chloroscombrus chrysurus*, another very abundant coastal species. *Chloroscombrus chrysurus* displayed a marginally significant Control-Impact-

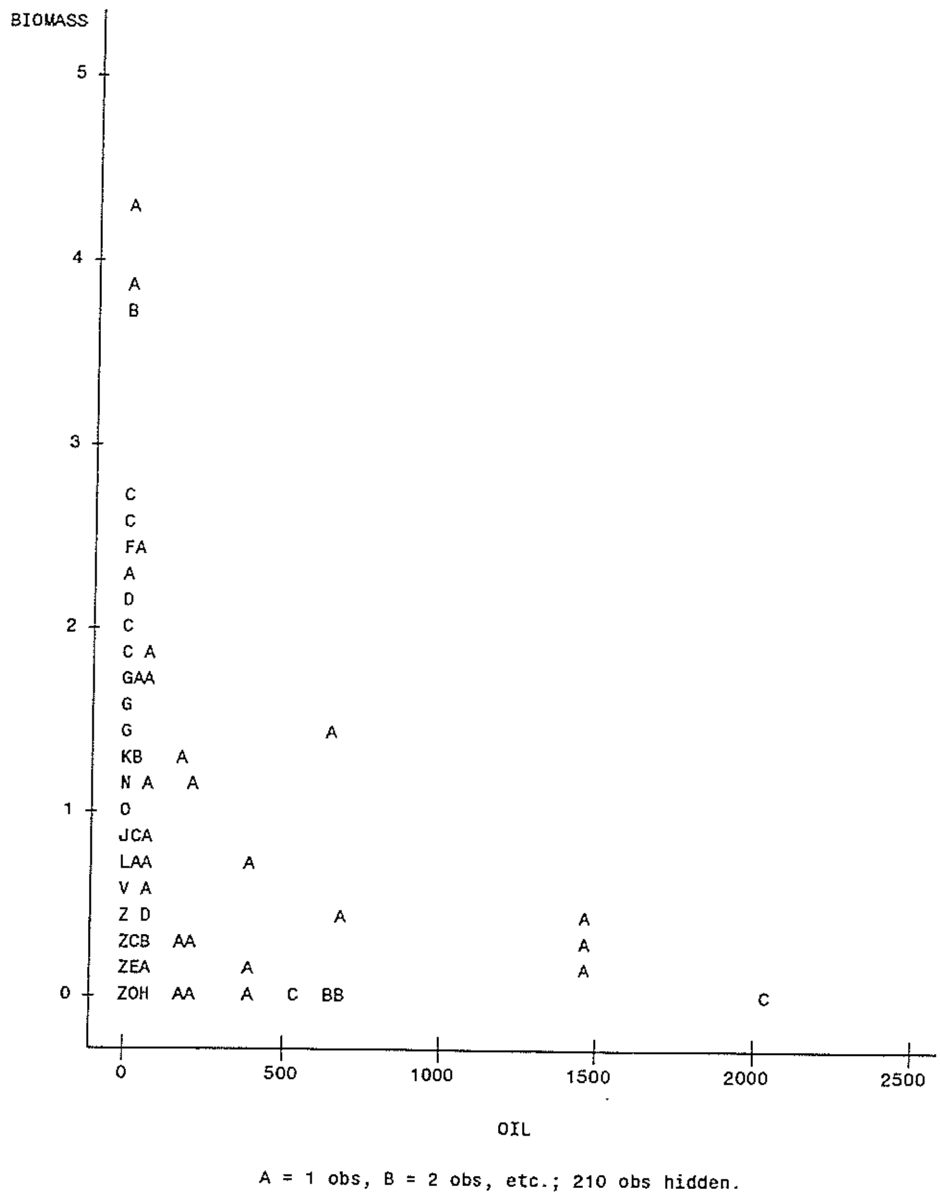

Figure ES-3. Log-transformed zooplankton biomass estimates (displacement volumes - ml/m^3) from Impact stations associated with the Clovelly Storage Dome (i.e., stations 15, 16, 38, and 39) plotted against inshore LOOP - related oil spill data (gallons). See Table ES-1 and Table 5 for additional information.

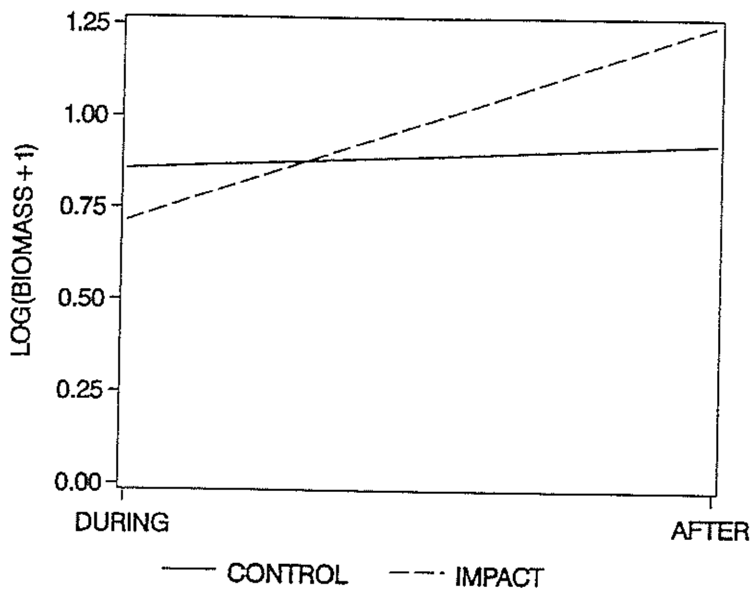

Figure ES-4. Log-transformed zooplankton biomass estimates (settled volumes - ml/m^3) for the During and After time periods and the Control and Impact stations from the DACI reduced, long-term Brine Diffuser impacts model run on HL stations only. See Table ES-1 and Table 10 and the text for further details.

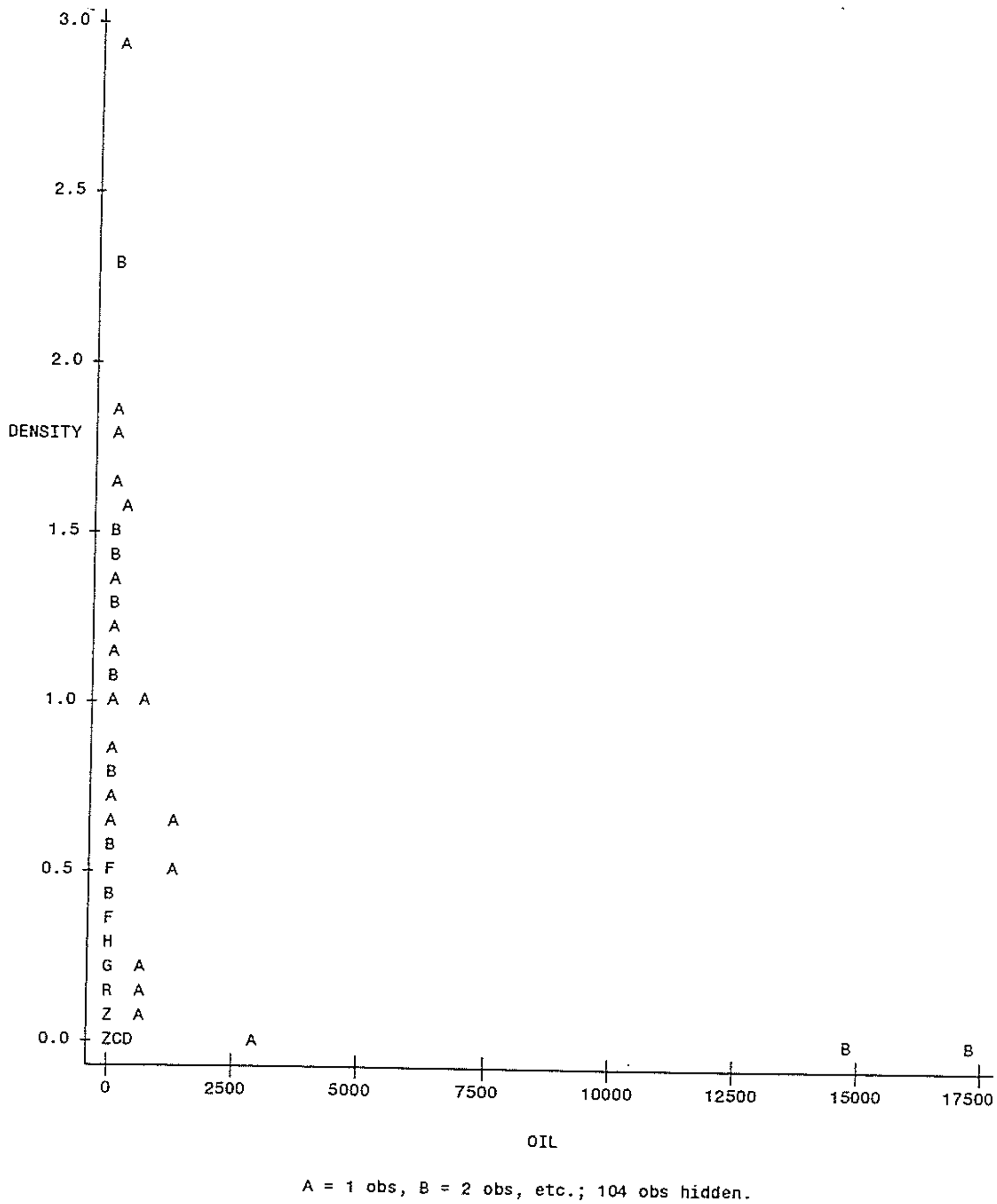

Figure ES-5. Log-transformed *Anchoa* spp. densities (no./m^3) from Impact stations associated with the Offshore Terminal (i.e., stations 53 and 55) plotted against offshore LOOP - related oil spill data (gallons). See Table ES-1 and Table 11 for additional information.

Year-Season interaction (P = 0.0271; Figure ES-6). This statistical result was mostly a reflection of the mean density values for the Control stations during the summer/fall time period in 1981 (13.97 larvae/100m^3) and 1985 (45.27) being an order of magnitude greater than the Impact station densities (3.84 and 0.81, respectively). Control station densities were also an order of magnitude greater than Impact during the high abundance peak in the spring/summer period of 1982 (63.82 vs. 4.24 larvae/100m^3, respectively). Such a statistical finding may be indicative of environmental impact(s) associated with less clearly defined spatial and temporal events, such as relatively small, chronic oil spills.

Conclusions

In summary, the negative relationship between the Clovelly Storage Dome oil spill data and zooplankton biomass, and the zooplankton biomass During-After, Control-Impact interaction within the DACI Inshore Long-term Construction Model provide the clearest implications for LOOP-related impacts inshore. In the coastal/offshore environment, there were two (2) indicators of potential environmental impact from LOOP-related activities. The Control-Impact, Offshore Terminal Oil Impact analysis of zooplankton and ichthyoplankton densities used platform oil spill data as a covariate, and Season and Year as main effects. The negative relationship between spilled LOOP offshore terminal oil and *Anchoa* spp. densities and the Control-Impact-Year-Season interaction within the *Chloroscombrus chrysurus* analysis, both indicate that these taxa may be sensitive to LOOP-related environmental impact. Clearly when the data sets were large, continuous, or involved very abundant taxa, the analysis was sensitive enough to observe potential environmental impact(s).

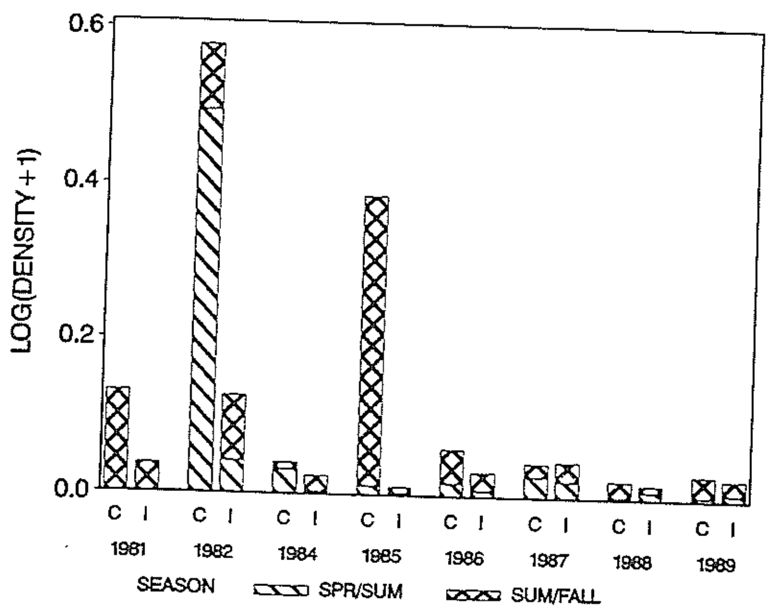

Figure ES-6. Log-transformed *Chloroscombrus chrysurus* mean annual densities (no./m^3) by season for Control and Impact stations from the CI Offshore Terminal oil impact analysis. The time period tested was from August 1981 to September 1989. The Spring/Summer time period represents May through July while the Summer/Fall represents August through October, inclusive. Note the absence of 1983 data. See Table ES-1 and Table 11 for further details.

Technical Information for the LOOP Estuarine and Marine

Monitoring Program Revisions

This section is a summary of a detailed discussion that can be found in Task 3. We felt it was useful to include it here since some readers may only review the Executive Summary or the Task 2 report. The data sets examined indicated that the current monitoring program, as identified in the original environmental management plan, worked, i.e., we were able to document spatial and temporal (seasonal and annual) trends and some impacts. Also, we were able to identify additional taxa that may serve as good candidates for impact indicators in future environmental studies/analyses. However, some readjustments in the sampling design are desirable based on the experience of the last 18 years.

Environmental monitoring is intended to provide data for the detection of impact (should it occur) and to provide a baseline for restoration in the event of an impact. An impact may be associated with clearly defined temporal and spatial events, such as construction and post-construction stages, in which case clearly defined periods can be tested as "before" and "after" categories facilitating statistical testing. Impacts may also be associated with less clearly defined temporal and spatial events, such as relatively small, chronic oil spills. The gradual changes occasioned by this type of event are much more difficult to detect and require long, continuous periods of sampling to develop trend analyses. In the case of the LOOP project, the most important reason for monitoring is to provide a continuous baseline of the status of the environment as a precaution against a future catastrophic event. A continuous baseline of data preceding a catastrophic event is a necessary condition to determine impact and the measures necessary for mitigation and restoration. For example, continued environmental monitoring is necessary because it has been predicted that: an average of between 3,740 and 5,400 barrels/yr would be spilled; that within a 24-year period there would be a single spill of at least 10,000 barrels of oil; and that a maximum credible spill of 240,000 barrels will occur once over a period greater than 50 years (DOT, USCG, 1976). While the LOOP record of accidental oil spills is below these prediction levels, the oil risk estimates point to the need for credible pre-spill baseline data. Furthermore, a number of our significant or marginally significant test results are explained by strong seasonal and annual abundance changes through time (Before-After or During-After effects or Control-Impact-Year and Control-Impact-Year-Season interactions). The presence of such abundances trends only reinforce the dynamic properties of this unique and productive deltaic system and the need to continue to monitor and track how the ecosystem is changing/evolving through time.

In addition, the extent and importance (historically, culturally, and economically) of our renewable fisheries resources to Louisiana and the nation should not be taken for granted, nor their fragility underestimated, if they are to be sustained for future generations. The coastal marshes of Louisiana are one of the most productive ecosystems in the world, supporting a wide variety of estuarine-dependent organisms. Louisiana leads fishery production within the northern Gulf of Mexico and is second only to Alaska among all states. The fish community of the Barataria Bay estuarine system is the most diverse of any estuary in Louisiana with 191 species from 68 families (Condrey et al. 1995).

Bearing in mind the responsibility above and the experience the last 18 years has brought, we formulate the following sampling program. We recommend reducing the number of sampling gears from 4 to 3, the number of sampling protocols from 6 to 3, and the total number of sampling stations from 98 (throughout the history of the study or from 19 - 21 in recent years) to a total of 14. The following monthly sampling stations should be maintained: pipeline and Clovelly Storage Dome Impact stations 7, 15, and 38 and Control 12, 13, and 14 - all HL sampling stations; Diffuser Impact station 36 and Control 21 and 22 - all OM sampling stations; and LOOP Offshore Terminal Impact stations 55 (OM) and 708 (BH) with Controls 52 (OM), 704, and 706 (both BH). These stations have the strongest continuous data sets and are, therefore, in the best position to accomplish EMP Objectives 1 through 4. If the Brine Diffuser pumping schedule is expected to remain at current low levels, then Brine Diffuser sampling could possibly be discontinued, which would further lower the total number of stations sampled to 11. All station sampling should be replicated a minimum of 3-5 times so as to better estimate the within station variability and thereby increase the power and resolution of statistical analyses, which is in furtherance of EMP Objectives 2 and 3.

Monthly samples should be collected each year (with extreme care taken toward ensuring long-term preservation) but routinely worked up (taxonomically) every other year. This complete sample sorting and identification of all larval fish and the commercially-important decapods (i.e., *Penaeus* spp., *Callinectes* spp., and *Portunus* spp.) and zooplankton biomass estimation (from displacement volume methodology) would be available for an alternating year time series (trend connection) going back to the present 18 year data set. At the same time the availability of archived samples would insure that at any given point in time, if there were to be a major oil spill or another catastrophic event, the subsequent BACI statistical analyses would have at least a two-year Before period of available samples. The BACI statistical design would also greatly benefit from the increased power that the station sample replication would bring to bear, which is in furtherance of all EMP Objectives.

Supporting environmental data are needed to supplement/complement the zooplankton and ichthyoplankton sampling program. Monthly water column profiles at each station for temperature, salinity, conductivity, turbidity, and dissolved oxygen and surface estimates for chlorophyll are needed. In addition, brine and oil spill data for inshore (Clovelly Storage Dome) and LOOP Brine Diffuser and Offshore Terminal sites are needed for future analyses as covariates, which are in furtherance of EMP Objectives 1 through 4. Moored current meter arrays around the Offshore Terminal are needed to guide adaptive zooplankton and ichthyoplankton sampling responses to predicted major offshore oil spills, which would be in furtherance of EMP Objective 3.

Resource managers need to formulate a specific oil spill response plan for the Offshore Terminal that would include sampling at the long-term monitoring stations in that area at an increased frequency and with additional replication (EMP Objective 2). In addition, any new construction or planned discharge scenario should have an adequate Before sampling data collection period (2-3 years of pre-Impact data collection) in furtherance of EMP Objectives 1 through 4.

DATA ANALYSIS OF THE LOOP MARINE AND ESTUARINE MONITORING PROGRAM, 1978-95

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INTRODUCTION

Louisiana Offshore Oil Port

The Louisiana Offshore Oil Port (LOOP) facilities in coastal Louisiana provide the United States with the country's only superport for off-loading deep draft tankers. The facilities are located in Lafourche Parish in southeast Louisiana, south of New Orleans and adjacent offshore waters west of the Mississippi River Delta. The development is operated by LOOP LLC., a private corporation owned by Shell Oil Company, Texaco Inc., Ashland Inc., Murphy Oil Corporation, and Marathon Pipeline Company.

LOOP INC., (later restructured as LOOP LLC) was organized in 1972 as a consortium of companies to design, construct, and operate a deepwater port on the Louisiana coast. Pre-permit baseline studies related to the proposed development were conducted from 1972 to 1975. Major documents related to these studies are listed in the Appendix I. State and federal licenses to own and operate a deepwater port were issued in January 1977, and accepted on August 1 1977. The state license was issued to LOOP pursuant to the Louisiana Offshore Terminal Act (LA R.S. 34:3101 et seq.). A federal License to Own, Construct and Operate a Deepwater Port was issued to LOOP by the U.S. Department of Transportation (USDOT) pursuant to the federal Deepwater Ports Act (33 U.S.C. 1501, et seq.).

Facility Description

The superport complex consists of a marine Offshore Terminal (Figure 1; Station 708) located about 30 km from the mainland in the Gulf of Mexico, an onshore storage facility at the Clovelly Storage Dome near Galliano about 50 km inland from the coast (Station 38), and a large diameter pipeline system including a pumping booster station near Fourchon onshore to deliver oil to the storage facility. A small-boat harbor and logistics facility are located at Port Fourchon, on Bayou Lafourche. The pipeline system also connects the Clovelly Storage Dome to transportation facilities on the Mississippi

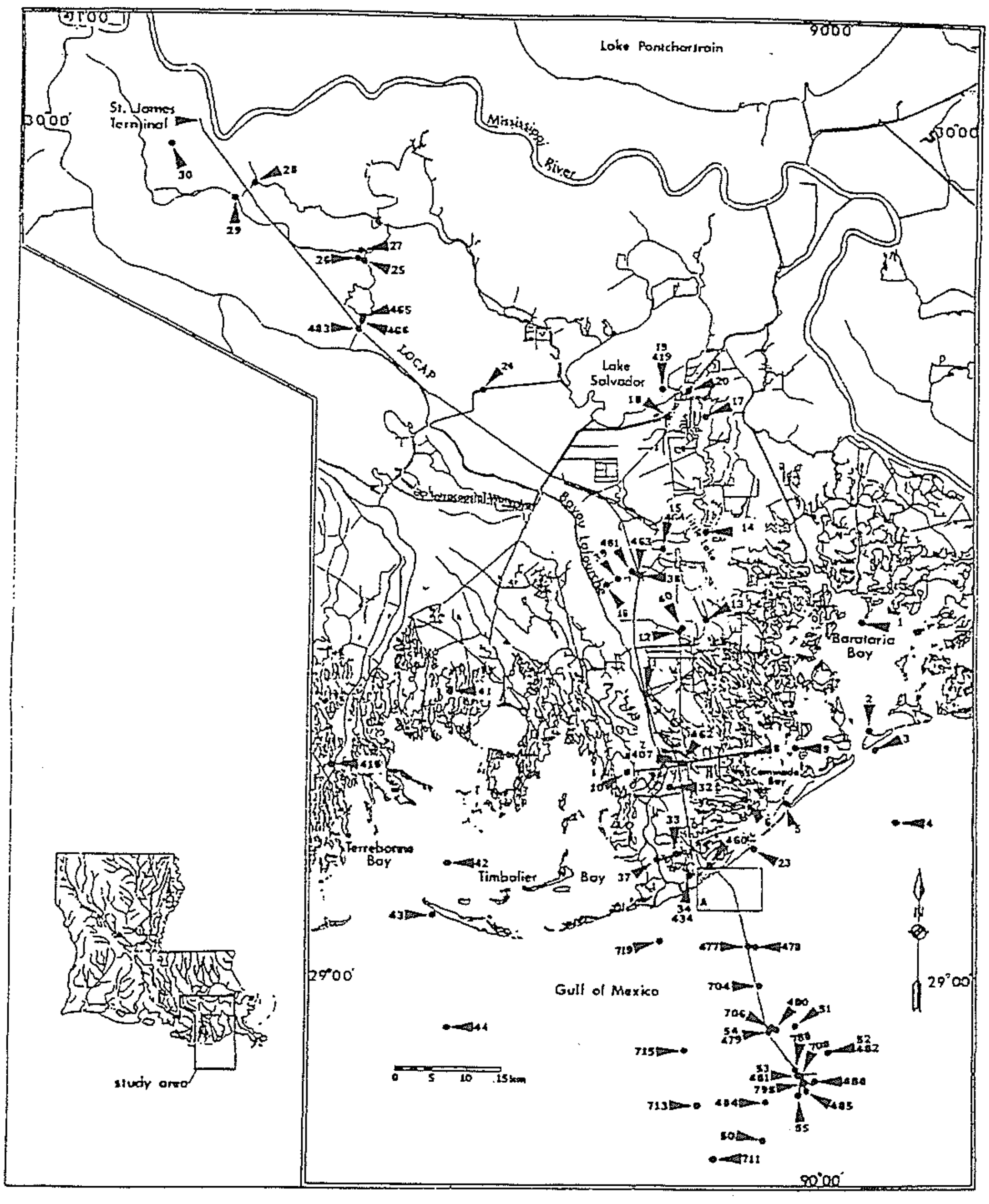

Figure 1. General map of the study area including the alignment of the LOOP (and LOCAP) pipelines. Zooplankton and ichthyoplankton stations are indicated by arrow and number. (scale = 1:494,000). Box A represents the LOOP Brine Diffuser area and is shown in detail in Figure 2. Modified after Hanifen et al. (1987; Figure 1.2).

River. A large brine storage reservoir (101 ha) is positioned near the Clovelly Storage Dome. Crude oil is stored in eight caverns excavated from a salt dome. By 1983 the facility had a capacity to off-load 1.4 million barrels/day from 200 ships/yr (Broussard 1984). The total movement of oil into the US in 1987 by sea was 6.3 million barrels/day (Kennish 1997:100). The first off-loading of oil onto the LOOP Offshore Terminal was on 5 May 1981 (1.5 million barrels of Saudi Light) and the Clovelly Storage Dome was in service by December 1981.

The marine terminal consists of three Single Point Mooring (SPM) structures connected by pipelines to a platform-mounted pumping station in the Gulf of Mexico, 30 km southeast of Belle Pass, Louisiana. Water depth at the platform is 36 m. From the Offshore Terminal facility, crude oil is pumped northward through a large diameter (56 inch) buried pipeline, through the onshore booster station at Fourchon, to the Clovelly Storage Dome near Galliano. The crude oil is stored in caverns constructed in subterranean salt domes. These storage chambers were formed by solution mining utilizing local surface water in the area. A second pipeline extends southward parallel to the oil pipeline and carries brine leached from the Clovelly Storage Dome to the Brine Diffuser disposal site (Figure 1; Station 36) located in open Gulf of Mexico waters approximately 4.8 km (3 mi.) offshore and adjacent to the LOOP oil pipeline. Additional distributary pipelines move oil from the Clovelly Storage Dome to outlying pipelines and refining centers.

Project Area

The Barataria estuary and the offshore area in which LOOP is located in an extremely diverse and complex natural system. It is located in the Mississippi River Deltaic Plain region. This region was formed and is continually influenced by processes associated with the deposition of massive amounts of sediments carried by the Mississippi River. The LOOP pipeline traverses the major wetland habitats in the Louisiana coastal area. The 159-km pipeline crosses the near-offshore Gulf of Mexico, beach/barrier headland, and estuary. Within the estuary, four salinity zones - saline, brackish, intermediate and fresh - are traversed, each providing a unique habitat supporting a variety of species.

The coastal marshes of Louisiana are one of the most productive ecosystems in the world, supporting a wide variety of estuarine-dependent organisms. Louisiana leads fishery production within the northern Gulf of Mexico and is second only to Alaska among all states (NMFS 1997). Louisiana is the leader in the United States for the production of shrimp, blue crab, oyster, crawfish, tuna, red snapper, wild catfish, black drum, sea trout, and mullet (McKenzie et al. 1995). Ninety-five percent of the Louisiana fish and shellfish landings are estuarine-dependent species (McKenzie et al. 1995). The fish community of Barataria estuary is the most diverse of any estuary in Louisiana with 191 species from 68 families (Condrey et al. 1995).

Monitoring Program

In recognition of the potential for significant environmental impacts, much attention was given to environmental safeguards by state and federal agencies and by the superport developers (see review by Sasser et al. 1982). The proposed construction and use of these facilities led to questions about various consequential environmental impacts arising from the following activities: (1) creation of the salt dome storage facility required solution mining of storage caverns within the Clovelly Storage Dome and the creation of a 101-ha brine storage area (brine is pumped back into the storage cavity to maintain the integrity of the caverns, as well as to float the oil back out) and would result in freshwater (used to excavate the salt dome) bypassing the estuary on its way to the offshore disposal site; (2) the brine (average 200 ppt) and other leachates are discharged 4.8 km offshore at the Brine Diffuser facility (Figure 2; Station 36) into a major US fishing zone; (3) creation of a pipeline corridor and subsequent related activities resulting in direct and indirect wetland losses and possible changes in hydrology; (4) subsequent logistical or economic activities during and after facility operations; and (5) small and large oil spills. Because of the potential risks associated with the construction and operation of the superport (e.g., bringing the world's largest oil tankers to one of the most productive fisheries resources in the world), both state and federal licenses required

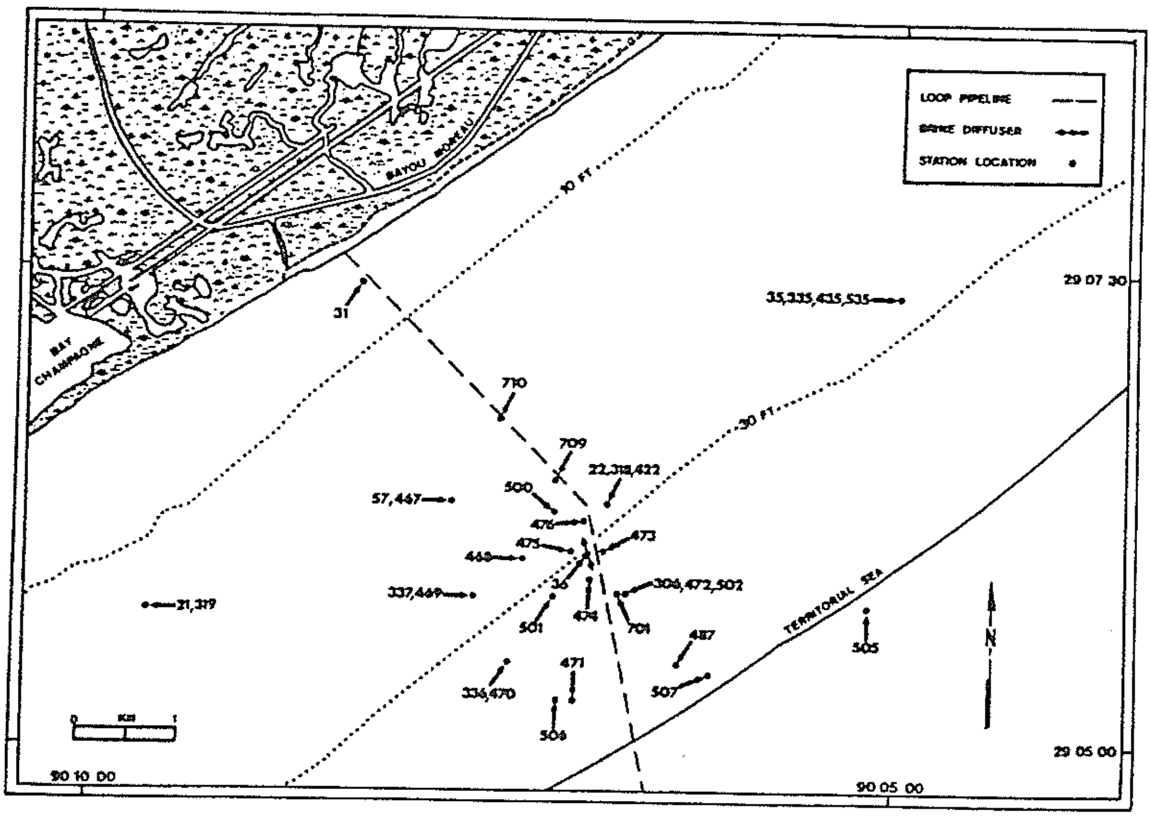

Figure 2. Zooplankton and ichthyoplankton sampling stations in the vicinity of the LOOP Brine Diffuser (Station 36) off the central Louisiana coast. (scale = 1:51,000). Modified after Hanifen et al. (1987; Figure 1.3).

environmental monitoring of LOOP construction and operational activities. The environmental monitoring program (EMP) was developed under mandate of the Superport Environmental Protection Plan (revised, 1977), a regulation of the State of Louisiana implementing the Offshore Terminal Act. Components of the estuarine/marine monitoring program include: water chemistry, physical hydrography, brine discharge, zooplankton/ichthyoplankton, demersal nekton, benthos, and sediment quality. The Louisiana Department of Wildlife and Fisheries (LDWF) collected the data related to these components from 1978 to 1995. Vegetation and wildlife components were monitored by Louisiana State University's Center for Wetland Resources and the Center for Coastal, Energy, and Environmental Resources in Baton Rouge. This report is the zooplankton and ichthyoplankton component in a series of five reports that analyze of the impacts of LOOP construction, operation, and maintenance on the estuarine/marine environment. These five reports analyzed the following components: 1) Water Chemistry, 2) Physical Hydrography, 3) Zooplankton / Ichthyoplankton, 4) Demersal Nekton, and 5) Sediment Quality.

Study Objectives

The objectives of this analysis are directly related to the original objectives of the LOOP, Inc. Environmental Management Plan (EMP 1986: section 3.1, page 8), which were:

(1) to obtain seasonal environmental and ecological data so that conditions existing during operation can be related to historical baseline conditions;

(2) to detect during the operation of the project any adverse alterations or damages to the environment so that corrective action can be taken as soon as possible;

(3) to obtain sufficient data to determine the cause of environmental damages or alterations so that responsibility can be properly placed; and,

(4) to provide information in order to evaluate long- and short-term impacts of the project.

The general objectives of this analysis are to determine if the monitoring data, i.e., zooplankton/ichthyoplankton (and supporting environmental data) are useful to meet these EMP objectives. The specific objectives are:

(1) to determine if the monthly, seasonal and annual data obtained thus far are useful for the purposes of monitoring;

(2) to determine if adverse or damaging environmental impacts occurred;

(3) to determine the cause of environmental damage or alterations; and

(4) to evaluate long- and short-term impacts of the project.

Therefore, the main effort of Task 2 is to conduct appropriate statistical analyses on the existing data collected by LDWF from 1978-1995 to determine the impact (i.e., test the null hypothesis of no difference or no impact) of LOOP construction and operation on the estuarine and inner continental shelf zooplankton and ichthyoplankton by testing whether the temporal trends at the monitoring impact stations are the same as in the control areas. This is tested with the TIME x TREATMENT interaction term in a standard Before-After, Control-Impact (BACI) design (Underwood 1994). The general null hypothesis (H_o) and alternate hypothesis (H_a) are given as:

$$H_o: \mu_{CB} - \mu_{IA} = \mu_{CA} - \mu_{IB}$$

$$H_a: \mu_{CB} - \mu_{IA} \neq \mu_{CA} - \mu_{IB}$$

where: μ_{ij} = the population mean of a parameter for a given treatment-effect (ij) combination; C = control station treatment; I = impact station treatment; B = time period before impact; and A = time period after impact. However, all tests were not limited to the BACI design. In the absence of the appropriate Before data set(s), we conducted a During-After, Control-Impact statistical design and in one case simply a Control-Impact design.

Zooplankton and Ichthyoplankton Literature Review

The marine fauna of the northcentral Gulf of Mexico has generally been considered a disjunct component of the warm temperate Carolinian biogeographical province (Hedgpeth 1957; Briggs 1974). A tropical faunal component in the region has also been recognized by a number of workers and is believed to be expatriated from the Caribbean (Dennis and Bright 1988).

The study of marine and estuarine plankton is of ecological interest because they fulfill an important function in the structuring of marine food webs (Raymont 1983). In addition, plankton are often useful as "indicators" of water quality as a result of their known physical and chemical tolerances and vulnerability to many natural and anthropogenic disturbances (Bratkovich 1988). Furthermore, distinct plankton assemblages have been recognized as characteristic communities associated with specific water-mass types (Robinson et al. 1986 and references therein) or environments.

Virtually all of the commercially- and recreationally-important marine fisheries resources in the northern Gulf of Mexico are "nearshore-dependent" or "inshore-dependent" (Gunter 1967; 1980), which means that some portion of their life cycle is directly or indirectly linked to inshore ecosystems for reproduction (as spawning or nursery areas), migration, or feeding. Given a sufficient number of spawning adults, the potential population size of these species is controlled most strongly by conditions affecting reproduction and nursery areas (NMFS 1992). This is because most marine fish and shellfish die during their larval and early juvenile stages (approx. 99.99%). Therefore, the ultimate population size of most marine species is determined largely by surviving the "critical period" (Lasker 1981) experienced during their early developmental stages within their nursery areas.

Information on distributional and temporal patterns of holoplankton and the planktonic stages of shellfish and finfish is important for a better understanding of ecological/trophic dynamics and for the future management of Louisiana's valuable fisheries. Zooplankton research in the shelf waters of the northcentral Gulf of Mexico has been reviewed by Hopkins (1973) and Iverson and Hopkins (1981). However, current knowledge of how these biological resources relate to dominant physical/chemical parameters at large temporal (i.e., years) or spatial scales, is limited. With the notable exception of Arnold (1958) and possibly Czapala et al. (1991), most zooplankton studies have been short-lived and site-specific or conducted within state waters (Davis 1950; King 1950; Cuzon du Rest 1963; Gillespie 1971; Perry and Christmas 1973; Angelovic et al. 1976; Park et al. 1976; Park 1977, 1979; Barrett et al. 1978; Marum 1979; Minello 1980; Park and Minello 1980; Steen and Gunter 1980; Vecchione et al. 1982, 1983; Wolff et al. 1984; Dagg 1988; Rogers et al. 1993). A similar argument can be made for most ichthyoplankton studies (Finucane 1976; Finucane et al. 1977, 1979a, 1979b; Wolff et al. 1984, 1985; McGowan 1985; Shaw et al. 1985a, 1985b, 1988; Cowan and Shaw 1988, 1991; Govoni et al. 1989; Shaw and Drullinger 1990a; Grimes and Finucane 1991; Lang et al. 1994). Geographical exceptions include Sogard et al. (1987) and Al-Yamani (1988), and temporal exceptions include those analyses utilizing gulf-wide NOAA/NMFS Southeast Area Monitoring and Assessment Program (SEAMAP) data, e.g., Richards et al. (1984), Kelley et al. (1986, 1993), Eldridge (1988), Shaw and Drullinger (1990b), Ditty and Shaw (1992, 1993, 1995), and Ditty et al. (1994a, 1994b, 1994c), and data from the Louisiana-Texas shelf (Shaw et al. 1997).

In addition to the LDWF quarterly and annual progress reports, publications to date that have utilized LOOP environmental monitoring data on zooplankton and ichthyoplankton include Ditty (1986, 1991), Ditty et al. (1988), and Power and Zieske (1989). In addition, LDWF has reported LOOP project data on zooplankton and ichthyoplankton collected at inshore stations from March 1978 to February 1982 and at offshore stations through November 1982 (Ditty et al. 1987). Their construction and brine monitoring field sampling data indicated a high degree of spatial and temporal variability for copepods, *Penaeus* spp. (shrimp) postlarvae, *Callinectes sapidus* (blue crab) megalopae, and fish larvae. A similar high degree of temporal, spatial, and vertical variability was subsequently seen within LOOP data set analyses involving comparisons of monthly estimates of zooplankton biomass (ml/m^3) from 1993 with long-term (1983-1992) monthly means with 95% confidence intervals (C.I.) (Kasprzak et al. 1994). In a more detailed analysis, 1995 zooplankton biomass, larval fish and commercially-important postlarval and megalopal decapod densities ($no./100m^3$) were compared to long-term (1982-1994) monthly means (with 95% C.I.; Kasprzak et al. 1996). Seasonality, species composition, and spatial and vertical distributions of the most abundant larval fish species and families, e.g., *Brevoortia patronus* (gulf menhaden), *Chloroscombrus chrysurus* (Atlantic bumper), *Leiostomus xanthurus* (spot), *Cynoscion arenarius* (sand seatrout), f. Engraulidae (anchovies), f. Synodontidae (lizardfishes), f. Blenniidae (combtooth blennies), and f. Gobiidae (gobies), and a number of commercially-important decapod crustacean species, e.g., *Penaeus aztecus* (brown shrimp) postlarvae and *Callinectes sapidus*, *C. similus* (lesser blue crab) and *Portunus* spp. megalopae, were also reported. The selection criteria for the zooplankton taxonomic categories listed above were based on economic value (i.e., commercial and recreational importance), available zooplankton identification expertise, time constraints, and availability of funding for sample processing.

METHODS

Field Sampling Procedures

Primary references used to determine appropriate sampling methodologies for the project, standard zooplankton field sampling devices, and procedures for sample preservation, curation, and laboratory analysis included Tranter (1968), Kramer et al. (1972), Steedman (1976), Smith and Richardson (1977), Jossi and Marak (1983), and Omori and Ikeda (1984).

Over the course of the zooplankton and ichthyoplankton field sampling program (February 1978 to December 1995), a total of 81 plankton sites (98 stations) were sampled at one time or another at environments ranging from freshwater to mid-continental shelf (Table 1). Four (4) sampling gears and six (6) different sampling protocols were employed over the duration of the study. To examine the potential impacts of floating oil, surface tows were taken at inshore and offshore stations. In deeper offshore waters, bongo nets were used to sample zooplankton and ichthyoplankton occupying various divisions of the water column where effects of aged and dispersed oil would most likely occur. Prior to August 1987 a mechanical, rotor-type flowmeter (General Oceanics Model 2030R) was attached to the mouth of the nets to measure volume of water filtered. Thereafter an external gear-train, 4-dial-counter flowmeter (Kahl Scientific Co. Model 005WA200) was employed.

Half-meter diameter, conical plankton nets (Sea-Gear Corp.) were towed at the surface for one minute at a speed of 1 m/s (2 knots) at all inland (freshwater and estuarine) stations. At the freshwater stations (i.e., 24-30; Figure 1) net mesh size was 0.08 mm. This sampling gear/protocol will be designated hereafter as Half-meter Small mesh, or HS. At all other inland stations the 0.5-m net mesh size was 0.153 mm (Half-meter Large mesh, or HL). Three inland stations, 37, 38, and 483, were also sampled with a one-meter diameter plankton net.

All One-Meter (OM) nets had 0.363-mm mesh and were towed horizontally at the surface for 3-5 minutes depending upon plankton abundance. Marine stations right along the coast (depth < 4 m) utilized the HL methodology, while most "Near-Offshore" stations (4 m < depth < 13 m) and "Far-Offshore" stations (14 m < depth < 37 m) were sampled utilizing both HL and OM methodologies for at least some time period. Exceptions to this generality include: (1) Near-

Table 1. Station coordinates, descriptions and environmental characterization and sampling durations, frequencies, and gear used at the 81 zooplankton and ichthyoplankton locations (98 stations) that were sampled at one time or another over the course of the monitoring interval (February 1978 to December 1995). Station numbers within parentheses are either at the same or equivalent (≈) locations. Start and end dates reflect actual computerized data availability and do not include data or identification gaps. Imbedded within these data time lines, but not shown, are various implementation dates for analyzing zooplankton samples only from the "target months" (i.e., Jan., Feb., Apr., Jun., Jul., Sep., and Nov.) which varied by station and/or gear type (see text for further explanation). Zooplankton settled or displacement volumes, however, may have been recorded after the faunal identification end dates.

Sta. No.	Coordinates		Description of Approximate Location	Envir. Code[1]	Avg. Depth (m)	Sampling			
	Latitude	Longitude				Start	End	Frequency[2]	Gear Type[3]
1	29°25'11"	89°56'49"	Barataria Bay, 1.4 km SW of St. Mary's Pt. (data gap from 9/83-1/84)	IS IE	1.8	2/78	11/85	M	HL
2	29°17'22"	89°55'49"	Grand Terre, 275 meters N of Fourchon Booster Station located on back beach (data gap from 9/83-1/84)	IS IE	2.4	2/78	11/85	M	HL
3	29°16'18"	89°55'58"	Grand Terre, 300 meters S of front beach, near Barataria Pass (data gap from 9/83-1/84)	IS LE/TP	3.1	2/78	11/85	M	HL
4	29°11'00"	89°54'00"	Offshore, 275 meters SW of Freeport Sulfur Platform (data gap from 9/83-1/84)	HS NO	12.2	2/78	6/85	M	HL
5	29°12'21"	90°02'44"	Caminada Pass, midchannel 45 meters SW of LA. Highway 1 bridge	IS LE/TP	3.7	2/78	12/95	M	HL
6	29°12'37"	90°06'18"	In channel between Lake Palourde and Bay Macoin, 180 meters W of Bayou Ferblanc	IS LE	2.7	2/78	1/82	M	HL
7 (407) (≈462)	29°15'18"	90°11'22"	Middle of Lake Jesse, 23 meters E of the ship channel and 600 meters NW of Southwest Louisiana Canal	IS LE	1.8	2/78	12/95	M	HL

8	29°15'54"	90°06'14"	Mouth of Southwest Louisiana Canal, at Bay Lizette	IS LE	1.8	2/78 1/95	1/82 12/95	M	HL
9	29°16'12"	90°01'56"	Caminada Bay, 27 meters W of Bayou Andre channel light	IS LE	1.8	2/78	12/81	M	HL
10	29°14'39"	90°15'37"	Little Lake, 9 meters W of Marker #1, near entrance of Southwest Louisiana Canal	IS LE	2.4	5/78 1/95	1/82 12/95	M	HL
11	29°20'05"	90°14'18"	A Texaco canal, midchannel, 180 meters E of intersection with Bayou Lafourche but W of LOOP pipeline	LS IE	2.4	7/78	12/81	M	HL
12 (≈40)	29°24'34"	90°11'37"	At intersection of a Tennessee Gas Transmission canal and unnamed navigation canal, 1.7 km N of Yankee Canal	LS IE	1.8	7/78 12/91	3/88 5/94	M	HL
13	29°25'24"	90°09'24"	King's Ridge at old bed of Bayou L'Ours	LS IE	1.5	7/78	5/94	M	HL
14	29°31'47"	90°09'53"	Little Lake, 4 km N of Plum Point, near freshwater injection platform in Exxon/Little Lake Oil and Gas Field	LS UE	2.1	3/78	11/95	M	HL
15 (≈464)	29°30'13"	90°12'58"	Bay L'Ours at mouth of Superior Canal, near Daymarker #2	LS UE	1.8	5/78	11/95	M	HL
16	29°28'10"	90°16'53"	Breton Canal, 475 meters W of Bayou Raphael, near pumps on southside of canal at Tidelands Country Club; when canal dammed sta. 39 created in 9/85	LS UE	2.4	5/78	8/85	M	HL
17	29°39'57"	90°09'44"	Bayou Perot, 325 meters E of Delta Farms Oil and Gas Field, 4 km SE of intersection with Intracoastal Waterway	LS UE	1.5	3/78	1/82	M	HL

18	29°39'34"	90°12'52"	Intracoastal Waterway, 2.4 km SW of intersection with Bayou Perot	LS UE	3.1	7/78	11/95	M	HL
19 (419)	29°41'27"	90°13'15"	Lake Salvador, 3.2 km WNW of intersection of Intracoastal Waterway and Bayou Perot	LS UE	1.8	5/78	1/82	M	HL
20	29°41'54"	90°10'39"	Intracoastal Waterway, 900 meters NE of intersection with Bayou Perot	LS UE	3.1	5/78	6/78	two dates	HL
21	29°05'42"	90°09'39"	Offshore, 45 meters NW of Chevron Platform BM 119	HS NO	7.6	4/78 10/80	7/86 12/95	M	HL OM
22 (422)	29°06'16"	90°06'47"	Offshore, 45 meters NW of Chevron Platform GI 25 14	HS NO	11.0	4/78 11/80	7/86 12/95	M	HL OM
23	29°09'18"	90°05'42"	Front Beach, 8 km ENE of mouth of Bay Champagne at Bayou Moreau	IS LE	3.1	6/78	6/78	single date Q	HL
24	29°41'32"	90°28'03"	Company Canal, 750 meters NE of LA. Highway 654 at bend in canal	F	1.5	8/78	12/81	Q	HS
25	29°49'48"	90°37'19"	Bayou Boeuf, 450 meters S of intersection with Grand Bayou	F	2.4	8/78	12/81	Q	HS
26	29°49'55"	90°38'05"	Halpin Canal, 225 meters SW of Bayou Boeuf	F	1.8	8/78	12/81	Q	HS
27	29°51'11"	90°37'51"	Grand Bayou, 250 meters NNW of intersection with Bayou Boeuf	F	2.1	8/78	12/81	Q	HS
28	29°55'48"	90°44'50"	Bayou Chevreuil, at intersection with unnamed canal, 150 meters NW of intersection of Bayou Chevreuil and Dredge Boat Canal	F	2.4	8/78	12/81	Q	HS
29	29°54'49"	90°47'54"	Bayou Citamon, near intersection with Grand Bayou	F	2.4	8/78	12/81	Q	HS
30	29°58'16"	90°52'09"	St. James Canal, at intersection with unnamed canal 320 meters NE of Bayou Traverse	F	3.1	8/78	12/81	Q	HS
31	29°07'26"	90°08'20"	Front Beach, near LOOP pipeline	IS	3.1	9/78	1/82	M	HL

			crossing, 2.3 km NE of mouth of Bay Champagne	LE/TP					
32	29°13'32"	90°12'08"	A Texaco canal, mid-channel, 2.9 km S of Southwest Louisiana Canal and 1 km E of Bayou Lafourche	IS LE	2.7	3/79	1/82	M	HL
33	29°08'53"	90°12'09"	Flotation canal, 350 meters W of impoundment outfall pipe and 1.9 km ENE of intersection with Bayou Lafourche	IS LE	3.1	3/79	1/82	M	HL
34 (434)	29°07'14"	90°10'22"	In unnamed canal 290 meters WNW of intersection with Bay Champagne, at Chevron pipeline cross	IS LE/TP	1.8	3/79	12/95	M	HL
35/535 (435)	29°07'22"	90°05'00"	Offshore, 45 meters W of Hunt Platform GI 24 5 (OM id gap 12/89-8/94)	HS NO	10.8	9/79 9/80	7/86 12/95	M	HL OM
36 (≈475)	29°06'00"	90°06'54"	Offshore, midpoint of LOOP Brine Diffuser	HS NO	11.0	2/80 8/80	7/86 12/95	M	HL OM
37	29°08'30"	90°13'16"	Bayou Lafourche, at flotation canal, 2.8 km N of LOOP small boat harbor	IS LE/TP	3.1	1/80 5/86	12/95 12/95	M	HL OM
38 (≈463)	29°28'28"	90°15'18"	Clovelly Storage Dome, at freshwater intake	LS UE	2.0	2/80 7/94	12/95 7/94	M single date	HL OM
39	29°28'23"	90°16'11"	Breton Canal, 30 meters E of Hurricane Protection levee; station created when canal dammed between sta.'s 16 and 38; (data gap from 9/88 to 2/89)	LS UE	2.0	9/85	11/95	M	HL
40 (≈12)	29°24'26"	90°11'11"	800 meters E of intersection of Tennessee Gas Transmission canal and unnamed navigational canal, 1.7km N of Yankee Canal	LS IE	1.8	4/88	11/91	M	HL
41	29°20'08"	90°30'00"	Middle of Lake Tambour	IS LE	1.8	2/78	2/84	M	HL

42	29°08'40"	90°30'30"	Terrebonne Bay, 1000 meters W of Terrebone Island	IS LE/TP	2.1	2/78	2/84	M	HL
43	29°04'12"	90°31'30"	Off front beach, 1100 meters SW of western tip of Timbalier Island	IS LE/TP	2.4	2/78	2/84	M	HL
44	28°55'54"	90°31'30"	Offshore, 13.4 km S of Timbalier Island	HS NO	9.2	2/78	2/84	M	HL
50	28°48'32"	90°04'35"	Offshore, 700 meters SE of Continental Oil Platform CAGC GI 63 A	HS FO	37.0	6/78 6/79	9/79 12/79	Q two dates each	HL OM
51	28°56'42"	90°01'51"	Offshore, 900 meters SE of Continental Oil Platform CAGC GI 47 A AQ	HS FO	28.0	9/79 6/79	9/79 12/79	single date Q two dates	HL OM
52 (482)	28°54'48"	89°59'05"	Offshore, 4.8 km NE of LOOP Offshore Terminal	HS FO	34.0	6/80 2/82 6/80 5/82	12/81 8/86 12/81 12/95	Q M Q M	HL HL OM OM
53 (481)	28°53'06"	90°01'30"	Offshore, 90 meters NW of LOOP Offshore Terminal	HS FO	34.0	6/80 2/82 6/80 5/82	12/81 8/86 12/81 10/86	Q M Q M	HL HL OM OM
54 (479)	28°56'12"	90°04'07"	Offshore, 300 meters W of Continental Platform CAGC GI 48 K	HS FO	27.0	6/80 2/82 6/80 5/82	12/81 8/86 12/81 10/86	Q M Q M	HL HL OM OM
55	28°51'48"	90°01'31"	Offshore, 400 meters S of LOOP Offshore Terminal	HS FO	34.5	2/82 4/82	8/86 12/95	M	HL OM
407 (7) (≈462)	29°15'18"	90°11'22"	Middle of Lake Jesse, 23 meters E of the ship channel and 600 meters NW of Southwest Louisiana Canal	IS LE	1.8	5/80	8/80	two dates Q	HL
419 (19)	29°41'27"	90°13'15"	Lake Salvador, 3.2 km WNW of intersection of Intracoastal Waterway and Bayou Perot	LS UE	1.8	8/79	8/79	single date Q	HL

422 (22)	29°06'16"	90°06'47"	Offshore, 50 meters W of Chevron Platform GI 25 14	HS NO	11.0	8/79	4/80	two dates Q	HL
434 (34)	29°07'14"	90°10'22"	In unnamed canal, 290 meters WNW of intersection with Bay Champagne, at Chevron pipeline crossing	LS UE	1.8	8/79	8/80	three dates Q	HL
435 (35/535)	29°07'22"	90°05'00"	Offshore, 45 meters W of Hunt Platform GI 24 5	HS NO	10.8	8/79	9/80	five dates Q	HL
460	29°07'47"	90°08'45"	Bayou Moreau, 6 meters W of LOOP pipeline	IS LE/TP	2.4	5/80	8/80	two dates Q	HL
461	29°28'41"	90°15'53"	At intersection of unnamed canals, 500 meters W of LOCAP pipeline	LS UE	1.0	2/80	8/80	two dates Q	HL
462 (≈7) (≈407)	29°15'17"	90°11'46"	Lake Jesse near LOOP pipeline, 90 meters from W bank	IS LE	0.9	5/80	8/80	two dates Q	HL
463 (≈38)	29°28'32"	90°15'19"	Clovelly Storage Dome, 50 meters N of freshwater intake, at canal entrance	LS UE	1.7	2/80	8/80	two dates Q	HL
464 (≈15)	29°30'07"	90°13'03"	Mouth of Superior Canal at Bay L'Ours	LS UE	2.7	8/80	8/80	single date Q	HL
465	29°46'42"	90°37'42"	Theriot Canal, 640 meters N of Monterey Oil Co. gas pipeline and 90 meters S of mouth at Lake Boeuf	F	1.1	1/80	1/80	single date Q	HL
466	29°46'26"	90°37'46"	Theriot Canal, 90 meters S of Monterey Oil Co. gas pipeline and 1.6 km N of intersection with Halpin Canal	F	1.4	1/80	8/80	three dates Q	HL
467*	29°06'17"	90°07'45"	Offshore, 50 meters W of Chevron Platform BMI 54	HS NO	8.8	3/81	11/81	two dates Q	OM
468*	29°05'59"	90°07'18"	Offshore, 50 meters W of Chevron Platform GI 25 16	HS NO	9.8	3/81	11/81	two dates Q	OM
469*	29°05'47"	90°07'36"	Offshore, 50 meters W of Chevron Platform GI 25 19	HS NO	9.5	3/81	11/81	two dates Q	OM

470*	29°05'26"	90°07'23"	Offshore, 50 meters W of Chevron Platform GI 25 SE	HS NO	10.4	3/81	11/81	two dates Q	OM
471*	29°05'14"	90°06'58"	Offshore, 50 meters W of Chevron Platform GI 26 P	HS NO	12.2	3/81	11/81	two dates Q	OM
472* (≈502)	29°05'48"	90°06'39"	Offshore, 50 meters W of Chevron Platform GI 25 13	HS NO	11.0	3/81	11/81	two dates Q	OM
473*	29°06'01"	90°06'48"	Offshore, 150 meters E of Brine Diffuser	HS NO	8.8	3/81	11/81	two dates Q	OM
474*	29°05'52"	90°06'53"	Offshore, 150 meters S of Brine Diffuser	HS NO	8.8	4/80	4/80	single date Q	OM
475* (≈36)	29°06'01"	90°07'00"	Offshore, 150 meters W of Brine Diffuser	HS NO	9.5	1/80	11/81	Q	OM
476	29°06'11"	90°06'55"	Offshore, 150 meters N of Brine Diffuser	HS NO	8.5	3/81	11/81	two dates Q	OM
477	29°02'09"	90°05'48"	Offshore, 30 meters W of LOOP pipeline at 15 meter depth contour	HS FO	15.2	4/80	11/81	Q	OM
478	29°02'09"	90°05'12"	Offshore, 800 meters E of station 477	HS FO	15.2	4/80	11/81	Q	OM
479 (54)	28°56'12"	90°04'07"	Offshore, 300 meters W of Continental platform CAGC GI 48K	HS FO	27.0	4/80	11/81	Q	OM
480	28°56'10"	90°03'35"	Offshore, 320 meters E of Continental platform CAGC GI 48K	HS FO	27.0	4/80	11/81	Q	OM
481 (53)	28°53'06"	90°01'30"	Offshore, 90 meters NW of LOOP Offshore Terminal	HS FO	34.0	4/80	11/81	Q	OM
482 (52)	28°54'48"	89°59'05"	Offshore, 4.8 km NE of LOOP Offshore Terminal	HS FO	34.0	4/80	11/81	Q	OM
483	29°45'57"	90°38'02"	Theriot Canal, 650 meters N of intersection with Halpin Canal	F	1.1	5/80	8/80	two dates Q	OM
484	28°51'04"	90°04'18"	Offshore, 4.8 km SW of LOOP Offshore Terminal	HS FO	34.0	8/80	11/81	four dates Q	OM
485	28°51'58"	90°00'55"	Offshore, midway between SPM 104	HS	37.0	8/80	11/81	four dates	OM

			and SPM 103	FO				Q	
486	28°52'45"	90°00'09"	Offshore, midway between SPM 103 and SPM 102	HS FO	34.0	8/80	11/81	four dates Q	OM
500	29°06'14"	90°07'06"	Offshore, 500 meters N of LOOP Brine Diffuser	HS NO	9.0	9/81	12/83	M	BS
501	29°05'47"	90°07'06"	Offshore, 500 meters W of LOOP Brine Diffuser	HS NO	9.0	9/81	12/83	M	BS
502 (≈472)	29°05'50"	90°06'41"	Offshore, 500 meters S of LOOP Brine Diffuser	HS NO	10.0	9/81 1/84 8/86	12/83 12/95 12/95	M	BS BO OM
505	29°05'44"	90°05'10"	Offshore, 2.9 km SE of LOOP Brine Diffuser	HS NO	11.0	9/81	12/83	M	BS
506	29°05'14"	90°07'04"	Offshore, 1.4 km SW of LOOP Brine Diffuser	HS NO	10.0	9/81	12/83	M	BS
507	29°05'22"	90°06'08"	Offshore, 1.8 km S of LOOP Brine Diffuser	HS NO	11.0	8/83 9/81 8/83 1/84	8/83 12/83 8/83 7/86	single date M single date M	OM BS BO BO
535/35 (435)	29°07'22"	90°05'00"	Offshore, 45 meters W of Hunt Platform GI 24 5	HS NO	10.8	4/82 1/84	12/83 12/95	M	BS BO
701	29°05'48"	90°06'42"	Offshore, 300 meters SSE of LOOP Brine Diffuser	HS NO	9.7	8/83	8/83	single date	BO
704	28°59'46"	90°04'59"	Offshore, 11.9 km SSE of LOOP Brine Diffuser (BH data gap between 8/86-7/87)	HS FO	19.4	1/84 8/87	11/95 12/95	M	BH OM

706	28°56'30"	90°04'10"	Offshore, 7.6 km NNW of LOOP Offshore Terminal	HS FO	26.1	8/83 1/84 8/86	8/83 12/95 12/95	single date M	BHH BH OM
708	28°53'03"	90°01'30"	LOOP Offshore Terminal	HS FO	33.0	8/83 1/84 8/86	8/83 12/95 12/95	single date M	BHH BH OM
711	28°47'05"	90°08'46"	Offshore, 16.3 km SW of LOOP Offshore Terminal	HS FO	33.5	8/86 8/86	7/87 7/87	M	BH OM
713	28°50'57"	90°09'54"	Offshore, 14.3 km WSW of LOOP Offshore Terminal	HS FO	27.4	8/86 8/86	7/87 7/87	M	BH OM
719	29°02'34"	90°13'07"	Offshore, 4.3 km SSE of Belle Pass	HS NO	9.1	8/86 8/86	7/87 7/87	M	BO OM
788 (708N)	28°53'41"	90°01'42"	Offshore, 1 km NNW of LOOP Offshore Terminal	HS FO	32.6	8/83	8/83	single date	BHH
798 (708S)	28°52'32"	90°01'11"	Offshore, 1 km SSE of LOOP Offshore Terminal	HS FO	34.4	8/83	8/83	single date	BHH

1 Modified after Louisiana Department of Wildlife and Fisheries' environmental characterization codes: F = Fresh (<1 ppt); LS = Low Salinity (1-11 ppt); Intermediate Salinity (14-24 ppt); HS = High Salinity (≥ 24 ppt); UE = Upper Estuary; IE = Intermediate Estuary; LE = Lower Estuary; TP = Tidal Pass; NO = Near Offshore; and FO = Far Offshore.

2 M = monthly and Q = quarterly.

3 HS = Half-meter ring net, 0.080-mm net (Small) mesh, surface tow at approx. 1 m/s (2 knots) for 1 minute at upper estuarine freshwater stations.

HL = Half-meter ring net, 0.153-mm net (Large) mesh, surface tow at approx. 1 m/s for 1 minute at Upper Estuarine, Lower Estuarine, Near-offshore, and Far-offshore stations.

OM = One-Meter ring net, 0.363-mm net mesh, surface tow at approx. 1 m/s for 3-5 minutes at one estuarine station (37) and at Near-offshore, Far-offshore, and selected bongo stations 500, 501, 502, 505, 506, 507, 535, 701, 704, 706, 708, 711, 713, 719, 788, and 798.

BS = Bongo Stratified (corresponds to LDWF code TMB-BONG-H) = Bongo nets, 60-cm, opening and closing (Tareq and Co., Inc., Miami, FL - BNF-1 paired net frame), 0.363-mm net mesh, towed simultaneously at surface, mid- and near-bottom depths, at approx. 1 m/s for 3-5 minutes, at selected offshore stations.

BH = Bongo Half oblique (LDWF code TB-BONG-OBL) = Bongo nets, 60-cm, opening and closing (Tareq - BNF-1), 0.363-mm net mesh, simultaneous, stepped-oblique, half-water column tows (i.e., near-bottom to mid-depth and mid-depth to surface), tow speed approx. 1 m/s at selected offshore stations.

BHH = Bongo Half Horizontal (LDWF code TB-BONG-H) Bongo nets, 60-cm, opening and closing (Tareq - BNF-1), 0.363-mm net mesh simultaneously towed at 1 m/s horizontally at top and bottom of water column for 3-5 minutes at selected offshore stations.

BO = Bongo Oblique (LDWF code BONG-OBL) = Bongo nets, 60-cm, 0.363-mm net mesh towed at 1 m/s in a stepped oblique fashion throughout the whole water column at selected offshore stations.

* Due to proximity of these stations, only one plankton tow was taken at station 475 to cover all nearby stations (i.e., 467, 468, 469, 470, 471, 472, 473, 474, & 476) from 10/79 to 11/81. Note station 474 was actually sampled once.

Offshore stations 4, 44, 422, and 435 - HL sampling only; (2) Near-Offshore stations 467 to 476 and Far-Offshore stations 477 to 482 and 484 to 486 - OM sampling only; and (3) bongo net sampling stations, sometimes referred to as the "Plankton Transect Stations".

Four (4) bongo net methodologies were used during the study. All employed 60-cm diameter, 0.363-mm mesh nets attached to an opening and closing, paired net frame (Tareq and Co., Inc. - BNF-1 model) fitted with a flowmeter and towed at 1 m/s for 3-5 minutes depending upon plankton abundance and/or the station depth. General Oceanics double trip mechanisms (Model 1000-DT) were used to open and close the hinged net frame at starting and ending depths.

One of the methodologies or sampling protocols involved stepped-oblique bongo tows (referred to hereafter as BO = Bongo Oblique). The BO tows were taken through the whole water column (from near-bottom to the surface) with a single, paired net bongo frame which was deployed closed, opened at the surface, lowered in stepped increments to near the bottom, and then retrieved smoothly to the surface.

Another methodology involved two sets of bongo net frames and double trip mechanisms which were used to simultaneously sample the upper and lower portions of the water column in an oblique fashion (from mid-depth to surface and from one meter off the bottom to mid-depth). The net frames were deployed closed, opened at depth (surface and mid-depth), stepped down in increments to mid-depth and near-bottom, and then retrieved to their starting depths and closed. This methodology will be referred to as BH (Bongo Half oblique).

A third methodology involved three bongo frames with double trip mechanisms being simultaneously towed horizontally. These nets were opened and closed at the surface, mid-depth and near-bottom and are referred to as BS (Bongo Stratified). The fourth sampling protocol consisted of two bongo net frames with double trip mechanisms which were opened and closed at the near surface and near bottom and simultaneously towed horizontally, designated BHH (Bongo Half Horizontal).

Bongo net stations were phased in between 1981 and 1986 and included Near-Offshore stations: (a.) 500, 501, 505, and 506 - BS sampling only; (b.) 701 - BO sampling only; (c.) 535 - BS and BO; (d.) 502 and 507 - BS, BO, and OM; and (e.) 719 -

BO and OM sampling; and Far-Offshore stations: (a.) 704, 711, 713, 788, and 798 - BH and OM; and (b.) 706 and 708 - BHH, BH and OM sampling.

Zooplankton and ichthyoplankton sampling was conducted monthly at most stations with quarterly sampling at stations 23 - 30, 50 - 54 (until December 1981), 407, 419, 422, 434, 435, and 460 - 486 (Table 1). Only seven stations were sampled continuously from early in the study, February to July 1978, to near its completion - Stations 5, 7, 12 (when combined with station 40) and 13 (both ended in May 1994), 14, 15, and 18 - all HL stations (Table 2). If you consider locations that were occupied continuously but sampling with one gear or methodology ended and was replaced by one or more different methodologies, then two additional stations (21 and 22) are added to this list. In 1979 station 34 (HL) was added to the list of continuously sampled stations. In 1980 stations 37 and 38 (HL) and 21, 22, 535/35, 36, and 52 (all OM) were initiated, while in 1982 station 55 (OM) was added. In 1984 the first of the continuously sampled bongo net stations were added - 535/35 (BO), 502 (BO), 704 (BH), 706 (BH), and 708 (BH). In 1985, station 39 (HL) and in 1986 stations 37 (OM), 502 (OM), 706 (OM), and 708 (OM) were added. In 1987, station 704 (OM) was the last station to be continuously sampled thereafter.

For all of the above mentioned stations, however, the actual zooplankton and ichthyoplankton data streams (i.e., time lines when the samples were sorted, identified and entered into the computerized data base) are often quite different from a station time line that would be generated by a particular sampling station being occupied or when a plankton sample may have been collected out in the field but subsequently not processed in the laboratory.

Sample Preservation

Large jellyfish, sargassum, and other large material collected in a tow were noted, separated from the catch, rinsed to rid them of adhering plankton organisms, and then discarded. The remaining sample was passed through plankton netting of the same mesh as that of the collecting net, then transferred to collecting jars. Care was taken to not fill

Table 2. Time lines (i.e., start and finish dates) for study time periods and major events and for zooplankton and ichthyoplankton data by station and sampling gear. Note, however, that occasional small gaps within the actual zooplankton/ichthyoplankton data sets for station time lines are not indicated. For example during December 1987, no faunal identifications were made at stations numbered ≤ 39 for gear codes HL and OM (see Table 1 for gear code definitions). Also, only those stations which had greater than three sampling dates are indicated; therefore, stations 20, 23, 38 (OM), 50, 51, 407, 419, 422, 434, 460-466, 483, 507 (OM), 701, 706 (BHH), 708 (BHH), 788, and 798 are not included. Letters within parentheses are gear codes; stations without gear codes are HL stations. For a given station a date within a bracket represents a start or finish date that differs slightly from the station group's time line. M = monthly samples. Q = quarterly samples. T = monthly samples w/faunal identifications only during target months (i.e., Jan., Feb., Apr., Jun., Jul., Sep., and Nov.). Years with solid black circles (•) indicate monthly samples but only zooplankton settled or displacement volumes may have been recorded. See additional comments on Table 1. Asterisks on construction ending date indicates that there is a range in completion dates for the various environments from June 1980, when all inshore LOOP pipeline backfilling completed, to November 1980 when the 48" MOL (oil carrying) line to shore was completed, to March 1981, when all pipelines were completed except for fittings.

TIME PERIOD/EVENT	1978	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
PRE-IMPACT (P)	2/78 P	P 2/79																
CONSTRUCTION (C)		3/79 C	C	C* 3/81														
BRINE DISPOSAL (B- vast majority)			5/80 B	B	B	B 11/83												
STATIONS																		
5, 7, 14 [3/78-11/95]	2/78 M	M	M	M	M	M	M	M	M	M	M	T 8/89	T	T	T	T	T	T
1, 2, 3, 4[-6/85] (data gap from 9/83 to 1/84)	2/78 M	M	M	M	M	M 8/83	2/84 M	M 11/85										
41, 42, 43, 44	2/78 M	M	M	M	M	M	M 2/84											
6, 9 [-12/81], 11 [7/78-12/81], 17 [3/78-], 19 [5/78-], 31 [9/78-]	2/78 M	M	M	M	M 1/82													
8, 10 [5/78-]	2/78 M	M	M	M	M 1/82													M
21, 22	4/78 M	M	M	M	M	M	M 1/84	•	• 7/86									

15, 18 [7/78-]	5/78 M	M	M	M	M	M	M	M	M	M	M	T 10/89	T	T	T	T	T	T 11/95
16	5/78 M	M	M	M	M	M	M	M 8/85										
12 (+40), 13	7/78 M	M	M	M	M	M	M	M	M	M	M	T 8/89	T	T	T	T	T 5/94	
24, 25, 26, 27, 28, 29, 30 (All HS)	8/78 Q	Q	Q	Q 12/81														
34		3/79 M	M	M	M	M	M	M	M	M	M	T 8/89	T	T	T	T	T	T
32, 33		3/79 M	M	M	M 1/82													
435		8/79 Q	Q 9/80															
35/535		9/79 M	M	M	M	M	M 1/84	•	• 7/86									
37			1/80 M	M	M	M	M	M	M	M	M	T 8/89	T	T	T	T	T	T
475 (≈ 467 to 474 and 476) (All OM)			1/80 Q	Q 11/81														
38			2/80 M	M	M	M	M	M	M	M	M	T 10/89	T	T	T	T	T	T
36			2/80 M	M	M	M	M 1/84	•	• 7/86									
477, 478, 479, 480, 481, 482 (All OM)			4/80 Q	Q 11/81														
52 (OM)			6/80 Q	Q	M	M	M	M	M	T 5/87	T	T	T	T	T	T	T	T
53, 54 (Both OM)			6/80 Q	Q	M	M	M	M	M 10/86									
52, 53, 54 (All HL)			6/80 Q	Q	M	M	M 2/84	•	• 8/86									
36 (OM)			8/80 M	M	M	M	M	M	M	T 5/87	T	T	T	T	T	T	T	T
484, 485, 486 (All OM)			8/80 Q	Q 11/81														
35/535 (OM -- id gap 12/89-8/94)			9/80 M	M	M	M	M	M	M	M	M	M 11/89	•	•	•	•	9/94 T	T

21, 22 [11/80-] (Both OM)			10/80 M	M	M	M	M	M	M	T 5/87	T	T	T	T	T	T	T	T
500, 501, 502, 505, 506, 507 (All BS)				9/81 M	M	M 12/83												
55					2/82 M	M	M 6/84	•	• 8/86									
55 (OM)					4/82 M	M	M	M	M	T 5/87	T	T	T	T	T	T	T	T
535/35 (BS)					4/82 M	M 12/83												
535/35 (BO), 502 (BO), 704 (BH-gap between 8/86 and 8/87), 706 (BH), 708 (BH)							1/84 M	M	M	M	M	M	T 3/90	T	T	T	T	T
507 (BO - also sampled 8/83)							1/84 M	M	M 7/86									
39 (data gap from 9/88 to 2/89)								9/85 M	M	M	M	T 10/89	T	T	T	T	T	T 11/95
37 (OM)									5/86 M	M	M	T 8/89	T	T	T	T	T	T
502 (OM)									8/86 M	M	M	M	M 8/90	•	•	•	•	•
502, 704 [8/87-], 706, 708 (All OM)									8/86 M	M	M	M	M 5/90	•	•	•	•	•
711 (BH & OM), 713 (BH & OM), 719 (BO & OM)									8/86 M	M 7/87								

sample jars more than 30 percent full with collected (concentrated) sample to avoid spoilage or incomplete preservation.

Samples were preserved in the field with full-strength formalin buffered with sodium phosphate added to filtered ambient water to yield a final concentration of 10-15% (Steedman 1976). The sample jars were transported to the lab in protective carriers and kept out of direct light sources by storing in a cool, well-ventilated area to prevent fading of pigments and discoloration of zooplankton specimens. In the laboratory, samples were changed over to a fresh solution of 5-10% buffered formalin.

Hydrography

At inshore stations, conductivity, salinity, and temperature were measured with a Beckman RS-5 inductive salinometer (1978-1989) or a Hydrolab DataSonde II (1990-1995). At offshore stations, a vertical profile of the water column for temperature, salinity, conductivity, and dissolved oxygen was taken with a Martek VI STD-DO water quality instrument through 1987 and a Guildline/Rosette CTD-DO/sample-bottle array thereafter. Dissolved oxygen levels were measured by the azide modification of the Winkler method (APHA 1980, 1985) on Niskin bottle samples collected at surface, middle, and bottom depths offshore and on Kemmerer samples collected inshore.

Laboratory Procedures

Zooplankton settled volume and displacement volume values for whole plankton samples were used to formulate zooplankton biomass (≈standing stock) estimates. Juvenile fish, larger invertebrates, and conspicuous debris were first noted then removed from the sample before biomass determination. Plankton samples were placed in graduated cylinders and allowed to settle for 24 hours after which settled volume was recorded (Beers 1976). From January 1982 through July 1987, total plankton biomass estimates were derived from both 24-h settled volume (± 0.5 ml) and displacement volume (± 0.1 ml; Mercury Immersion Method - Yentsch and Hebard 1957 modified by the use of a vacuum pump to remove interstitial water from the sample). After July 1987, only displacement volume was measured because it is believed to be a more accurate measurement and the relationship between settled volume and displacement volume often remains relatively constant (George and White 1985). Zooplankton biomass volumes were divided by the volume of water filtered by the plankton net to yield a standardized biomass estimate (ml/m^3).

Methodology for obtaining quantitative subsamples for enumeration and identification of the zooplankton component varied during the course of the study by species and species abundance. For samples collected prior to February 1980, a 1.0-ml aliquot was extracted from each zooplankton sample for enumeration and identification of organisms. Samples collected between February and December 1980 were subsampled with a Henson-Stempel pipette. Beginning in January 1981, subsamples were obtained with a Folsom Plankton Splitter (McEwen et al. 1958; Van Guelpen et al. 1982). During the early years of the study, whole samples were completely sorted for postlarval shrimp (*Penaeus* spp.), portunid crab megalopae (e.g., *Callinectes* spp.), and larval fish or subsampled by Folsom splitter when catches were very high. In later years, the entire sample was sorted for penaeid shrimp postlarvae, regardless of sample size and postlarval abundance. For portunid crabs, one-half of the sample was examined when fewer than 50 megalopae were found in a quarter-sample; and the entire sample was sorted when fewer than 100 megalopae were found in a half-sample, for a minimum target number of 200 specimens. More aggressive subsamples (down to 1/128th) were utilized only when crab densities were exceedingly high. Half samples were sorted for ichthyoplankton when fewer than 75 specimens were found in a quarter-sample, and entire samples was sorted when fewer than 200 fish were found in a half-sample. The subsampling protocol for larval fish in reality proved to be more conservative than this, given that almost invariably whole or half-samples were sorted. Only in a small number of cases (when larval fish numbers were markedly high) were 1/4th, 1/8th, or 1/16th splits examined. Penaeid shrimp postlarvae, portunid crab megalopae, and larval fish specimens were removed from samples with the aid of binocular dissecting microscopes, then placed into vials for later identification. Shrimp postlarvae and crab megalopae were preserved with 3-5% buffered formalin, and ichthyoplankton specimens were preserved in 70% ethanol.

Modifications to the Sampling Program

The zooplankton sampling program was revised, subsequent to an analysis by LDWF of project data already obtained, as the environmental program emphasis shifted from monitoring LOOP facility and pipeline construction and brine discharge, to monitoring potential impacts of ongoing operations including oil spill and dispersant use. Additional changes were implemented to streamline the sampling program (decrease field effort and sample processing time), to alleviate the accumulating backlog of unsorted and unidentified plankton collections, and to improve comparability among stations within the LOOP corridor while still providing adequate baseline monitoring data for decision making.

The taking of offshore HL (0.5-m, 0.153-mm mesh net) samples was discontinued after July 1986 (however, the last of the offshore HL samples to be worked up and entered into the computerized data set ended in January-February 1984). The decision to discontinue using 0.5-m nets at offshore stations was based upon the results of several ANOVAs conducted by LDWF on 1981 data from stations 21, 22, 35, and 36. Capture efficiencies were analyzed by season for both HL and OM gear (net) types with respect to certain taxa: *Penaeus* spp., *Callinectes sapidus*, fish larvae, copepods, and total zooplankton. Density estimates by gear type for *Penaeus* spp., *Callinectes sapidus*, and larval fish were not significantly different ($P > 0.05$), while copepods and total zooplankton were significantly more abundant in the HL net ($P \leq 0.0001$). The higher HL copepod and total zooplankton densities were attributed to the likely retention of a greater number of smaller developmental stages within the HL's 0.153-mm versus the OM's 0.363-mm net mesh size. It was also noted that this component of the plankton added a disproportionally large amount of time to the total allocation of effort dedicated to sample processing and identification.

In late 1993, the LOOP Inc. Program Review Committee decided to reduce the loss of timely data caused by the extensive backlog of unsorted or unidentified plankton samples that had accumulated over time by endorsing a LDWF proposal to temporarily limit sample processing efforts exclusively to seven (7) "target months" (i.e., Jan., Feb., Apr., Jun., Jul., Sep. and Nov.) and to suspend analyses of the OM plankton data collected at bongo stations. Sampling at the other stations continued on a monthly basis and these collections were archived. This subsampling strategy was based upon the results of statistical analyses conducted by LDWF in 1993 on available LOOP plankton data. These results suggested a gain of relatively minor additional taxonomic information from the OM samples taken at the bongo net stations when compared to the remaining offshore OM stations. These statistical results were combined with known seasonality data for adult spawning periods and the occurrence of ichthyoplankton, megalopal portunid crabs, and postlarval penaeid shrimp in the plankton to formulate a decision to limit plankton identification and analyses to designated station-gear type combinations and the seven "target months". These months spanned or bracketed peak spawning seasons for penaeid shrimp and portunid crab species, as well as the majority of the ichthyoplankton in the LOOP corridor. While this policy of identifying only specimens collected during seven months was implemented in 1993 and continued through December 1995, it led to differing station cut-off dates within the computerized data sets because the extent of the existing backlogs differed by station and sampling gear. For example, for HL stations, the cut-off date for sample identification of only the "target months" was August or October 1989. For one-meter net (OM) stations 21, 22, 36, 52, and 55, it was May 1987; for station 35/535 - May 1988; station 37 - August 1989; and station 502 - February 1990. For bongo net stations 502, 704, 706, and 708 it was February 1990 and for station 535/35 it was April 1990.

Zooplankton and Ichthyoplankton Identifications

Penaeid shrimp and portunid crabs

Primary references used in the identification of selected decapod crustaceans were Felder (1973), Williams (1984), Blanchet (1985/unpubl.), Stuck et al. (unpubl.), and Stuck (unpubl.). Additional life history and seasonality information sources included Cook and Murphy (1971), Gosner (1971), Kurata (unpubl.), and Stuck and Perry (1981).

The decapod crustacean taxa that were identified and enumerated from plankton collections over the duration of the project consisted of the postlarval developmental stage of three penaeid shrimp species: *Penaeus aztecus* (brown shrimp), *P. duorarum* (pink shrimp), and *P. setiferus* (white shrimp), and the megalopal stages of three portunid crab taxa: *Callinectes sapidus* (blue crab), *C. similis* (lesser blue crab), and *Portunus* spp. (swimming crabs - mostly *P. gibbesii*). In addition, Copepoda, the postlarval and adult stages of shrimp or shrimp-like species such as *Lucifer* spp., *Acetes americanus*, and *Trachypenaeus* spp. (probably the roughneck shrimp), the megalopal stage of crab species *Ovalipes floridanus* (lady crab) and *Arenaeus cribrarius* (speckled crab), and squid larvae (f. Loliginidae) were often identified and reported for most of the study. Often LDWF's Plankton Laboratory personnel identified and enumerated constituent taxa in other major plankton groups (e.g., Doliolida, Larvacea, Cirripedia, Hydrozoa, Siphonophora, Cladocera, Ostracoda, Mysidacea, and Chaetognatha).

Ichthyoplankton

Primary references used to facilitate ichthyoplankton identifications were Miller and Jorgenson (1973), Fritzsche (1978), Hardy (1978a, 1978b), Johnson (1978), Jones et al. (1978), Martin and Drewry (1978), Fahay (1983), Moser (1984), and Ditty (unpubl.). Other useful literature on larval fish taxonomy, distributions, and seasonality included Ditty (1984, 1986, 1991), Ditty et al. (1988), and Farooqi (unpubl.). Recognized developmental stages for ichthyoplankton were "yolk-sac", "larvae", "juvenile", and "leptocephalus" (Elopiformes and Anguilliformes) after Fahay (1983).

On an annual basis, the overwhelming majority of larval and adult marine fish species in the northern Gulf of Mexico belong to five families: Clupeidae (herrings), Engraulidae (anchovies), Sciaenidae (drums), Carangidae (jacks), and Bothidae (lefteye flounders) (Gillespie 1971; Perry and Christmas 1973; Barrett et al. 1978; Stuck and Perry 1982; Richards et al. 1984; Ditty 1986; Kelly et al. 1986). Consequently, specimens in these families were identified to species when possible, with the exception of the engraulids, which presently cannot be reliably identified to species at sizes less than 10-14 mm. Other larval fish specimens that routinely were identified to the lowest possible taxonomic level included the common northern Gulf families Lutjanidae (snappers), Mugilidae (mullets), Scombridae (mackerels), Serranidae (sea basses), and Stromateidae (butterfishes). Two "morphological types" (A and B) were recognized for *Cynoscion arenarius* (Cowan 1985; Ditty 1991) and *Menticirrhus* spp. (kingfishes - Ditty

1991). Serranids were placed in one of four subfamilies: Serraninae, Anthiinae, Epinephelinae, or Grammistinae when identification to species was not accomplished. Ophichthids (snake eels) were divided into two subfamilies: Ophichthinae and Myrophinae. Myctophids (lanternfishes) usually were identified to subfamily: Myctophinae or Lampanyctinae. The remaining ichthyoplankton were identified at least to family when possible. Extremely small (usually < 2 mm yolk-sac or early larvae) or damaged specimens often were identified to order, and in rare cases, assigned to "Class Osteichthyes" (bony fishes), as were virtually all larval fish before 1982. Scientific names that were associated with input values for zooplankton and ichthyoplankton taxonomic codes conformed to the 10-digit National Oceanographic Data Center (NODC) codes, Version 6.

Data Management and QA/QC

Field and laboratory data were entered into the LDWF's central computer and then formatted using VMS SAS® software (SAS® Institute Inc. 1990a, 1990b). The data base consisted of environmental/sample data, including station, sample gear, volume of water filtered, zooplankton biomass estimates, and species identifications and abundance. Two data sets were constructed by LDWF: one for the period of February 1978 to December 1981, called LOOP Plankton Data Base, Card Type 7 (LPDB7), and one for the period of January 1982 to December 1995, called LOOP Plankton Data Base, Card Type 11 (LPDB11). Due to the problematic nature of the earlier data base, which LDWF had never analyzed, it was necessary as part of Task 2 to incorporate a separate budgetary subcontract to conduct extensive reformatting, recording, and, in some cases, first-time entry of original data directly from raw field and laboratory data sheets, in addition to the extensive QA/QC work traditionally performed on long data sets.

LOOP plankton data set "LPDB11" (Jan. 1982 to Dec. 1995)

The SAS export file containing LOOP plankton data was obtained through LSU's Computer Services via downloading from the main frame to a PC. The file was then "zipped" up and copied onto diskette. The SAS data sets were imported into the PC environment without complications.

The LPDB11 data set used 80-column data formats developed when punch cards were the only means of data entry. This resulted in the construction of one large data set containing both environmental/station data and plankton data. This problem was further complicated by multiple observations used to code special aspects of a sample (i.e., a single sample could have several special codes). Thus, separating the environmental data from the plankton data was a priority during Task 1. Care was taken when dividing the environmental and plankton data sets so that duplicate or redundant observations would not be perpetuated, while not losing valuable information. Some variables were renamed to more descriptive titles. Other variables were combined or completely removed from the data to reduce redundancy or extraneous information. During this process, extreme outliers were checked for validity. The resulting reformatted data sets reduced the complexity of the original data, allowing for more efficient tracking of errors.

Much of the first half of the Task 2 time period was devoted to data quality control and management. Volume of water filtered estimates were checked by gear type and by date (since flowmeter design was changed in August 1987). Missing estimates were derived from mean values for a particular gear type/station combination. Biomass estimates, settled volume and displacement volume, were also carefully scrutinized. Samples where only biomass estimates were made (with no subsequent taxonomic work-up) were added to the data set. A list of 10-digit NODC codes and corresponding scientific names was constructed to merge with the plankton data.

LOOP plankton data set "LPDB7" (Feb. 1978 to Dec. 1981)

This portion of the LOOP plankton database consisted of data collected at inshore and offshore sampling stations (HS, HL, and OM gears) from the project inception (February 1978) through December 1981 and initially consisted of 15,736 observations, representing 57 different stations. This portion of the zooplankton data base was never examined to any great extent by LDWF to determine the validity of certain calculated variables (e.g., plankton tow volume of water filtered and organism densities) or for questionable life history codes, taxonomic codes, and species identifications. Extensive primary QA/QC was performed on this data set to ensure a greater degree of confidence in subsequent analytical results.

One major problem identified by LDWF was missing NODC numeric taxonomic codes and scientific names for many identified taxa. All observations had the older version of a 1-3 digit LDWF taxonomic code, but many lacked a corresponding 10-digit NODC code (5,043 obs.) and/or scientific name (4,282 obs.). A number of truncated (less than 10 digits) NODC codes in the database were corrected. There were 305 identified taxa. Those observations associated with LDWF codes 1-300 were mostly correct. All others (up to 607) had to be extensively checked for accuracy.

Although bongo net sampling was initiated at stations 500, 501, 505, 506, and 507 during September 1981, data collected prior to January 1982 were not entered into the original database by LDWF. The LDWF provided the September to December 1981 bongo data in computerized format during Task 2.

As with LPDB11, LPDB7 was divided into two data sets, one containing environmental data and the other plankton data. The LDWF constructed a species list that matched the plankton observations as well as the NODC data. The LDWF also extracted raw data for LPDB7, which allowed us to incorporate missing biomass estimates into the existing database. We entered flowmeter readings to assure volume filtered estimates were complete. LPDB7 was then subjected to the same error checks as LPDB11.

Zooplankton biomass or standing stock estimates (settled and/or displacement volume) were reported in ml/m^3, zooplankton densities in no./m^3, and ichthyoplankton densities in no./100m^3 for individual stations and/or gear by dividing raw measurements or counts or adjusted counts of organisms identified in a (sub)sample by the volume of water filtered. Missing or questionable values for volume of water filtered were replaced by the average volume filtered estimate for that plankton net mesh size at that particular station with tow duration and type of flowmeter used taken into account.

Analytical Procedures

The LDWF (Ditty et al. 1987; Kasprzak et al. 1994, 1996) have previously described the various cluster analyses and ANOVAs on station surface salinities used to derive the sampling station environmental characterizations and groupings indicated in Tables 1 and 3.

BACI analyses were performed on the densities (no./m^3) of organisms and on zooplankton biomass estimates (i.e., settled volume or displacement volume - ml/m^3). Densities were log-transformed (Ln [(no./volume of water filtered) +1]) before the analyses to attempt to normalize their distribution and the distribution of the model residuals. Statistical diagnostics supported the application of this transformation; however, low occurrences of some species resulted in many zero density values, skewing the distribution to the right. Selection of species for a particular analysis was based on the duration of reliable identifications and on their frequency of occurrence during the time interval of interest. Special consideration was also given to species of commercial or recreational importance. For a given statistical test on a selected species, all stations (appropriate for the analysis) at which the organism occurred were used in the analysis. The LDWF environmental codes for the remaining no-catch stations were scrutinized to determine whether or not to include plankton data collected at these stations in the analysis. For example, if a station was assigned an environmental code of "Species not present", that station entered the analysis with a density of zero. Alternatively, a station with an environmental code of "Sample not analyzed" or "Organism removed but not identified" was excluded from the analysis. Similarly, data derived from the biomass estimate method that occurred with the greatest frequency during the time interval of interest were included in the biomass analysis. The relationship between the two biomass estimates was determined for each gear type by linear regression on natural log-transformed values. Missing biomass values were then predicted from the remaining biomass estimate if present.

In general, all BACI or DACI analyses have two main effects: a temporal effect - Before-After (or During-After), which is based upon the dates of the event being studied;

Table 3. List of impact and control test stations and the source of their potential perturbation(s) used in statistical analyses of environmental impact. Station numbers within parentheses are either at the same or equivalent (≈) locations.

IMPACT TEST STATIONS	POTENTIAL PERTURBATION	CONTROL TEST STATIONS
7 (407) (≈462)	P	1, 6, 8, 9, 10, 12 (40), 13, 32, 33, 37, 41
11	P	1, 12 (40), 13, 14, 18, 41
31, 460†	P	2, 3, 4, 5, 6, 33, 34 (434), 37, 42, 43
466, 483†	P	25, 26, 27, 30
24, 28, 29	P-FF	17, 19, 25, 26, 27, 30
15 (≈464), 16	C-FF	1, 12 (40), 13, 14, 18
38 (≈463), 39	C, P	1, 12 (40), 13, 14, 18
36, 475*	D	21, 22 (422), 35/535 (435), 44, 500, 501, 502, 505, 506, 507, 719
53 (481), 55, 485, 486, 708	LT	52 (482), 54 (479), 477, 478, 480, 484, 704, 706, 711, 713

C = Clovelly Storage Dome construction, operational and/or brine/oil discharge impacts.
D = Brine Diffuser construction and/or brine discharge impacts.
FF = Far-Field.
LT = LOOP Offshore Terminal construction, operational and/or oil discharge impacts.
P = Pipeline construction and/or operational impacts.

Note: Stations 20, 23, 50, 51, 419, 460, 461, 465, 466, 483, 701, 788, and 798 have been dropped from these analyses due to negligible sample sizes (represented by only 1-3 collections).

*Due to their proximity, only one (1), one-meter, surface plankton tow was taken at station 475 from 10/79-11/81 to represent the stations 467, 468, 469, 470, 471, 472, 473, 474, and 476.

†These two pipeline test groupings were not specifically analyzed because the impact station sampling durations were either too short or did not overlap sufficiently with sampling intervals for control stations to allow "before and after" or "during and after" statistical analyses.

and a spatial effect - Control-Impact, which is based upon the proximity to the theorized impacted site(s). Since larval abundances of most estuarine and coastal species are by their very nature seasonal, Season was also included as a temporal main effect, along with its various interaction terms with the other two main effects. The resultant model is as follows:

Ln(Density+1) = BA YEAR(BA) CI STATION(CI) BA*CI
YEAR(BA)*STATION(CI) SEASON SEASON*BA SEASON*CI
SEASON*BA*CI

where the interaction terms BA*CI and SEASON*BA*CI test for direct impact. One can simply substitute the During-After (DA) component for the BA effect in the above model description to obtain the DACI model. Oil spill (Figure 3) and brine discharge data (Figure 4) were also utilized in the appropriate analyses as a covariate with the impacted stations. However, if the covariate effect was not significant (i.e., $P > 0.1$), it was removed from the model before interpretation of the results.

The Control-Impact (CI) model is similar to the BACI (or DACI) model except no BA effect is present, as well as any terms containing it. Thus in this model, Year becomes a main effect. Since there is no "impact" term per se, the oil covariate is used as an indication of impact. A significant oil term may point towards a negative (or positive) impact on organism density due to the petroleum spill. The resulting model is as follows:

Ln(Density+1) = OIL CI STATION(CI)
YEAR SEASON YEAR*CI YEAR*STATION(CI)
YEAR*SEASON SEASON*CI SEASON*STATION(CI)
YEAR*SEASON*CI

All BACI, DACI, and CI models were tested with the MIXED procedure using restricted maximum likelihood (SAS 1992). For a family of tests, the Bonferroni - corrected alpha level is reported to aid in the interpretation of the individual test

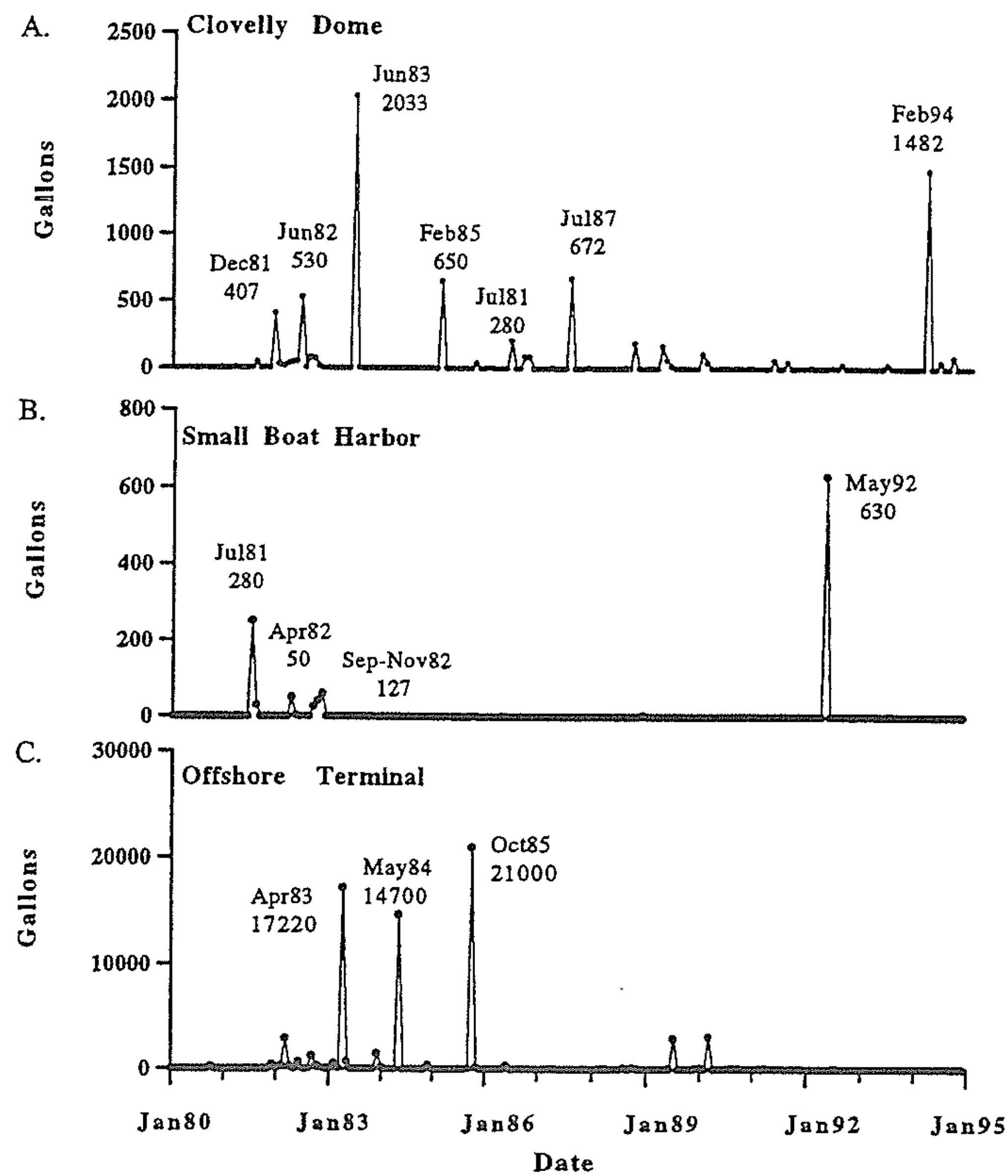

Figure 3. LOOP related oil spills in gallons at the Clovelly Storage Dome (A), the LOOP small boat harbor (B), and the LOOP Offshore Terminal (C).

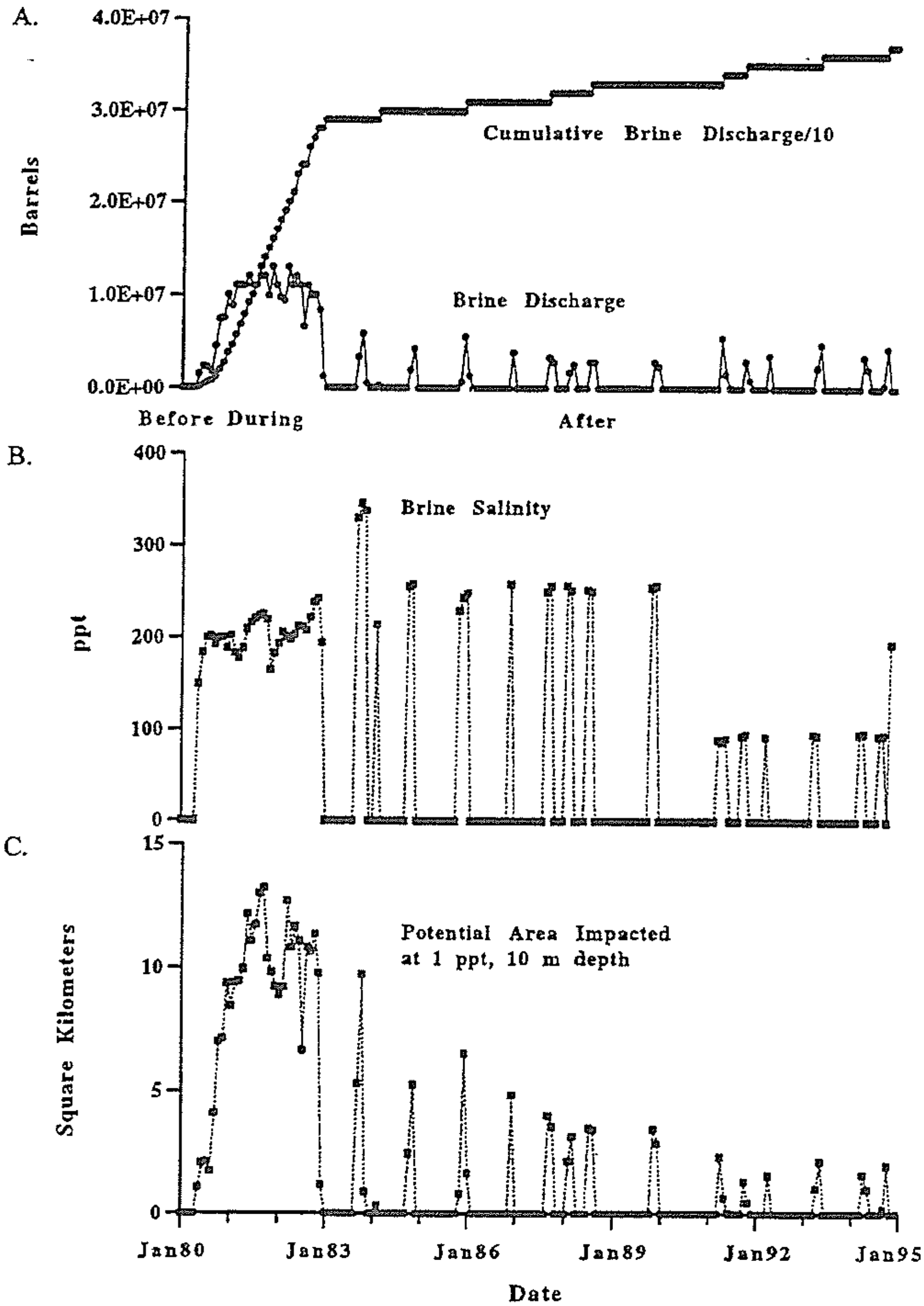

Figure 4. Monthly brine discharge in barrels (A) and ppt (B) at the nearshore Brine Diffuser. The top panel also shows cumulative dischange and the before discharge, maximum discharge, and reduced discharge time periods. The potential area impacted (km^2), based on a 1 ppt increase in a 10 m water column, is shown in the bottom panel (C).

calculated probabilities. The Bonferroni correction conservatively controls the lower boundary of the family level of significance at 0.05 (Neter et al. 1996).

Failure to detect an interaction in such statistical analyses can result either because the available data do not provide sufficient power to detect the impact, or because there is no discernable impact. A number of factors contribute to the lack of power in a statistical test. In environmental monitoring the reasons for low power are high variability, typical of the experimental material, and small sample sizes. High variability cannot be controlled by the investigator, but is offset if sample sizes are made large by either intensive or long-term sampling. The lack of a discernable impact can result because there is in fact no impact. However, an actual impact may not be detected if the experimental design is inadequate. Some examples of design inadequacies are poor choices in control stations and failure to sample for seasonal differences.

RESULTS

Inshore Combined Impacts BACI Model

To test for Long-term Inshore Combined Impacts associated with LOOP (i.e., construction, related local activities, oil spills, etc.), we conducted a Before-After, Control-Impact (BACI) Mixed Model ANOVA utilizing oil spill data from the Clovelly Storage Dome (Station 38, Figure 1) as a covariate. The Before time period was February 1978 to February 1979 and the After time period extended from March 1979 to December 1994, or to December 1995 if the oil data accounted for an insignificant portion of the variation and was excluded from the model. The analysis was run with Season (i.e., Winter = months 1-3, Spring = 4-6, Summer = 7-9, and Fall = 10-12) as a main effect. Only HL (0.5-m net with 0.153-mm mesh) samples were utilized. Control and Impact stations were assigned using the most logical station groupings available (Table 3) and modified by the appropriateness or applicability of their respective data time lines (Table 2). Therefore, the Control and Impact stations tested (Table 4) were subsets of those stations potentially available. The small number of taxa tested resulted from the severely limited availability of detailed, consistently recorded, taxonomic identifications prior to January 1982.

The predetermined adjusted alpha level using the Bonferroni correction for multiple testing was $P = 0.0167$ for this family of tests (i.e., Mixed Model ANOVA run independently on three taxa). This extended time period (from February 1978 to December 1995) necessitated that we convert zooplankton biomass estimates based upon the settled volume method into zooplankton displacement volume. We fit the following regression model to predict displacement volumes for HL stations: Ln [(displacement vol./vol. of water filtered) + 1] = 0.832 Ln [(settled vol./vol. of water filtered) +1] - 0.438 ($F = 3620.759$; $P \leq 0.0001$; $R^2 = 0.7730$; $N = 1065$). Having done that we noted a marginally significant oil covariate within the BACI Inshore Cumulative Impact Mixed Model ANOVA ($P = 0.0983$, Table 5), which indicated a negative or inverse relationship between oil and zooplankton biomass (Figure 5). A marginal Before-After, Seasonal interaction ($P = 0.0811$) was also noted, which was mainly due to higher Before densities

Table 4. Summary of statistical analyses used to investigate potential environmental impacts resulting from LOOP related activities. Listed are the type of statistical model used, type of impact tested for, the time periods defined within each test, the LDWF zooplankton/ichthyoplankton stations (divided into impact and controls) and taxonomic groupings used. BACI = Before-After, Control-Impact statistical design. DACI = During-After, Control-Impact statistical design. CI = Control-Impact statistical design. See Table 1 for definitions of HL and OM gears. N = Total number of stations available for analysis; + sign indicates a positive station (i.e., a station at which that organism was collected).

Statistical Model	Type of Impacts	Time Period			Stations Used		Taxonomic Groupings
		Before	During	After	Impact	Control	
BACI, Mixed ANOVA Model	Inshore, Long-term Combined Impacts - with oil data & with season (main effect); HL stations only; See Table 5 for statistical results.	2/78-2/79		3/79-12/95	7 (407) (≈462) 11 15 (≈464) 16 38 (≈463) 39	1 13 6 14 8 18 9 32 10 33 12 37 (40) 41	Zooplankton biomass (displacement vol.); N = 1970; After ends 12/94 *Penaeus aztecus*; N = 1835 with 106 + sta.'s; excluded 2/78 Osteichthyes; N = 1727 with 766 + sta.'s; excluded 2/78 and 2-4/80
BACI, Mixed ANOVA Model	Inshore, Long-term Construction Impacts - without oil or brine data & with season (main effect) for pipeline & Clovelly Storage Dome; maximizing longevity of stations while minimizing variability of extraneous transient stations; HL stations only; See Table 6.	2/78-2/79		3/79-8/85	7 (407) (≈462) 15 (≈464) 16	1 12 (40) 13 14 18	Zooplankton biomass (settled vol.); N = 613 *Penaeus aztecus*; N = 412 with 24 + sta.'s; excluded Fall (only 1 + sta.) and sta. 16 (no catch) Osteichthyes; N = 581 with 301 + sta.'s; excluded 2-4/78 and 2-4/80
BACI, Mixed ANOVA Model	Inshore Construction Impacts Reduced Time Interval - without oil or brine data & with season (main effect) for pipeline & Clovelly Storage Dome; maximizing more detailed zooplankton data set early in study; HL stations only; See Table 7.	2/78-2/79		3/79-3/83	7 (407) (≈462) 15 (≈464) 16	1 (40) 6 13 8 14 9 18 10 41 12	Polychaeta; N = 543 with 200 + sta.'s; excluded 7/82-3/83 Gastropoda; N = 543 with 184 + sta.'s; excluded 7/82-3/83 Copepoda (excluded nauplii and *Acartia* spp.); N = 550 with 513 + sta.'s; excluded stations where no copepods were identified *Acartia* spp. (excluded nauplii); N = 550 with 489 + sta.'s; excluded stations where no copepods were identified Decapoda (excluded *Penaeus aztecus*); N = 423 with 268 + sta.'s; excluded 2-3/78 and 7/82-3/83; excluded Winter

DACI, Mixed ANOVA Model	Inshore, Long-term Construction Impacts -no pre-impact data; without oil or brine data & with season (main effect) for pipeline & Clovelly Storage Dome; maximizing longevity of stations especially those which started later while minimizing variability of extraneous stations; HL stations only; See Table 8.		3/79-3/81	4/81-8/85	7 15 16 38 (≈463)	1 14 12 18 (40) 37 13	Zooplankton biomass (settled vol.); N = 674 *Penaeus aztecus*; N = 640 with 41 + sta.'s (low abundance) Osteichthyes; N = 642 with 355 + sta.'s; excluded 2-4/80
DACI, Mixed ANOVA Model	Long-term Offshore Brine Diffuser - with and without brine data & with season (main effect); contains gap in detailed zooplankton data (2/84-7/86); maximizes longevity of appropriate stations; OM stations only; See Table 9. * data start dates used within the individual taxonomic analyses varies according to first occurrence - see Taxonomic Groupings column.		8/80*-11/83 (see Type of Impact column notes)	12/83 - 12/95	36 (474) (475)	21 22 35/535	Zooplankton biomass (displacement vol.); N = 666 *Penaeus aztecus*; N = 470 with 194 + sta.'s; During starts 10/80 *Callinectes sapidus* (megalopa); N = 462 with 253 + sta.'s; During starts 1/81 *C. similis* (megalopa); N = 460 with 249 + sta.'s; During starts 1/81 *Brevoortia patronus* (included all *Brevoortia* spp.); N = 308 with 209 + sta.'s; only two seasons with Apr. in Winter and Sept. in Fall; During starts 12/80 *Anchoa* spp. (included Engraulidae, *A. hepsetus* and *A. mitchilli*); N = 441 with 275 + sta.'s; During starts 2/81 Myctophidae (included *Diaphus* spp., *Lampanyctus* spp. And *Hygophum* spp.); N = 238 with 82 + sta.'s (low abundance); only Winter (months 11, 12, and 1) and Spring (months 2, 3, and 4); During starts 1/81 *Chloroscombrus chrysurus*; N = 322 with 123 + sta.'s; excluded Winter; During starts 5/81 *Cynoscion arenarius*; N = 208 with 102 + sta.'s; excluded Winter (10 + sta's) and Fall (9 + sta's); During starts 4/82 *Sciaenops ocellatus*; N = 92 with 71 + sta.'s; instead of Season model run on Month = 8, 9 and 10; During starts 8/81; model weak due to low abundance Blenniidae (included *Hypsobennius hentzi*, *Ophioblennius* spp., and *Scartella cristata*); N = 437 with 194 + sta.'s; During starts 3/81 Gobiidae (included *Gobionellus hastatus* now renamed *G. oceanicus*); N = 444 with 84 + sta.'s (low abundance); During starts 1/81 Scombridae; N = 420 with 43 + sta.'s (low abundance); During starts 7/81 *Peprilus* spp. (included *P. alepidotus* (≈*P. paru*), *P. burti*, and Stomateidae); N = 429 with 52 + sta.'s (low abundance); During starts 4/81 Bothidae; N = 442 with 72 + sta.'s (low abundance); During starts 1/81
DACI, Mixed ANOVA Model	Reduced Long-term Offshore Brine Diffuser - with and without brine data & with season (main effect); insufficient detailed zooplankton data due to data gap (2/84-7/86); maximizing longevity of stations while minimizing variability of extraneous transient stations and of a long After time period; HL stations only; See Table 10.		5/80-11/83	12/83 -7/86	36	21 22 35/535	Zooplankton biomass (settled vol.); N = 263

CI Mixed ANOVA Model	Long-term Offshore Terminal Oil Impact-with Offshore Terminal oil data (which ends 12/94) as a covariate & year & season as main effects; no pre-impact and post-impact effects; maximizing longevity of stations while minimizing variability of extraneous transient stations; OM stations only; See Table 11. * data start and end dates used within the individual taxonomic analyses varies according to occurrence - see Taxonomic Groupings column.		5/81*-12/94* (see Type of Impact column notes)		53 (481) 55 708	52 (482) 54 (479) 704 706	Zooplankton biomass (displacement vol.); N = 642 *Penaeus aztecus* (postlarvae); N = 322 with 95 + sta.'s (low abundance); data analyzed from 6/82 to 2/90 *Callinectes sapidus* (megalopa); N = 302 with 113 + sta.'s; data analyzed from 5/81 to 12/89; excluded 1983 data *C. similis* (megalopa); N = 344 with 168 + sta.'s; data analyzed from 5/81 to 2/90 *Portunus* spp. (megalopa); N = 318 with 149 + sta.'s; data analyzed from 4/82 to 12/89 *Brevoortia patronus* (included *B. gunteri*); N = 158 with 134 + sta.'s; data analyzed from 10/82 to 2/90; excluded Spring and Summer *Anchoa* spp. (included Engralidae, *A. hepsetus* and *A. mitchilli*); N = 247 with 154 + sta.'s; data analyzed from 6/81 to 9/89; excluded Fall Myctophidae (included *Centrobranchus nigrocellatus*, *Diagenichthys atlanticus*, *Notoscopelus resplendens*, *Gonichthys* spp., *Hygophum* spp., *Lampanyctus* spp., and *Myctophum* spp.); N = 244 with 109 + sta.'s; data analyzed from 5/82 to 2/90; excluded Summer *Chloroscombrus chrysurus*; N = 145 with 71 + sta.'s; data analyzed from 8/81 to 9/89; only Spr./Sum. (months 5, 6, and 7) and Sum./Fall (months 8, 9, and 10); excluded 1983 data *Cynoscion arenarius*; N = 239 with 64 + sta.'s (low abundance); data analyzed from 4/82 to 9/89; excluded Fall Blenniidae (included *Hypoblennius* spp. and *Ophioblennius* spp.); N = 310 with 179 + sta.'s; data analyzed from 8/81 to 6/89 Scombridae; N = 190 with 74 + sta.'s; data analyzed from 8/81 to 9/89; only Spr./Sum (Apr. through July 15) and Sum./Fall (July 16 through Oct.) *Peprilus* spp. (included *P. alepidotus* (≈ *P. paru*), *P. burti* and Stomateidae); N = 194 with 71 + sta.'s; data analyzed from 11/81 to 3/88; excluded Summer Bothidae; N = 315 with 70 + sta.'s (low abundance); data analyzed from 5/81 to 6/89 *Symphurus* spp. (included *S. plagiusa* and Cynoglossidae); N = 248 with 76 + sta.'s (low abundance); data analyzed from 5/81 to 9/89; excluded Winter

Table 5. Before-After, Control-Impact (BACI) inshore LOOP combined impacts mixed model ANOVA on log-transformed densities with a Seasonal (Winter = months 1-3, Spring = 4-6, Summer = 7-9, and Fall = 10-12) main effect from February 1978 to December 1995 for HL gear only. NDF = numerator degrees of freedom. DDF = denominator degrees of freedom. Clovelly Storage Dome oil spill data entered as a covariate in the displacement volume model. Bonferroni-adjusted alpha level was 0.0167 for this family of tests. See Table 4 for details.

Source of Variation	NDF	DDF	Type III F	Prob > F
Zooplankton Displacement Volume				
OIL	1	1745	2.74	0.0983
BA	1	16	1.49	0.2394
CTRLIMPC	1	17	1.59	0.2243
BA*CTRLIMPC	1	175	0.15	0.6977
SEASON	3	1745	1.95	0.1192
BA*SEASON	3	1745	2.25	0.0811
CTRLIMPC*SEASON	3	1745	0.73	0.5363
BA*CTRLIMPC*SEASON	3	1745	0.74	0.5292
Penaeus aztecus				
BA	1	17	0.29	0.5970
CTRLIMPC	1	17	0.63	0.4370
BA*CTRLIMPC	1	183	0.01	0.9398
SEASON	3	1602	1.30	0.2713
BA*SEASON	3	1602	1.08	0.3563
CTRLIMPC*SEASON	3	1602	0.19	0.9061
BA*CTRLIMPC*SEASON	3	1602	0.36	0.7799
Osteichthyes				
BA	1	17	0.02	0.8803
CTRLIMPC	1	17	3.32	0.0861
BA*CTRLIMPC	1	183	0.29	0.5937
SEASON	3	1494	1.49	0.2143
BA*SEASON	3	1494	0.33	0.8030
CTRLIMPC*SEASON	3	1494	0.38	0.7651
BA*CTRLIMPC*SEASON	3	1494	0.45	0.7153

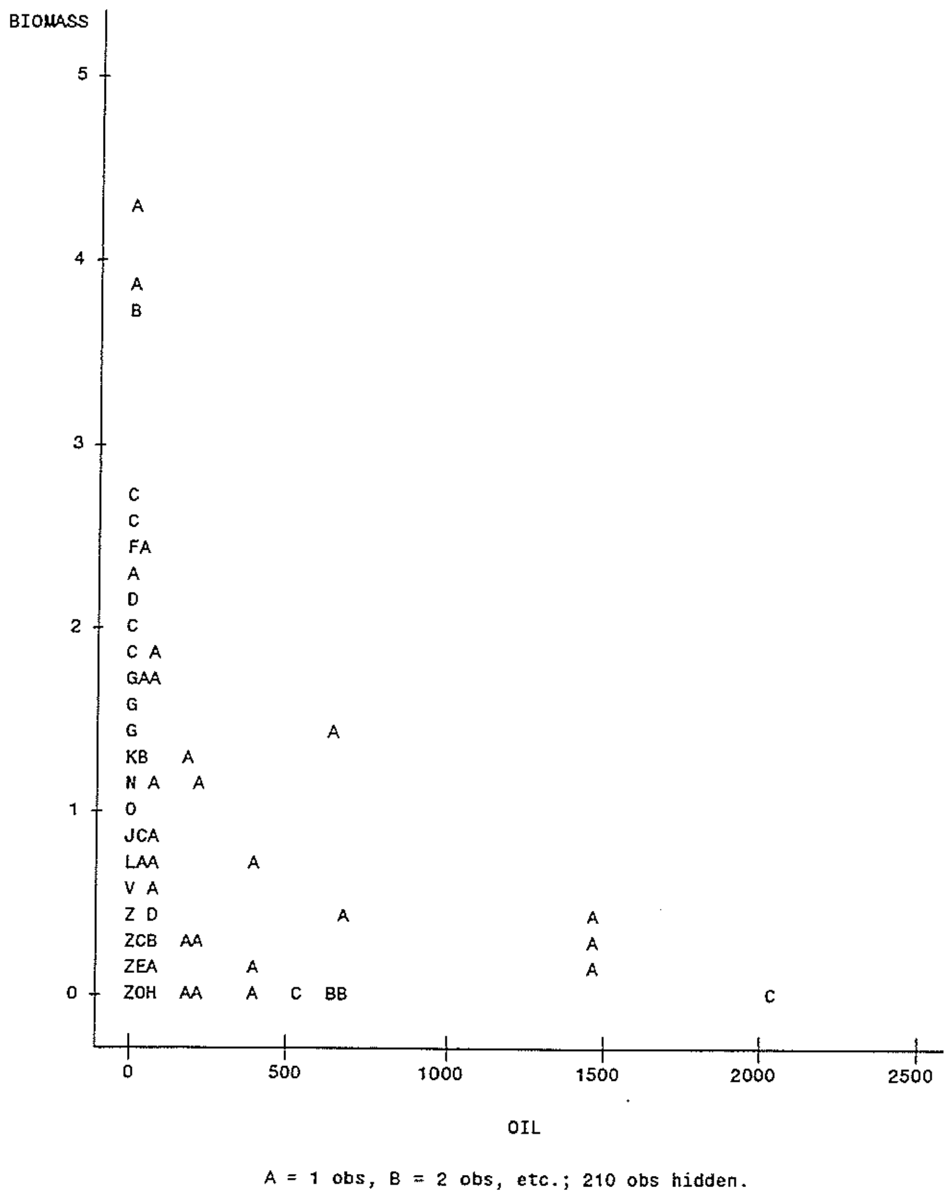

Figure 5. Log-transformed zooplankton biomass estimates (displacement volumes - ml/m^3) from Impact stations associated with the Clovelly Storage Dome (i.e., stations 15, 16, 38, and 39) plotted against inshore LOOP - related oil spill data (gallons). See Tables 4 and 5 for additional information.

in the summer. No significant oil effects were seen in the BACI Inshore Cumulative Impacts Model for either *Penaeus aztecus* or Osteichthyes. However, when oil was removed, Osteichthyes displayed a marginally significant Control-Impact effect ($P = 0.0861$) with Control densities ($27.2/100m^3$) greater than Impact ($14.7/100m^3$).

Offshore Combined Impacts BACI Model

We were unable to conduct a similar BACI Combined Impact analysis for Offshore waters because of problems associated with the data time lines (i.e., availability) for the various sampling gears used (i.e., HL, OM, BO, BS, BH, and BHH), the longevity of various stations, a lack of appropriate Control-Impact groupings, and crucial taxonomic identification gaps.

Inshore Construction Impacts Models

In addition to the long-term (February 1978 to December 1995) Inshore Combined Impacts BACI Mixed Model ANOVA, we also analyzed selected inland pipeline and Clovelly Storage Dome Impact and Control stations for construction-related impacts, only these tests involved two shorter time periods: from February 1978 to August 1985 and from February 1978 to March 1983. These two reduced time periods were determined by HL station availability, duration of data time lines, control/impact station groupings, the consistency within the zooplankton taxonomic resolution, and the distributional densities within. Both analyses are equally limited by the lack of larval fish taxonomic resolution during the pre-impact interval (i.e., Class Osteichthyes identification level only). The shorter test interval, however, actually has better zooplankton taxonomic resolution but is occasionally limited by a data gap from August 1982 to March 1983 (e.g., Decapoda, Polychaeta, and Gastropoda).

The Inshore Construction Impact BACI Model with the longer data set (February 1978 to August 1985) was run on zooplankton biomass and Osteichthyes and *Penaeus aztecus* densities with Season as a main effect for the HL stations only (without oil or brine data values for the Clovelly Storage Dome). The predetermined adjusted alpha level using the Bonferroni correction for multiple testing was $P = 0.0167$ for this family of tests (i.e., Mixed Model ANOVA run independently on three taxa). No significant Inshore Construction environmental impact results were identified. Of interest, although not significant, was a Control-Impact Seasonal interaction for *Penaeus aztecus* (P = 0.0543; Table 6), where the spring mean density at Impact stations was an order of magnitude greater than the spring Control mean (0.05 postlarvae/m^3 vs. 0.005), while the Control winter mean (0.025) was greater than the Impact value (0.002).

The BACI Inshore Model that utilized the shorter data set (February 1978 to March 1983) was run on *Acartia* spp., Copepoda, Decapoda, Polychaeta, and Gastropoda (without oil or brine data). Our predetermined adjusted alpha level using the Bonferroni correction was P = 0.0100 for this family of tests (i.e., five taxa tested). No significant environmental impact results were identified. *Acartia* spp. displayed a significant Seasonal effect (P = 0.0001; Table 7), with winter densities being lower than all other seasons. Also of interest is the Before-After Seasonal trend (P = 0.0222) which resulted from Before spring and summer mean densities (3,491 and 1,510/m^3) being greater than After (329 and 742/m^3, respectively); all other seasonal Before-After groupings were approximately equal. In the Copepoda analysis, there was a marginally significant Seasonal effect (P = 0.0637) and a significant Before-After Seasonal interaction (P = 0.0027), which mostly reflects consistently lower Before densities, especially during fall and winter (Figure 6). The significant Control-Impact Seasonal interaction (P = 0.0013), however, reflects an opposing or oscillating trend (e.g., Control > Impact densities during spring and fall, while Impact > Control during summer and winter; Figure 7). The Before-After, Control-Impact Seasonal interaction (P = 0.0037) and the marginal Before-After, Control-Impact interaction (P = 0.0991) help explain the inconsistencies in the above analyses and do not reflect a true environmental impact, but rather reflect a much smaller fall mean density for the Before-Impact grouping (Figure 8) and to a lesser extent lower Before-Control means. The other seasonal means (i.e., After-Control and After-Impact) appeared to be similar. Decapoda had a significant Seasonal trend (P = 0.0001) with mean densities lowest during the fall. Additional information is provided by the Before-After Seasonal trend (P = 0.0559) which was mostly a reflection of After spring density (8.62/m^3) being lower than Before (20.18). In the Polychaeta analysis, there was a Before-After Seasonal trend (P = 0.0112) which indicated that After mean densities

Table 6. BACI inshore construction impacts mixed model ANOVA on log-transformed densities with a Seasonal main effect for the LOOP pipeline and the Clovelly Storage Dome from February 1978 to August 1985 for HL gear only. Bonferroni-adjusted alpha level was 0.0167 for this family of tests.

Source of Variation	NDF	DDF	Type III F	Prob > F
Zooplankton Settled Volume				
BA	1	7	0.47	0.5132
CTRLIMPC	1	6	0.02	0.8853
BA*CTRLIMPC	1	55	0.18	0.6729
SEASON	3	529	1.98	0.1164
BA*SEASON	3	529	0.83	0.4768
CTRLIMPC*SEASON	3	529	0.33	0.8033
BA*CTRLIMPC*SEASON	3	529	0.42	0.7379
Penaeus aztecus				
BA	1	7	0.01	0.9416
CTRLIMPC	1	5	1.05	0.3527
BA*CTRLIMPC	1	47	1.22	0.2750
SEASON	2	341	1.68	0.1878
BA*SEASON	2	341	0.54	0.5859
CTRLIMPC*SEASON	2	341	2.94	0.0543
BA*CTRLIMPC*SEASON	2	341	0.42	0.6597
Osteichthyes				
BA	1	6	0.13	0.7260
CTRLIMPC	1	6	0.23	0.6489
BA*CTRLIMPC	1	54	0.22	0.6404
SEASON	3	499	1.54	0.2026
BA*SEASON	3	499	0.55	0.6476
CTRLIMPC*SEASON	3	499	0.38	0.7697
BA*CTRLIMPC*SEASON	3	499	0.86	0.4627

Table 7. BACI inshore construction impacts mixed model ANOVA on log-transformed densities with a Seasonal main effect for the LOOP pipeline and the Clovelly Storage Dome for a reduced time period (February 1978 to March 1983) using HL gear only. Bonferroni-adjusted alpha level was 0.01 for this family of tests.

Source of Variation	NDF	DDF	Type III F	Prob > F
Polychaeta				
BA	1	4	2.71	0.1752
CTRLIMPC	1	11	0.78	0.3949
BA*CTRLIMPC	1	58	0.41	0.5227
SEASON	3	454	0.76	0.5153
BA*SEASON	3	454	3.74	0.0112
CTRLIMPC*SEASON	3	454	0.45	0.7162
BA*CTRLIMPC*SEASON	3	454	0.53	0.6627
Gastropoda				
BA	1	4	0.46	0.5351
CTRLIMPC	1	11	0.06	0.8132
BA*CTRLIMPC	1	58	2.15	0.1478
SEASON	3	454	10.73	0.0001
BA*SEASON	3	454	1.78	0.1492
CTRLIMPC*SEASON	3	454	0.59	0.6191
BA*CTRLIMPC*SEASON	3	454	1.21	0.3050
Copepoda				
BA	1	5	0.98	0.3683
CTRLIMPC	1	11	0.23	0.6421
BA*CTRLIMPC	1	65	2.80	0.0991
SEASON	3	453	2.44	0.0637
BA*SEASON	3	453	4.79	0.0027
CTRLIMPC*SEASON	3	453	5.30	0.0013
BA*CTRLIMPC*SEASON	3	453	4.56	0.0037
***Acartia* spp.**				
BA	1	5	0.00	0.9560
CTRLIMPC	1	11	0.21	0.6561
BA*CTRLIMPC	1	65	0.05	0.8228
SEASON	3	453	14.49	0.0001
BA*SEASON	3	453	3.23	0.0222
CTRLIMPC*SEASON	3	453	1.99	0.1140
BA*CTRLIMPC*SEASON	3	453	0.94	0.4194

Decapoda

Source of Variation	NDF	DDF	Type III F	Prob > F
BA	1	3	0.99	0.3936
CTRLIMPC	1	11	0.05	0.8246
BA*CTRLIMPC	1	43	2.30	0.1366
SEASON	2	354	40.96	0.0001
BA*SEASON	2	354	2.91	0.0559
CTRLIMPC*SEASON	2	354	0.21	0.8076
BA*CTRLIMPC*SEASON	2	354	1.56	0.2114

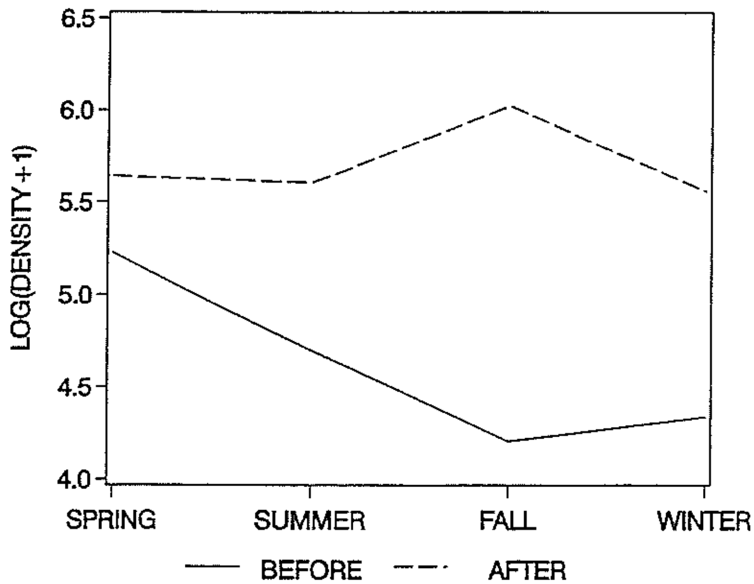

Figure 6. Log-transformed Copepoda mean densities (no./m^3) by Season for the Before and After time periods from the BACI inshore, reduced time interval, construction impact model. See Tables 4 and 7 and the text for further details.

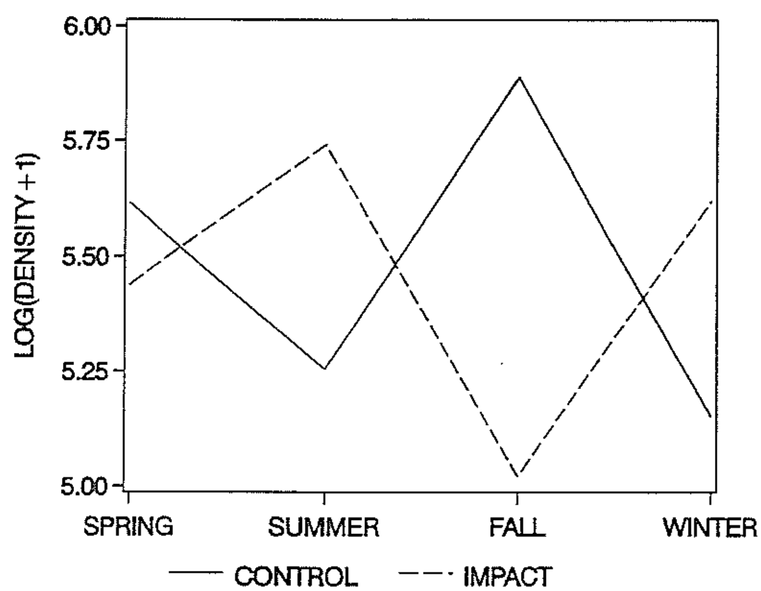

Figure 7. Log-transformed Copepoda mean densities (no./m^3) by Season for the Control and Impact stations from the BACI inshore, reduced time period, construction impacts model. See Tables 4 and 7 and the text for further details.

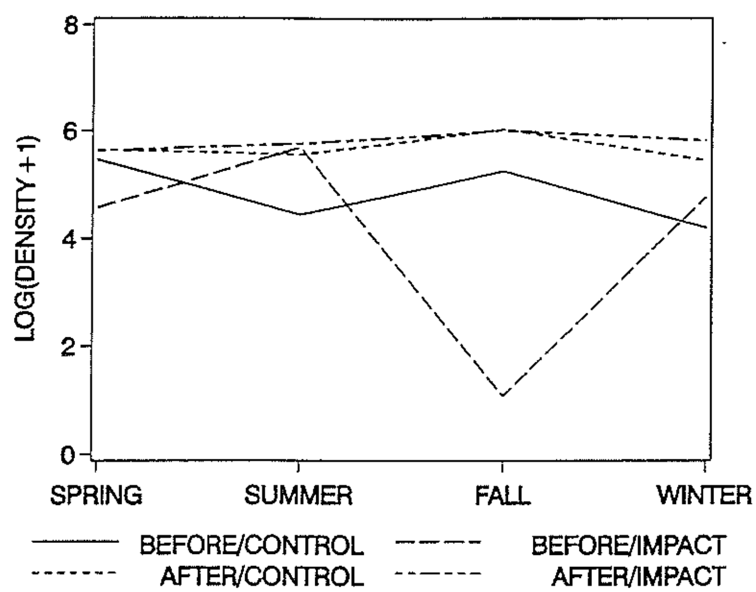

Figure 8. Log-transformed Copepoda mean densities (no./m^3) by Season for the Before-After time periods and Control-Impact stations from the BACI inshore, reduced time period, construction impacts model. See Tables 4 and 7 and the text for further details.

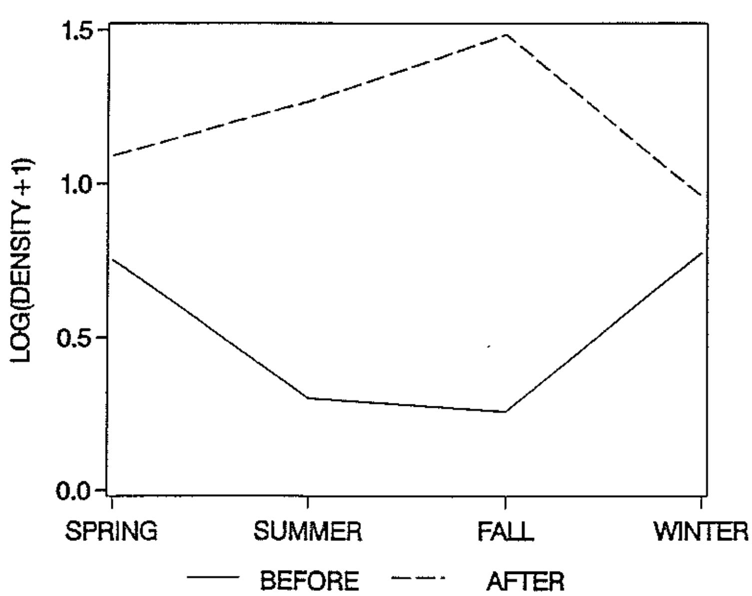

Figure 9. Log-transformed Polychaeta mean densities (no./m^3) by Season for the Before and After time periods from the BACI inshore, reduced time period, construction impacts model. See Tables 4 and 7 and the text for further details.

were consistently higher than Before, especially during the fall (Figure 9). The absence of Control-Impact (spatial) interactions makes this appear to be more of an annual trend than an environmental impact. Finally, Gastropoda displayed a highly significant Seasonal trend (P = 0.0001) with maximum and minimum mean seasonal densities during summer ($4.65/m^3$) and winter (0.47), respectively.

We also conducted a During- (Construction- March 1979 to March 1981) After, Control-Impact (DACI) Mixed Model ANOVA involving the inland pipeline and Clovelly Storage Dome station data sets extending through August 1985 (without oil or brine data), and excluding the relatively data-poor, pre-impact interval. Here again zooplankton biomass, *Penaeus aztecus* and Osteichthyes were analyzed. We did not run a shorter time span (as we did above) because the previously identified zooplankton data gap (from July 1982 to February 1983) would have adversely affected the shortened After time period. Our predetermined adjusted alpha level using Bonferroni was P = 0.0167 (i.e., three taxa tested). Within this Inshore Construction DACI Model, zooplankton biomass had a significant Seasonal interaction (P = 0.0005; Table 8) with highest zooplankton biomass means in winter ($2.60 ml/m^3$) and fall (1.75) compared to spring (1.52) and summer (1.33). Also of interest was the near significant During-After, Control-Impact interaction (P = 0.0428; Figure 10) which showed mean biomass for Impact stations to be greater During ($2.17 ml/m^3$) than After (1.48), while Control means were greater After (1.81) than During (1.70). When Impact station values decrease and Control station values increase in this fashion or even remain the same, it is indicative of possible environmental (construction-related) impact. *Penaeus aztecus* had no significant parameter effects. Osteichthyes had a significant Seasonal trend (P = 0.0023) which was mostly a reflection of minimum densities occurring in the fall. The significant During-After seasonal trend (P = 0.0046) revealed higher After mean densities in the spring and winter, while the During density was higher in the summer (Figure 11). There was also a marginally significant Control-Impact Seasonal interaction (P = 0.0962) whereby Impact stations had lower mean densities in spring and winter than Controls, yet had a higher mean density during the fall and approximately equal densities in the summer. Therefore, there was no clear environmental impact indicated.

Table 8. During-After, Control-Impact (DACI) inshore construction impacts mixed model ANOVA on log-transformed densities with a Seasonal main effect for the LOOP pipeline and the Clovelly Storage Dome from March 1979 to August 1985 for HL gear. Bonferroni-adjusted alpha level was 0.0167 for this family of tests.

Zooplankton Settled Volume

Source of Variation	NDF	DDF	Type III F	Prob > F
DA	1	6	0.07	0.7973
CTRLIMPC	1	8	0.00	0.9967
DA*CTRLIMPC	1	60	4.28	0.0428
SEASON	3	584	5.97	0.0005
DA*SEASON	3	584	0.96	0.4098
CTRLIMPC*SEASON	3	584	1.28	0.2806
DA*CTRLIMPC*SEASON	3	584	0.46	0.7093

Penaeus aztecus

Source of Variation	NDF	DDF	Type III F	Prob > F
DA	1	6	1.89	0.2183
CTRLIMPC	1	8	0.34	0.5733
DA*CTRLIMPC	1	60	2.20	0.1428
SEASON	3	580	0.96	0.4125
DA*SEASON	3	580	1.10	0.3485
CTRLIMPC*SEASON	3	580	0.61	0.6088
DA*CTRLIMPC*SEASON	3	580	0.79	0.4986

Osteichthyes

Source of Variation	NDF	DDF	Type III F	Prob > F
DA	1	6	0.12	0.7372
CTRLIMPC	1	8	0.14	0.7174
DA*CTRLIMPC	1	60	2.46	0.1219
SEASON	3	552	4.90	0.0023
DA*SEASON	3	552	4.39	0.0046
CTRLIMPC*SEASON	3	552	2.12	0.0962
DA*CTRLIMPC*SEASON	3	552	0.38	0.7652

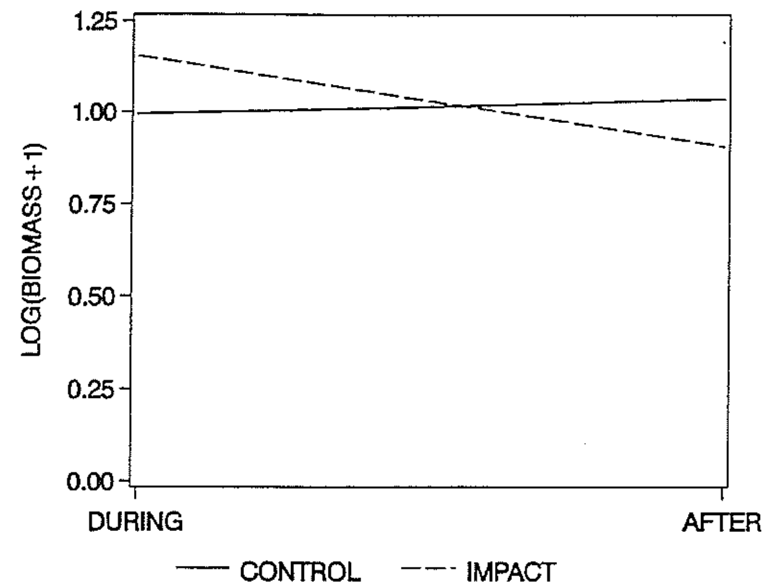

Figure 10. Log-transformed mean zooplankton biomass estimates (displacement volumes - ml/m^3) for the During-After time periods and Control-Impact stations from the DACI inshore, long-term, construction impact model. See Tables 4 and 8 and the text for further details.

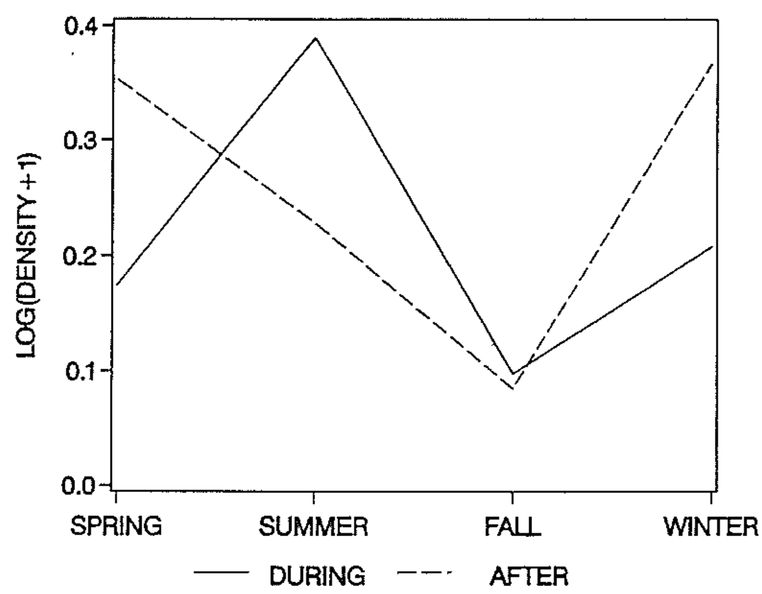

Figure 11. Log-transformed Osteichthyes mean densities (no./m^3) by Season for the During and After time periods from the DACI inshore, long-term, construction impacts model. See Tables 4 and 8 and the text for further details.

LOCAP Pipeline Analysis

No statistical analyses were conducted on potential environmental impacts associated with the construction or operation of the LOCAP pipeline utilizing the freshwater HS stations (i.e., 24-30, 465, 466, or 483) in the upper reach of the estuary because of their extremely short sampling durations, which also did not overlap construction/operation time periods.

Offshore Brine Diffuser DACI Models

We conducted a During-After, Control-Impact (DACI) Offshore Brine Diffuser (i.e., brine disposal site - Station 36) Mixed Model ANOVA, using a During time period from August 1980 to November 1983 to encompass the vast majority of continuous brine discharge (Figure 4) and an After time period from December 1983 to December 1995. The brine disposal data was used as a covariate and data consisted of OM stations only. Our predetermined adjusted alpha level using the Bonferroni correction was $P = 0.0033$ (i.e., 15 taxonomic groupings tested). Season entered all analyses as a main effect except for *Sciaenops ocellatus*. *Sciaenops ocellatus* occurred only during the months August through October (with one exception) in the database. Thus, only these months entered this analysis. This analysis was further modified by including Month, instead of Season, as a main effect.

This extended time period (August 1980 to December 1995) necessitated that we convert zooplankton settled volumes into zooplankton displacement volumes. We fit the following regression model to predict displacement volumes for the OM stations: Ln [(displacement vol./vol. of water filtered) + 1] = 0.666 Ln [(settled vol./vol. of water filtered) + 1] - 0.133 ($F = 3147.357$; $P \leq 0.0001$; $R^2 = 0.8613$; $N = 509$). Having done that, there was no significant brine effect for OM displacement volume. Without brine data, there was a trend towards After displacement volumes being greater than During (0.36 vs. 0.14 ml/m^3; $P = 0.0303$). In fact, no significant brine effects for any of the taxa analyzed under this statistical design were indicated; therefore, we will only discuss the Offshore Brine Diffuser DACI Mixed Model ANOVA results without the incorporation of the brine data set (Table 9).

Table 9. DACI offshore brine disposal impacts mixed model ANOVA on log-transformed densities with a Seasonal main effect at the Brine Diffuser from August 1980 to December 1995 for OM gear only. Bonferroni-adjusted alpha level was 0.0033 for this family of tests.

Source of Variation	NDF	DDF	Type III F	Prob > F
Zooplankton Settled Volume				
DA	1	15	5.72	0.0303
CTRLIMPC	1	2	0.00	0.9718
DA*CTRLIMPC	1	47	0.09	0.7637
SEASON	3	586	0.87	0.4552
DA*SEASON	3	586	2.03	0.1086
CTRLIMPC*SEASON	3	586	0.36	0.7815
DA*CTRLIMPC*SEASON	3	586	0.56	0.6419
Penaeus aztecus				
DA	1	15	1.78	0.2016
CTRLIMPC	1	2	0.33	0.6261
DA*CTRLIMPC	1	44	0.06	0.8027
SEASON	3	393	4.79	0.0027
DA*SEASON	3	393	0.76	0.5151
CTRLIMPC*SEASON	3	393	0.74	0.5279
DA*CTRLIMPC*SEASON	3	393	0.03	0.9929
Callinectes sapidus				
DA	1	14	0.13	0.7284
CTRLIMPC	1	2	0.16	0.7301
DA*CTRLIMPC	1	41	0.07	0.7860
SEASON	3	389	7.85	0.0001
DA*SEASON	3	389	0.50	0.6794
CTRLIMPC*SEASON	3	389	0.65	0.5839
DA*CTRLIMPC*SEASON	3	389	0.19	0.9054
Callinectes similis				
DA	1	14	4.29	0.0572
CTRLIMPC	1	2	0.00	0.9926
DA*CTRLIMPC	1	41	0.03	0.8546
SEASON	3	387	0.62	0.6051
DA*SEASON	3	387	0.73	0.5353
CTRLIMPC*SEASON	3	387	0.86	0.4623
DA*CTRLIMPC*SEASON	3	387	0.83	0.4756

Brevoortia patronus

Source of Variation	NDF	DDF	Type III F	Prob > F
DA	1	15	1.11	0.3097
CTRLIMPC	1	2	0.00	0.9596
DA*CTRLIMPC	1	39	0.67	0.4188
SEASON	1	244	0.48	0.4913
DA*SEASON	1	244	1.03	0.3105
CTRLIMPC*SEASON	1	244	1.32	0.2517
DA*CTRLIMPC*SEASON	1	244	1.88	0.1713

Anchoa spp.

DA	1	14	3.08	0.1010
CTRLIMPC	1	2	0.00	0.9684
DA*CTRLIMPC	1	38	0.17	0.6835
SEASON	3	371	18.45	0.0001
DA*SEASON	3	371	2.32	0.0755
CTRLIMPC*SEASON	3	371	0.03	0.9936
DA*CTRLIMPC*SEASON	3	371	0.07	0.9769

Myctophidae

DA	1	14	2.72	0.1211
CTRLIMPC	1	2	0.00	0.9826
DA*CTRLIMPC	1	38	0.00	0.9771
SEASON	1	176	0.30	0.5841
DA*SEASON	1	176	1.24	0.2660
CTRLIMPC*SEASON	1	176	0.01	0.9388
DA*CTRLIMPC*SEASON	1	176	0.07	0.7908

Chloroscombrus chrysurus

DA	1	14	1.20	0.2926
CTRLIMPC	1	2	0.57	0.5291
DA*CTRLIMPC	1	38	0.66	0.4201
SEASON	2	256	25.28	0.0001
DA*SEASON	2	256	2.62	0.0745
CTRLIMPC*SEASON	2	256	0.47	0.6226
DA*CTRLIMPC*SEASON	2	256	0.41	0.6647

Cynoscion arenarius

DA	1	12	0.06	0.8182
CTRLIMPC	1	2	0.92	0.4382
DA*CTRLIMPC	1	32	0.73	0.3978
SEASON	1	154	7.45	0.0071
DA*SEASON	1	154	1.71	0.1929
CTRLIMPC*SEASON	1	154	1.20	0.2758
DA*CTRLIMPC*SEASON	1	154	1.05	0.3062

Source of Variation	NDF	DDF	Type III F	Prob > F
Sciaenops ocellatus				
DA	1	13	2.48	0.1396
CTRLIMPC	1	2	0.00	0.9709
DA*CTRLIMPC	1	34	0.02	0.8900
MONTH	2	31	0.79	0.4642
DA*MONTH	2	31	1.61	0.2164
CTRLIMPC*MONTH	2	31	1.09	0.3473
DA*CTRLIMPC*MONTH	2	31	0.78	0.4672
Blenniidae				
DA	1	14	3.81	0.0713
CTRLIMPC	1	2	0.52	0.5453
DA*CTRLIMPC	1	38	0.77	0.3859
SEASON	3	367	3.72	0.0117
DA*SEASON	3	367	2.26	0.0809
CTRLIMPC*SEASON	3	367	0.46	0.7088
DA*CTRLIMPC*SEASON	3	367	0.57	0.6331
Gobiidae				
DA	1	14	0.89	0.3603
CTRLIMPC	1	2	0.20	0.6960
DA*CTRLIMPC	1	38	0.01	0.9175
SEASON	3	374	1.73	0.1612
DA*SEASON	3	374	2.93	0.0333
CTRLIMPC*SEASON	3	374	0.28	0.8381
DA*CTRLIMPC*SEASON	3	374	0.26	0.8516
Scombridae				
DA	1	14	0.00	0.9955
CTRLIMPC	1	2	0.20	0.7013
DA*CTRLIMPC	1	38	0.16	0.6872
SEASON	3	350	3.35	0.0194
DA*SEASON	3	350	0.23	0.8769
CTRLIMPC*SEASON	3	350	0.47	0.7068
DA*CTRLIMPC*SEASON	3	350	0.16	0.9206
***Peprilus* spp.**				
DA	1	14	0.71	0.4150
CTRLIMPC	1	2	0.32	0.6292
DA*CTRLIMPC	1	38	0.81	0.3736
SEASON	3	359	0.22	0.8815
DA*SEASON	3	359	1.07	0.3624
CTRLIMPC*SEASON	3	359	0.20	0.8991
DA*CTRLIMPC*SEASON	3	359	0.09	0.9657

Bothidae

Source of Variation	NDF	DDF	Type III F	Prob > F
DA	1	14	2.78	0.1176
CTRLIMPC	1	2	1.95	0.2970
DA*CTRLIMPC	1	38	1.56	0.2194
SEASON	3	372	0.73	0.5340
DA*SEASON	3	372	0.67	0.5716
CTRLIMPC*SEASON	3	372	0.98	0.4026
DA*CTRLIMPC*SEASON	3	372	1.21	0.3069

Of interest for the *Penaeus aztecus* analysis was a significant Seasonal effect (P = 0.0027). *Penaeus aztecus* densities were highest during winter (0.09 postlarvae/m^3). *Callinectes sapidus* also had a significant Seasonal effect (P= 0.0001) with densities highest in summer (0.34 megalopa/m^3) and lowest in winter (0.01) and spring (0.05). *Callinectes similis*, *Brevoortia patronus*, Myctophidae, *Sciaenops ocellatus*, Gobiidae, Scombridae, *Peprilus* spp. and Bothidae had no significant main effects. However, *C. similis* had an interesting, yet non-significant, During-After effect (P = 0.0572) with After densities (0.14 megalopa/m^3) being greater than During (0.01); Gobiidae had a slight During-After Seasonal trend (P = 0.0333) with spring time After densities (1.4 larvae/100m^3) higher than During (0.2) but the situation reversed in the fall (After = 0.2; During = 0.6); and Scombridae had a marginal Seasonal trend (P = 0.0194) with densities highest in summer (1.2/100m^3) followed by spring (0.7). The DACI Offshore Brine Diffuser analysis for *Anchoa* spp. had a significant Seasonal effect (P = 0.0001) with highest densities in summer (97.8 larvae/100m^3) and spring (96.3) versus winter (5.3) and fall (1.3), and a somewhat interesting During-After Seasonal interaction (P = 0.0755) with After summer (120.0 larvae/100m^3) and spring (119.3) densities higher than During (summer = 48.4; spring = 43.0) and the remaining seasonal combinations being approximately equal. *Chloroscombrus chrysurus* displayed a significant Seasonal trend (P = 0.0001) with highest densities in summer (21.4 larvae/100m^3 versus spring and fall = 0.6), and with During summer mean density (32.1 larvae/100m^3) being greater than After (17.7; During-After Seasonal interaction P = 0.0745). *Cynoscion arenarius* also had a marginally significant Seasonal trend (P = 0.0071) with mean summer density (14.8 larvae/100m^3) exceeding that for spring (3.1). Finally the DACI Offshore Brine Diffuser analysis for Blenniidae had a marginal Seasonal effect (P = 0.0117) with spring (5.4 larvae/100m^3) followed by summer densities (2.3) being the highest. Also of interest was a During-After effect (P = 0.0713) and During-After Seasonal trend (P = 0.0809), where, overall, After densities were greater than During, especially in spring and summer (Figure 12). The absence of Control-Impact interactions, however, makes this simply a temporal (annual) effect rather than an indication of environmental impact.

We conducted another DACI analysis of the Offshore Brine Diffuser site, using a During time period of May 1980 to November 1983, the brine disposal data as a

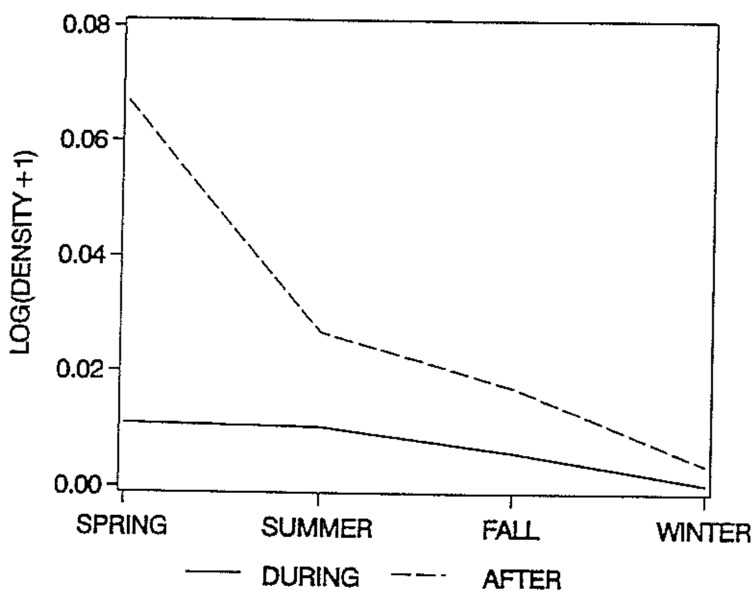

Figure 12. Log-transformed Blenniidae mean densities (no./m^3) by Season for the During and After time periods from the DACI, long-term Brine Diffuser impacts model. See Tables 4 and 9 and the text for further details.

covariate, and a reduced post-impact period of December 1983 to July 1986, as necessitated by the HL station data. There was no detectable brine effect on the HL station zooplankton biomass data (settled volume), which was the only zooplankton or ichthyoplankton data set that was consistent throughout the time period (i.e., not plagued by the February 1984 through July 1986 organism identification data gap at those stations). The Mixed Model ANOVA was then run without brine. There was a significant Seasonal effect (P= 0.0011; Table 10) with spring and summer biomass estimates greater than fall and winter; and a significant During-After Seasonal trend (P = 0.0029) with After densities for the winter and spring being greater than Before (Figure 13). Also of interest are the During-After effect (P = 0.0510) with After biomass estimates greater than During, and the During-After, Control-Impact interaction (P= 0.0566) which had Impact station estimates less than Control estimates within the During period and greater than Control estimates in the After (Figure 14).

Long-term LOOP Offshore Terminal Oil Impacts CI Model

To test for Long-Term, Offshore Terminal Oil Impacts, we conducted a Control-Impact (CI) Mixed Model ANOVA utilizing oil spill data from the LOOP Offshore Terminal for the period between May 1981 to December 1994. Oil was a covariate and Year and Season were main effects. We used only OM sampling stations because they had the best temporal and spatial coverage. We used the previously developed regression for converting OM zooplankton settled volumes to displacement volumes. The reader is cautioned, however, that only zooplankton biomass had data for the complete CI time period. The data sets for the other taxonomic groupings usually ended in 1989 or 1990 and the test time periods were adjusted accordingly. Our predetermined adjusted alpha level using the Bonferroni correction was P = 0.0033 (i.e., 15 taxa tested).

The oil covariate was not significant in the zooplankton biomass (displacement volume) analysis, nor were there any significant Control-Impact interactions (Table 11). There were significant or marginally significant Seasonal trends with biomass estimates being greatest in spring (0.49 ml/m^3) and lowest in summer (0.3 ml/m^3; P = 0.0161), and no clear Year (P = 0.0079; Figure 15) or Year-Season (P = 0.0003) trends.

Table 10. DACI offshore brine disposal impacts mixed model ANOVA on log-transformed zooplankton settled volume with a Seasonal main effect at the Brine Diffuser for a reduced time period (May 1980 to July 1986) using HL gear only.

Source of Variation	NDF	DDF	Type III F	Prob > F
DA	1	6	5.92	0.0510
CTRLIMPC	1	2	0.59	0.5234
DA*CTRLIMPC	1	20	4.09	0.0566
SEASON	3	219	5.54	0.0011
DA*SEASON	3	219	4.80	0.0029
CTRLIMPC*SEASON	3	219	0.63	0.5954
DA*CTRLIMPC*SEASON	3	219	1.40	0.2443

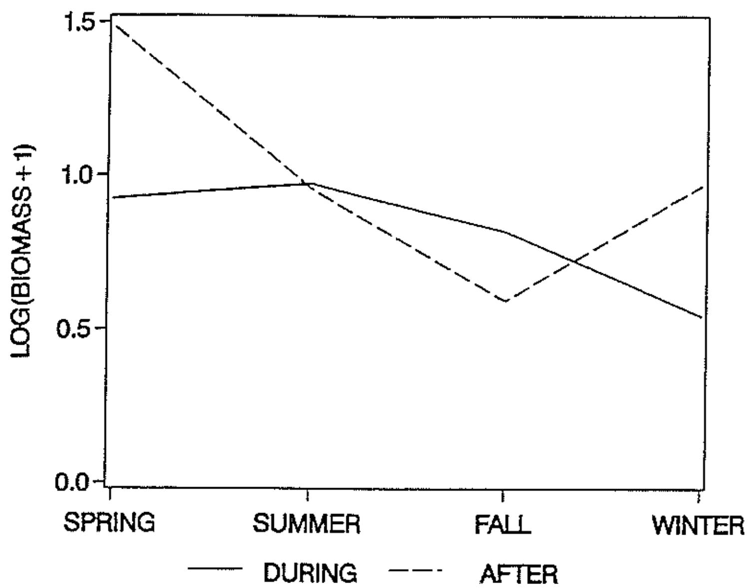

Figure 13. Log-transformed zooplankton biomass estimates (settled volumes - ml/m^3) by season for the During and After time periods from the DACI reduced, long-term Brine Diffuser impacts model run on HL stations only. See Tables 4 and 10 and the text for further details.

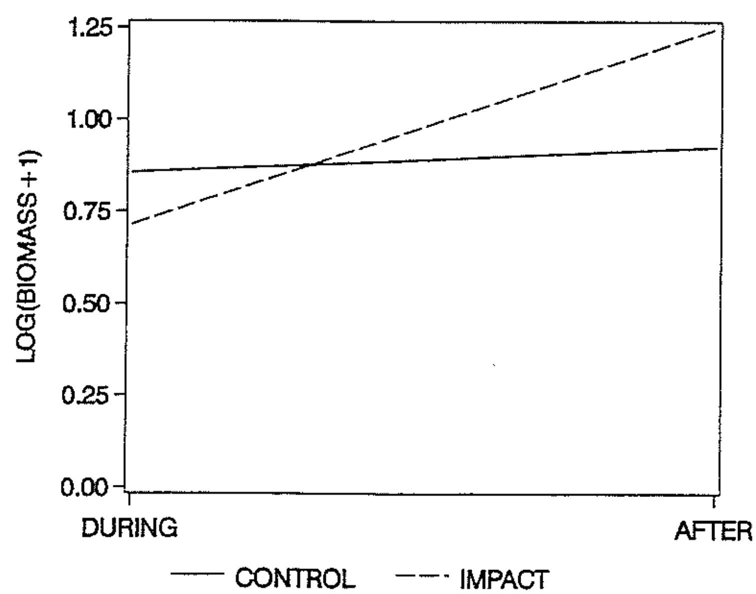

Figure 14. Log-transformed zooplankton biomass estimates (settled volumes - ml/m^3) for the During and After time periods and the Control and Impact stations from the DACI reduced, long-term Brine Diffuser impacts model run on HL stations only. See Tables 4 and 10 and the text for further details.

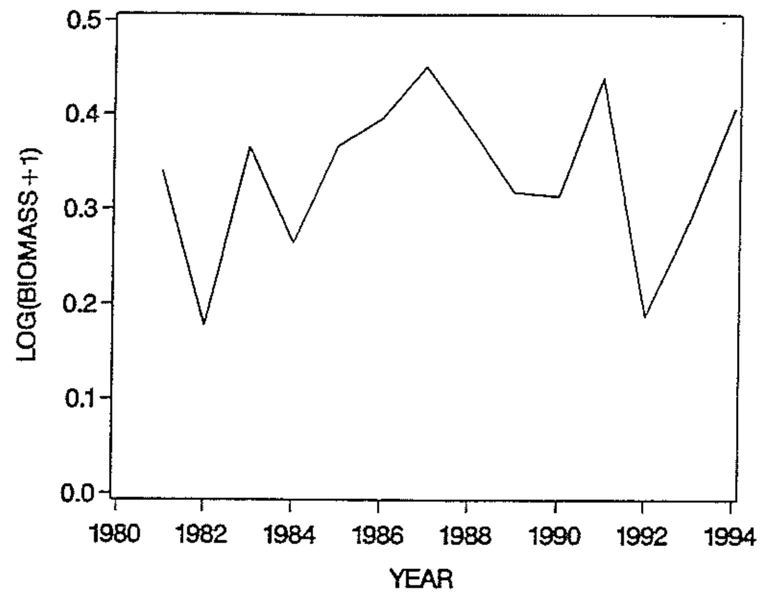

Figure 15. Log-transformed mean annual zooplankton biomass estimates (displacement volume - ml/m^3) from May 1981 to December 1994 associated with the Offshore Terminal Control and Impact stations. See Tables 4 and 11 and the text for further details.

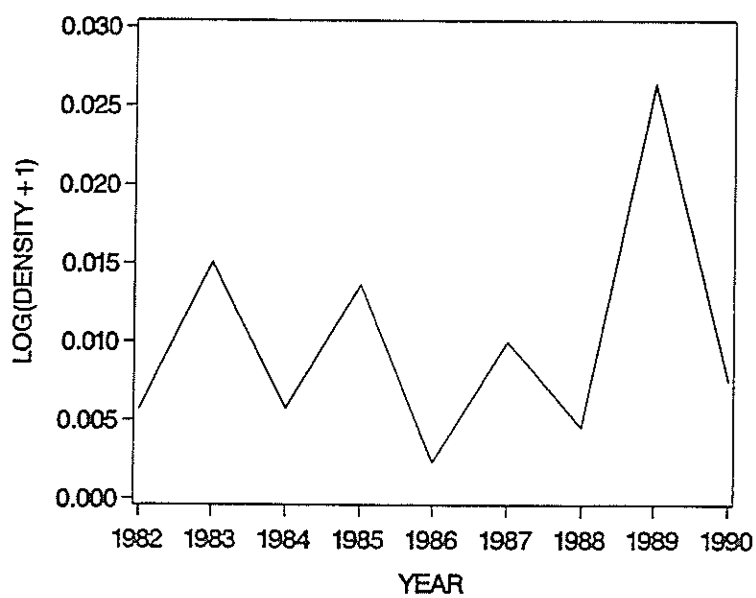

Figure 16. Log-transformed *Penaeus aztecus* mean annual densities (no./m^3) from June 1982 to February 1990 associated with the Offshore Terminal Control and Impact stations. See Tables 4 and 11 and the text for further details.

Table 11. Control-Impact, Offshore Terminal Oil impact mixed model ANOVA on log-transformed densities with platform oil data as a covariate and Season and Year as main effects from May 1981 to December 1994 for OM gear only. Bonferroni-adjusted alpha level was 0.003 for this family of tests. Note that specific time periods for individual taxa varied and are listed within Table 4.

Source of Variation	NDF	DDF	Type III F	Prob > F
Zooplankton Displacement Volume				
OIL	1	481	0.02	0.8914
CTRLIMPC	1	5	3.32	0.1282
SEASON	3	15	4.74	0.0161
CTRLIMPC*SEASON	3	15	0.51	0.6845
YEAR	13	32	2.85	0.0079
CTRLIMPC*YEAR	13	32	0.47	0.9283
YEAR*SEASON	37	481	2.08	0.0003
CTRLIMPC*YEAR*SEASON	37	481	0.62	0.9605
Penaeus aztecus				
OIL	1	218	0.00	0.9572
CTRLIMPC	1	5	0.01	0.9166
SEASON	3	15	13.90	0.0001
CTRLIMPC*SEASON	3	15	1.46	0.2641
YEAR	8	19	2.79	0.0316
CTRLIMPC*YEAR	8	19	0.75	0.6513
YEAR*SEASON	20	218	2.81	0.0001
CTRLIMPC*YEAR*SEASON	20	218	0.59	0.9204
Callinectes sapidus				
OIL	1	206	0.15	0.7017
CTRLIMPC	1	5	0.01	0.9083
SEASON	3	15	13.55	0.0002
CTRLIMPC*SEASON	3	15	10.79	0.0005
YEAR	7	15	41.87	0.0001
CTRLIMPC*YEAR	7	15	10.98	0.0001
YEAR*SEASON	19	206	29.66	0.0001
CTRLIMPC*YEAR*SEASON	19	206	6.02	0.0001
Callinectes similis				
OIL	1	233	0.00	0.9542
CTRLIMPC	1	5	0.03	0.8766
SEASON	3	15	2.92	0.0683
CTRLIMPC*SEASON	3	15	0.29	0.8328
YEAR	9	20	2.65	0.0333
CTRLIMPC*YEAR	9	20	0.31	0.9625
YEAR*SEASON	22	233	2.80	0.0001
CTRLIMPC*YEAR*SEASON	22	233	0.32	0.9987

Portunus spp.

Source of Variation	NDF	DDF	Type III F	Prob > F
OIL	1	219	0.03	0.8712
CTRLIMPC	1	5	0.33	0.5906
SEASON	3	15	6.03	0.0066
CTRLIMPC*SEASON	3	15	0.08	0.9714
YEAR	7	16	5.79	0.0018
CTRLIMPC*YEAR	7	16	0.91	0.5240
YEAR*SEASON	20	219	2.49	0.0007
CTRLIMPC*YEAR*SEASON	20	219	0.57	0.9332

Brevoortia patronus

OIL	1	96	0.60	0.4419
CTRLIMPC	1	5	0.04	0.8554
SEASON	1	5	10.06	0.0248
CTRLIMPC*SEASON	1	5	0.35	0.5810
YEAR	8	19	2.12	0.0849
CTRLIMPC*YEAR	8	19	0.37	0.9244
YEAR*SEASON	6	96	2.06	0.0656
CTRLIMPC*YEAR*SEASON	6	96	0.16	0.9858

Anchoa spp.

OIL	1	164	2.75	0.0991
CTRLIMPC	1	5	1.03	0.3563
SEASON	2	10	11.82	0.0023
CTRLIMPC*SEASON	2	10	0.19	0.8329
YEAR	8	17	6.44	0.0006
CTRLIMPC*YEAR	8	17	1.04	0.4450
YEAR*SEASON	14	164	1.24	0.2510
CTRLIMPC*YEAR*SEASON	14	164	0.56	0.8909

Myctophidae

OIL	1	161	0.00	0.9599
CTRLIMPC	1	5	0.01	0.9180
SEASON	2	10	18.40	0.0004
CTRLIMPC*SEASON	2	10	0.02	0.9823
YEAR	8	19	2.96	0.0247
CTRLIMPC*YEAR	8	19	0.12	0.9978
YEAR*SEASON	13	161	1.58	0.0962
CTRLIMPC*YEAR*SEASON	13	161	0.02	1.0000

Chloroscombrus chrysurus

OIL	1	89	0.03	0.8696
CTRLIMPC	1	5	3.57	0.1173
SEASON	1	5	0.04	0.8557
CTRLIMPC*SEASON	1	5	0.06	0.8181
YEAR	7	15	2.61	0.0565
CTRLIMPC*YEAR	7	15	1.44	0.2596
YEAR*SEASON	6	89	1.98	0.0770
CTRLIMPC*YEAR*SEASON	6	89	2.51	0.0271

Cynoscion arenarius.

Source of Variation	NDF	DDF	Type III F	Prob > F
OIL	1	161	0.07	0.7891
CTRLIMPC	1	5	1.15	0.3330
SEASON	2	10	1.97	0.1903
CTRLIMPC*SEASON	2	10	0.98	0.4101
YEAR	7	16	0.85	0.5656
CTRLIMPC*YEAR	7	16	0.53	0.7978
YEAR*SEASON	13	161	1.36	0.1846
CTRLIMPC*YEAR*SEASON	13	161	0.55	0.8913

Blenniidae

OIL	1	210	0.09	0.7680
CTRLIMPC	1	5	0.00	0.9624
SEASON	3	15	6.67	0.0044
CTRLIMPC*SEASON	3	15	0.34	0.7933
YEAR	8	17	0.80	0.6110
CTRLIMPC*YEAR	8	17	0.46	0.8645
YEAR*SEASON	19	210	1.80	0.0247
CTRLIMPC*YEAR*SEASON	19	210	0.39	0.9908

Scombridae

OIL	1	128	0.23	0.6309
CTRLIMPC	1	5	0.01	0.9293
SEASON	1	5	0.66	0.4536
CTRLIMPC*SEASON	1	5	1.29	0.3081
YEAR	8	17	3.70	0.0111
CTRLIMPC*YEAR	8	17	0.38	0.9177
YEAR*SEASON	7	128	1.04	0.4069
CTRLIMPC*YEAR*SEASON	7	128	0.69	0.6807

***Peprilus* spp.**

OIL	1	128	0.00	0.9657
CTRLIMPC	1	5	0.55	0.4920
SEASON	2	9	0.36	0.7069
CTRLIMPC*SEASON	2	9	0.67	0.5364
YEAR	7	13	0.54	0.7888
CTRLIMPC*YEAR	7	13	0.42	0.8742
YEAR*SEASON	9	128	0.75	0.6580
CTRLIMPC*YEAR*SEASON	9	128	0.79	0.6251

Bothidae

OIL	1	213	0.00	0.9499
CTRLIMPC	1	5	0.97	0.3705
SEASON	3	15	2.37	0.1114
CTRLIMPC*SEASON	3	15	0.84	0.4919
YEAR	8	17	1.23	0.3392
CTRLIMPC*YEAR	8	17	0.57	0.7846
YEAR*SEASON	20	213	1.10	0.3540
CTRLIMPC*YEAR*SEASON	20	213	0.79	0.7235

Symphurus spp.

Source of Variation	NDF	DDF	Type III F	Prob > F
OIL	1	163	0.00	0.9511
CTRLIMPC	1	5	1.19	0.3250
SEASON	2	10	0.44	0.6531
CTRLIMPC*SEASON	2	10	0.31	0.7399
YEAR	8	17	1.77	0.1530
CTRLIMPC*YEAR	8	17	0.69	0.6933
YEAR*SEASON	15	163	0.88	0.5900
CTRLIMPC*YEAR*SEASON	15	163	0.29	0.9954

For the *Penaeus aztecus* analysis, the oil covariate was not significant, nor were there any significant Control-Impact effects. There was a significant Seasonal effect (P = 0.0001) and Year-Season interaction (P = 0.0001) and a marginally significant Year effect (P = 0.0316). Mean seasonal densities were much higher in winter (0.03 postlarvae/m^3; next highest seasonal density occurring in fall = 0.007), which was also reflected in the Year-Season interaction that had an alternating pattern between years with a high density year being followed by a low (Figure 16), especially during the winter and fall seasons.

For the *Callinectes sapidus* analysis, the oil covariate was not significant. There were, however, significant Control-Impact-Season (P = 0.0005), Control-Impact-Year (P = 0.0001), and Control-Impact-Year-Season (P = 0.0001) interactions which needed investigation. These interactions, however, provided no indication of impact. In general spring mean densities (0.29 megalopa/m^3) were higher than summer (0.08) and fall (0.05), which were higher than winter (0.008; Seasonal effect P = 0.0002). Within the Control-Impact-Season interaction, Control mean densities were higher than Impact in spring, but Impact densities were higher than Control in summer. Within the Control-Impact-Year interaction Control mean densities were lower than Impact in 1981, but higher in 1982. In general the densities for 1981 and 1982 were much greater than the remaining years (Year effect P = 0.0001; note no data for 1983). For example, the high spring density in 1982 was the dominant source of variation in the Year-Season interaction (P = 0.0001), followed by the high summer and fall densities in 1981. Within the Control-Impact-Year-Season interaction, once again 1981 and 1982 provided the dominant source of variation. While both Control and Impact densities were high in the summer of 1981, Impact estimates were much larger than Control. However, Control densities in the spring of 1982 were much higher than Impact, which were also large relative to other Control-Impact-Year-Season combinations (Figure 17). In other words, there was absolutely no clear trend in any of the above *C. sapidus* data to indicate Offshore Terminal impact.

For the *C. similis* analysis, the oil covariate was not significant, nor were there any significant Control-Impact effects. There was a marginally significant Seasonal

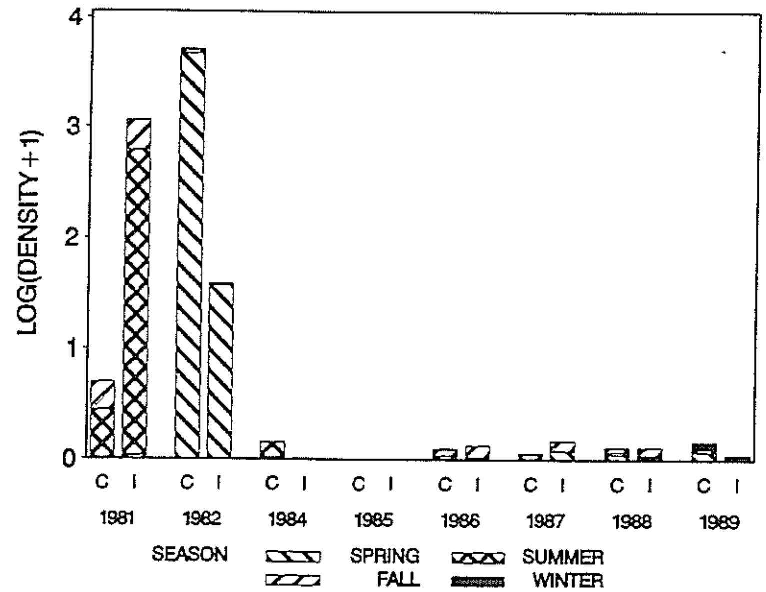

Figure 17. Log-transformed *Callinectes sapidus* mean annual densities (no./m^3) by Season for Control and Impact stations from the Control-Impact (CI) Offshore Terminal oil impact analysis. The time period tested was from May 1981 to December 1989. Note the absence of 1983 data. See Tables 4 and 11 and the text for further details.

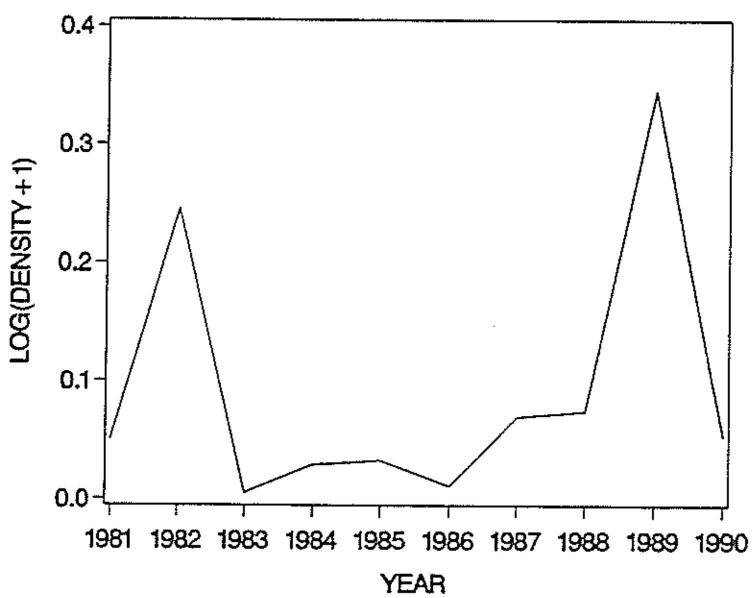

Figure 18. Log-transformed *Callinectes similis* mean annual densities (no./m^3) from May 1981 to February 1990 associated with the Offshore Terminal Control and Impact stations. See Tables 4 and 11 and the text for further details.

effect (P = 0.0683) with mean densities for winter (0.16 megalopa/m^3) and spring (0.14) being higher than summer (0.02) and fall (0.07), and a marginally significant Year effect (P = 0.0333) which indicated that 1982 (0.28/m^3) and 1989 (0.41) were exceptionally high years (Figure 18). The significant Year-Season interaction (P = 0.0001) was driven by the fact that the spring density was highest in 1982, while in 1989 it was the fall and winter.

For the *Portunus* spp. analysis, the oil covariate was not significant, nor were there any significant Control-Impact interactions. There was a marginal Seasonal effect (P = 0.0066) where highest mean densities were recorded in spring (0.14 megalopa/m^3) followed by fall (0.06). There was a significant Year effect (P = 0.0018) and Year-Season interaction (P = 0.0007) with highest mean densities seen in 1982 and 1988 (Figure 19), especially during the spring, and a secondary abundance peak in 1985 during the winter.

For the larval fish taxa tested, only *Anchoa* spp. had even a marginally significant oil covariate effect (P = 0.0991). The relationship between *Anchoa* spp. densities and Offshore Terminal oil spill data, however, is not strong (Figure 20). The inverse or negative relationship is heavily influenced by the five highest oil spill observations. In addition, there were no other impact indications to additionally support the relationship, i.e., no significant Control-Impact effect. There was a significant Seasonal effect (P = 0.0023) with spring mean density (46.86 larvae/100m^3) higher than summer (21.33) and winter (1.18; no fall season). The Year effect was also significant (P = 0.0006) and revealed an extremely high 1982 density (Figure 21).

For the *Chloroscombrus chrysurus* analysis, the oil covariate was not significant, but there was a marginally significant Control-Impact-Year-Season interaction (P = 0.0271) which warranted further consideration. To help explain this spatial-temporal interaction, we will first discuss its various temporal components. There was a marginally significant Year effect (P = 0.0565) which reflected a high annual density for 1981 (11.35 larvae/100m^3) and 1982 (18.03), and to a much lesser extent for 1985 (5.77; note no 1983 data; Figure 22). The Year-Season interaction was also marginally significant [P = 0.0770; note only analyzed spring/summer (months = 5, 6 and 7) and summer/fall (months = 8, 9 and 10) Seasons] which mostly reflected spring/summer

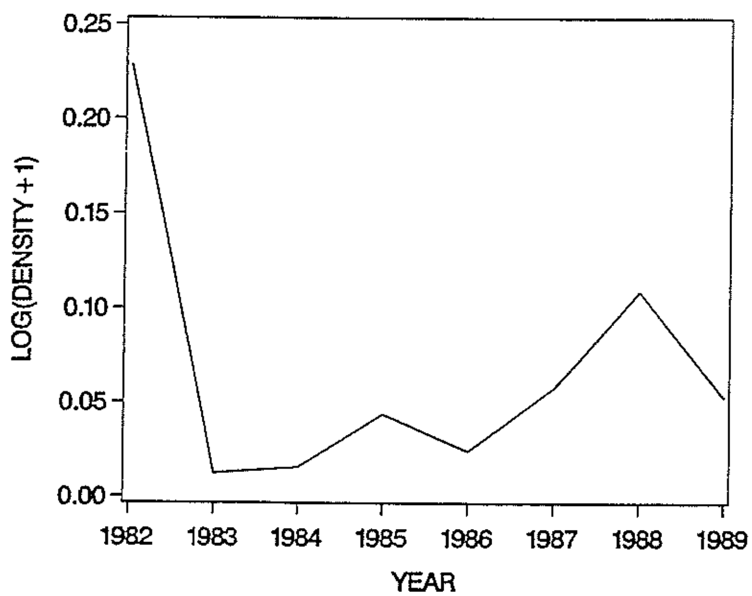

Figure 19. Log-transformed *Portunus* spp. mean annual densities (no./m^3) from April 1982 to December 1989 associated with the Offshore Terminal Control and Impact stations. See Tables 4 and 11 and the text for further details.

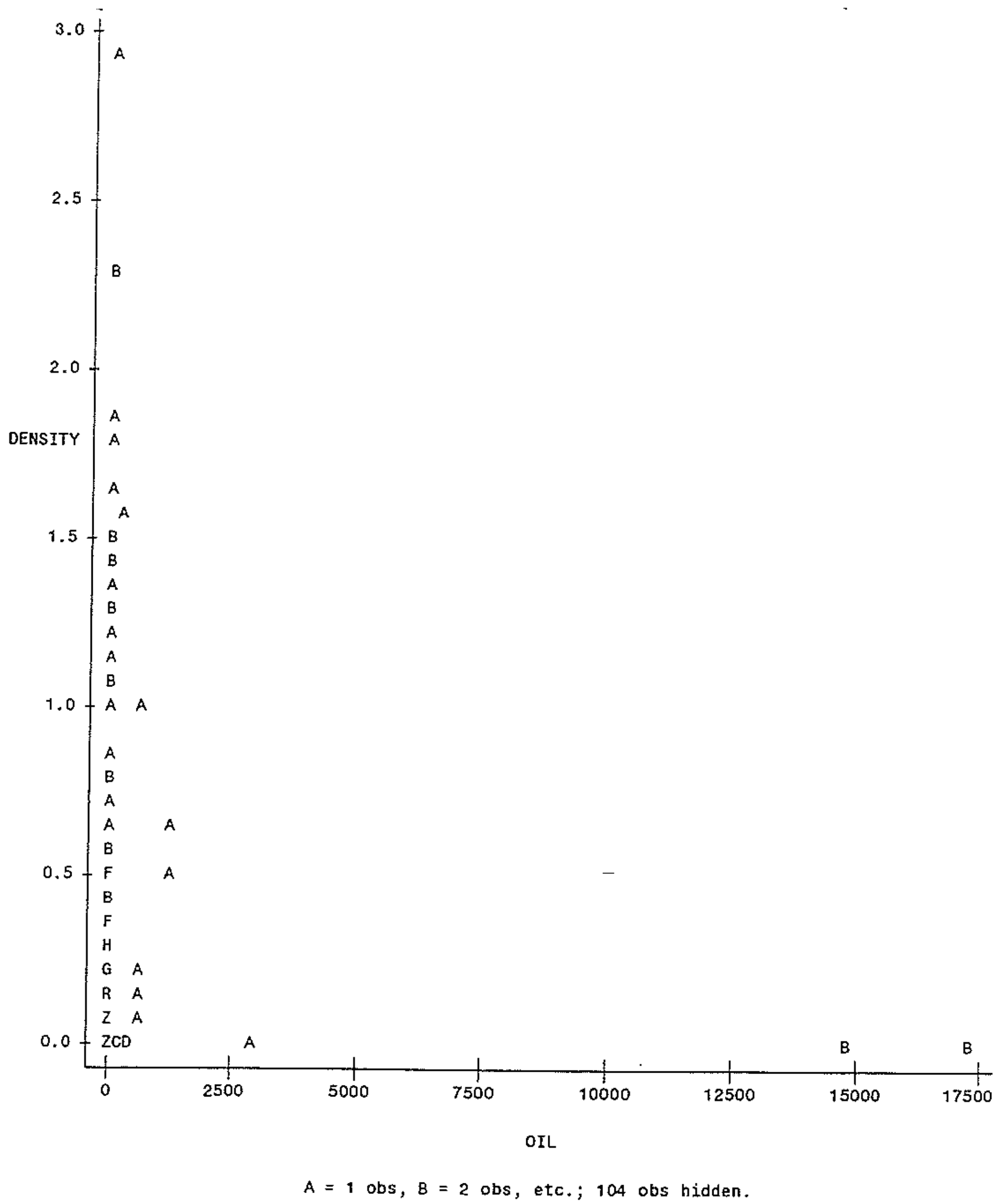

Figure 20. Log-transformed *Anchoa* spp. densities (no./m^3) from Impact stations associated with the Offshore Terminal (i.e., stations 53 and 55) plotted against offshore LOOP - related oil spill data (gallons). See Tables 4 and 11 for additional information.

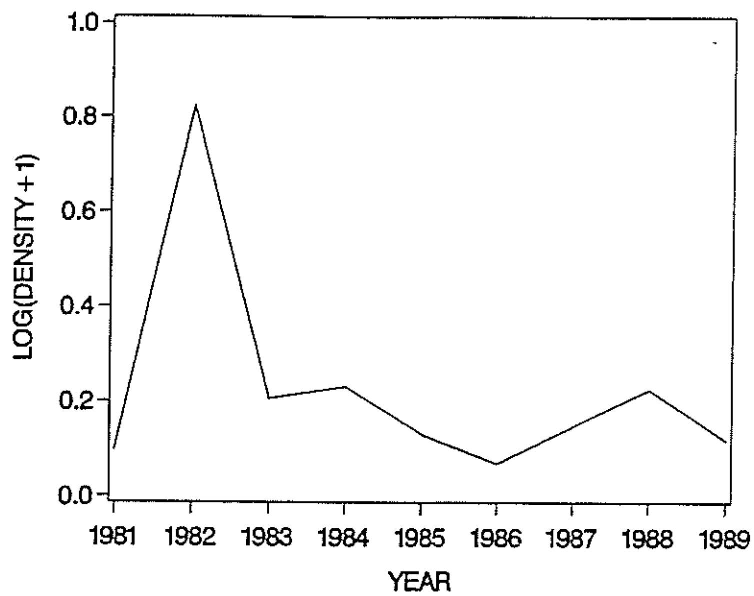

Figure 21. Log-transformed *Anchoa* spp. mean annual densities (no./m^3) from June 1981 to September 1989 associated with the Offshore Terminal Control and Impact stations. See Tables 4 and 11 and the text for further details.

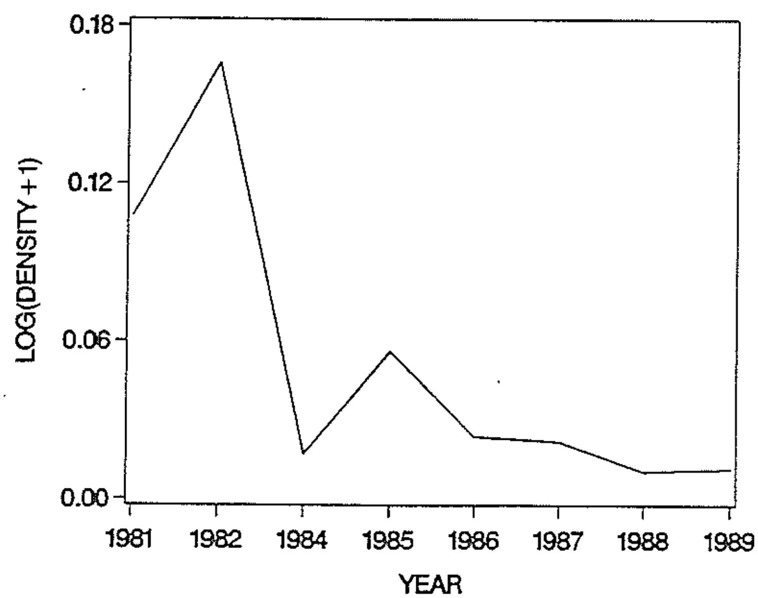

Figure 22. Log-transformed *Chloroscombrus chrysurus* mean annual densities (no./m^3) from August 1981 to September 1989 associated with the Offshore Terminal Control and Impact stations. Note absence of 1983 data. See Tables 4 and 11 and the text for further details.

densities being higher than summer/fall densities in 1982, whereas the reverse was true in 1985. The Control-Impact-Year-Season interaction was mostly a reflection of Control densities during the summer/fall of 1981 (13.97 larvae/100m^3) and 1985 (45.27) being an order of magnitude greater than Impact densities (3.84 and 0.81, respectively). Control densities were also an order of magnitude greater in the spring/summer period in 1982 (63.82) than Impact densities (4.24; Figure 23).

The rest of the ichthyoplankton taxa analyses indicated that oil as a covariate was not significant, nor were there any significant Control-Impact interactions. *Cynoscion arenarius*, *Peprilus* spp., Bothidae and *Symphurus* spp. had no significant Season or Year main effects or interactions. Therefore, for the remainder of the Results section, we will just discuss Seasonal and Yearly effects or Year-Season interaction for the remaining taxa tested.

Brevoortia patronus had a marginally significant Seasonal effect (P = 0.0248) with mean winter densities (70.10 larvae/100m^3) greater than fall (27.63; no spring and summer seasons). There was also a marginally significant Year effect (P = 0.0849) with no clear annual trend (Figure 24) and a marginally significant Year-Season interaction (P = 0.0656), which indicated that yearly winter densities were greater than fall except in 1986.

Myctophidae had a significant Seasonal effect (P = 0.0004) whereby mean winter densities (9.72 larvae/100m^3) were an order of magnitude greater than fall (0.96) and spring (0.93; no summer data). There was also a marginally significant Year effect (P = 0.0247), which reflected a density maximum in 1988 with secondary peaks in 1985 and 1986. Myctophidae also had a marginally significant Year-Season interaction (P = 0.0962) with no apparent temporal trend, except that the winter season was dominant (Figure 25).

Blenniidae had a marginally significant Seasonal effect (P = 0.0044) whereby mean densities were highest in spring (7.44 larvae/100m^3) and lowest in winter (0.97). The Year-Season interaction was also marginally significant (P = 0.0247) which reflected the general trend of dominant spring densities across years, with the exception of the mean values for the summer of 1982 and the fall of 1986.

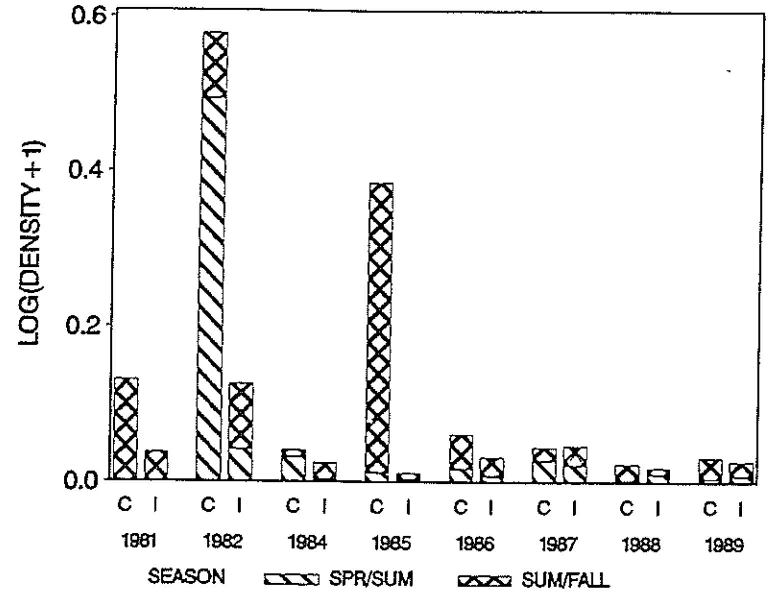

Figure 23. Log-transformed *Chloroscombrus chrysurus* mean annual densities (no./m^3) by Season for Control and Impact stations from the CI Offshore Terminal oil impact analysis. The time period tested was from August 1981 to September 1989. The spring/summer time period represents May through July while the summer/fall represents August through October, inclusive. Note the absence of 1983 data. See Tables 4 and 11 and the text for further details.

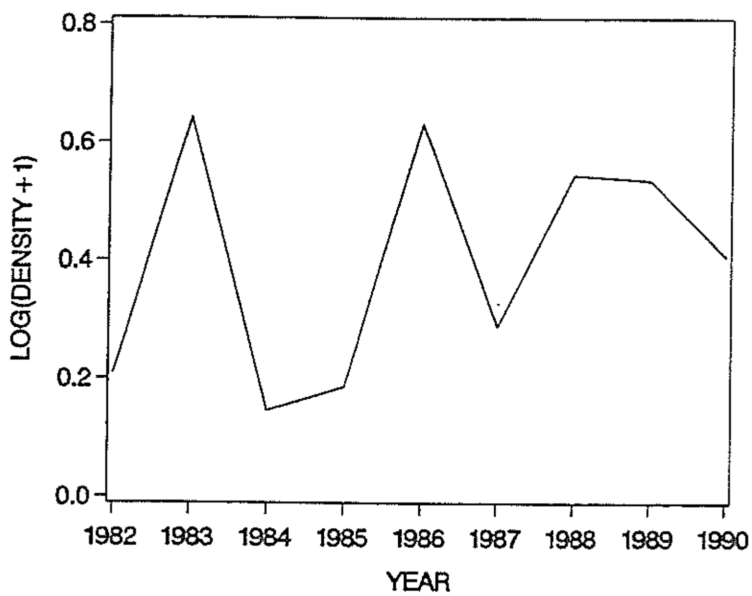

Figure 24. Log-transformed *Brevoortia patronus* mean annual densities (no./m^3) from October 1982 to February 1990 associated with the Offshore Terminal Control and Impact stations. See Tables 4 and 11 and the text for further details.

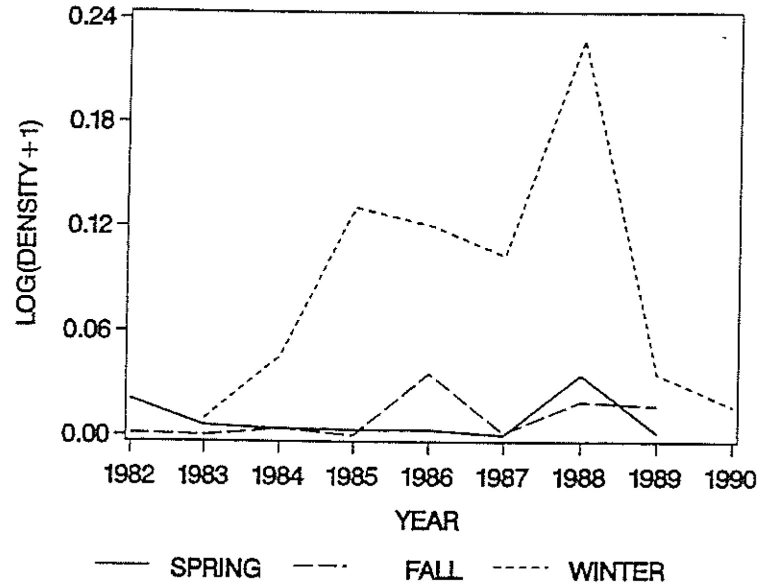

Figure 25. Log-transformed Myctophidae mean annual densities (no./m^3) by season from May 1982 to February 1990 associated with the Offshore Terminal Control and Impact stations. Note absence of the summer season. See Tables 4 and 11 and the text for further details.

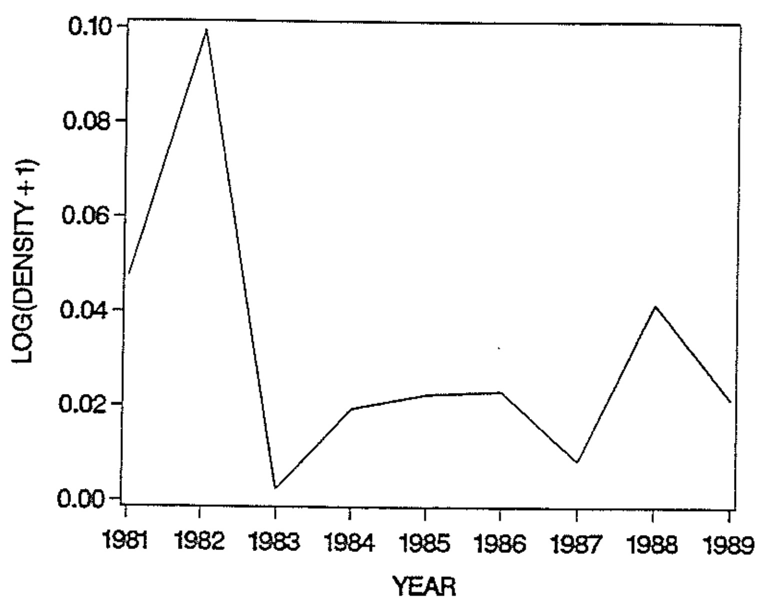

Figure 26. Log-transformed Scombridae mean annual densities (no./m^3) from August 1981 to September 1989 associated with the Offshore Terminal Control and Impact stations. See Tables 4 and 11 and the text for further details.

Finally, Scombridae had a marginally significant Year effect (P = 0.0111) which reflected a maximal annual density in 1982 with a secondary peak in 1988 (Figure 26).

DISCUSSION AND CONCLUSIONS

Only a few statistical analyses had significant or marginally significant Direct LOOP Impact implications (see DLI code in Table 12), while another test had results that appeared to have Indirect LOOP Impacts (ILI code). Some test results appear to be related to oil discharge or spills and/or subsequent clean up activities, while others to the construction phase. The discussion of marginally significant statistical results ($P \leq 0.1$) is environmentally, ecologically and biologically meaningful, because they suggest that those parameters are possibly sensitive to LOOP-related environmental perturbations. This is especially true in light of the insufficient power of most BACI designs (Garson 1994). In addition the identification of marginally significant parameters may serve as a good starting place for the selection of impact indicators in future environmental studies/analyses.

The zooplankton biomass data set was by far the most complete (longest time series and largest sample size) and had a greater number of significant and/or marginally significant test results. The most interesting test finding resulted from the BACI long-term Inshore, Combined Impacts Model (February 1978 to December 1994) which had the Clovelly Storage Dome oil spill data as a covariate. Oil as a covariate proved to be marginally significant ($P = 0.0983$) and showed an inverse (negative) relationship with zooplankton biomass (Table 5; Figure 5). Another relevant finding involving zooplankton biomass occurred within the DACI Inshore, Long-term Construction Impacts Model (Table 8) which had a marginally significant ($P = 0.0428$) During-After, Control-Impact interaction whereby mean zooplankton biomass at Impact stations was greater than the Controls (2.17 vs. 1.70 ml/m^3) During the construction phase, but was lower (1.48 vs. 1.81 ml/m^3) After construction. Perhaps construction disturbances initially stimulated the standing stock of the zooplankton population, which later was depressed by chronic or long-term combination of perturbations. Other times there appeared to be more vague indications of Indirect LOOP impacts, such as the During-After, Control-Impact interaction ($P = 0.0566$; Table 10) seen within the zooplankton biomass data in the DACI Brine Diffuser model run on the HL data set over the May 1980 to July 1986 time period.

Table 12. Summary of parameters tested and their specific environmental impact test results which are given within the parentheses as actual P values for main effects, covariates or interactions versus the Bonferroni adjusted alpha values for that family of multiple tests. Also provided are test interpretation codes: Significant (S), Marginally Significant (MS), and Non-Significant (NS), with a probable explanation of significant observed differences, i.e., Direct Loop Impact (DLI), Indirect LOOP Impact (ILI), or Non-LOOP Impact (NLI). Also presented is a probable explanation of why marginally significant or non-significant responses were found, i.e., Parameter Insensitive to LOOP operations (PI), Parameter Sensitive But Variability too high to detect significant differences with the sampling design used (PSBV), or Parameter Sensitive to LOOP operations, but LOOP operations Not Implicated (PSNI). The reader is referred to Appendix Tables II-A to II-F for a listing of all biological parameters used (zooplankton and ichthyoplankton monthly mean densities across all years with number of positive sampling stations and standard deviations needed to calculate 95% confidence limits and/or coefficients of variation). See Table 4 for test details. See Tables 5-11 for test results.

Parameter Tested	Specific Test Results	Sig. Code	Prob. Explanation for Sig. or Marginal Sig.	Prob. Reason for Marginal Sig. or Non-Sig.
Zooplankton biomass estimate (settled or displacement vol. - ml/m^3)	BACI Inshore Combined Impact with oil as a covariate (2/78 - 12/94)			
	· Oil covariate (P = 0.0983 vs. 0.0167)	MS	DLI	PSBV
	· Before-After Season interaction (P = 0.0811 vs. 0.0167)	MS	NLI	PSNI
	BACI Inshore Construction (2/78 - 8/85)	NS		PSBV
	DACI Inshore Construction (3/79 - 8/85)			
	· Season effect (P = 0.0005 vs. 0.0167)	S	NLI	
	· During-After, Control-Impact interaction (P = 0.0428 vs. 0.0167)	MS	DLI	PSBV
	DACI Offshore Brine Diffuser with brine as a covariate OM data only (8/80 - 12/95)	NS		PSBV
	· No brine data - During-After effect (P = 0.0303 vs. 0.0033)	MS	NLI	PSBV
	DACI Offshore Brine Diffuser with brine as covariate HL data only (5/80 - 7/86)	NS		PSBV
	· No brine data - Season effect (P = 0.0011)	S	NLI	
	· No brine data - During-After effect (P = 0.0510)	MS	NLI	PSBV
	· No brine data - During-After Season interaction (P = 0.0029)	S	NLI	
	· No brine data - During-After, Control-Impact interaction (P = 0.0566)	MS	ILI	PSBV
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (5/81 - 12/94)			
	· Season effect (P = 0.0161 vs. 0.0033)	MS	NLI	PSNI
	· Year effect (P = 0.0079 vs. 0.0033)	MS	NLI	PSNI
	· Year Season interaction (P = 0.0003 vs. 0.0033)	S	NLI	
Polychaeta	BACI Inshore Construction Impact (2/78 - 6/82)			
	· Before-After Season interaction (P = 0.0112 vs. 0.0100)	MS	NLI	PSNI
Gastropoda	BACI Inshore Construction Impact (2/78 - 6/82)			
	· Season effect (P = 0.0001 vs. 0.0100)	S	NLI	

Copepoda	BACI Inshore Construction Impact (2/78 - 3/83)			
	· Season effect (P = 0.0637 vs. 0.0100)	MS	NLI	PSBV
	· Before-After Season interaction (P = 0.0027 vs. 0.0100)	S	NLI	
	· Control-Impact Season interaction (P = 0.0013 vs. 0.0100)	S	NLI	
	· Before-After, Control Impact interaction (P = 0.0991 vs. 0.0100)	MS	NLI	PSBV
	· Before-After, Control-Impact Season interaction (P = 0.0037 vs. 0.0100)	S	NLI	
Acartia spp.	BACI Inshore Construction Impact (2/78 - 3/83)			
	· Season effect (P = 0.0001 vs. 0.0100)	S	NLI	
	· Before-After Season interaction (P= = 0.0222 vs. 0.0100)	MS	NLI	PSNI
Decapoda	BACI Inshore Construction Impact (4/78 - 6/82)			
	· Season effect (P = 0.0001 vs. 0.0100)	S	NLI	
	· Before-After Season interaction (P = 0.0559 vs. 0.0100)	MS	NLI	PSNI
Penaeus aztecus	BACI Inshore Combined Impact with oil as a covariate (3/78 - 12/95)	NS		PSBV
	BACI Inshore Construction (2/78 - 8/85)			
	· Control-Impact Season interaction (P = 0.0543 vs. 0.0167)	MS	NLI	PSBV
	DACI Inshore Construction (3/79 - 8/85)	NS		PSBV
	DACI Offshore Brine Diffuser with brine as a covariate (10/80 - 12/95)	NS		PSBV
	· No brine data - Season effect (P = 0.0027 vs. 0.0033)	S	NLI	
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (6/82 - 2/90)			
	· Season effect (P = 0.0001 vs 0.0033)	S	NLI	
	· Year effect (P = 0.0316 vs 0.0033)	MS	NLI	PSNI
	· Year Season interaction (P = 0.0001 vs 0.0033)	S	NLI	
Callinectes sapidus	DACI Offshore Brine Diffuser with brine as a covariate (1/81 - 12/95)	NS		PSBV
	· No brine data - Season effect (P = 0.0001 vs. 0.0033)	S	NLI	
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (5/81 - 12/89)			
	· Season effect (P = 0.0002 vs. 0.0033)	S	NLI	
	· Control-Impact Season interaction (P = 0.0005 vs. 0.0033)	S	NLI	
	· Year effect (P = 0.0001 vs. 0.0033)	S	NLI	
	· Control-Impact Year interaction (P = 0.0001 vs. 0.0033)	S	NLI	
	· Year Season interaction (P = 0.0001 vs. 0.0033)	S	NLI	
	· Control-Impact, Year Season interaction (P = 0.0001 vs. 0.0033)	S	NLI	
C. similis	DACI Offshore Brine Diffuser with brine as a covariate (1/81 - 12/95)	NS		PSBV
	· No brine data - During-After effect (P = 0.0572 vs. 0.0033)	MS	NLI	PSBV
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (5/81 - 2/90)			
	· Season effect (P = 0.0683 vs. 0.0033)	MS	NLI	PSNI
	· Year effect (P = 0.0333 vs. 0.0033)	MS	NLI	PSNI
	· Year Season interaction (P = 0.0001 vs. 0.0033)	S	NLI	
Portunus spp.	CI Offshore Terminal Oil Impact with platform oil data as a covariate (4/82 - 12/89)			
	· Season effect (P = 0.0066 vs. 0.0033)	MS	NLI	PSBV
	· Year effect (P = 0.0018 vs. 0.0033)	S	NLI	
	· Year Season interaction (P = 0.0007 vs. 0.0033)	S	NLI	

Osteichthyes	BACI Inshore Combined Impact with oil as covariate (3/78 - 12/95)	NS		PSBV
	· No oil data - Control-Impact effect (P = 0.0861 vs. 0.0167)	MS	DLI	PSBV
	BACI Inshore Construction Impact (5/78 - 8/85)	NS		PSBV
	DACI Inshore Construction (3/79 - 8/85)			
	· Season effect (P = 0.0023 vs. 0.0167)	S	NLI	
	· During-After Season interaction (P = 0.0046 vs. 0.0167)	S	NLI	
	· Control-Impact Season interaction (P = 0.0962 vs. 0.0167)	MS	NLI	PSBV
Brevoortia patronus	DACI Offshore Brine Diffuser with brine as a covariate (12/80 - 12/95)	NS		PSBV
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (10/82 - 2/90)			
	· Season effect (P = 0.0248 vs. 0.0033)	MS	NLI	PSBV
	· Year effect (P = 0.0849 vs. 0.0033)	MS	NLI	PSBV
	· Year Season interaction (P = 0.0656 vs. 0.0033)	MS	NLI	PSBV
Anchoa spp.	DACI Offshore Brine Diffuser with brine as a covariate (2/81 - 12/95)	NS		PSBV
	· No brine data - Season effect (P = 0.0001 vs. 0.0033)	S	NLI	
	· No brine data - During-After Season interaction (P = 0.0755 vs. 0.0033)	MS	NLI	PSBV
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (6/81 - 9/89)			
	· Oil covariate (P = 0.0991 vs. 0.0033)	MS	DLI	PSBV
	· Season effect (P = 0.0023 vs. 0.0033)	S	NLI	
	· Year effect (P = 0.0006 vs. 0.0033)	S	NLI	
Myctophidae	DACI Offshore Brine Diffuser with brine as a covariate (1/81 - 12/95)	NS		PI
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (5/82 - 2/90)			
	· Season effect (P = 0.0004 vs. 0.0033)	S	NLI	
	· Year effect (P = 0.0247 vs. 0.0033)	MS	NLI	PSBV
	· Year Season interaction (P = 0.0962 vs. 0.0033)	MS	NLI	PSBV
Chloroscombrus chrysurus	DACI Offshore Brine Diffuser with brine as a covariate (5/81 - 12/95)	NS		PSBV
	· No brine data - Season effect (P = 0.0001 vs. 0.0033)	S	NLI	
	· No brine data - During-After Season interaction (P = 0.0745 vs. 0.0033)	MS	NLI	PSNI
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (8/81 - 9/89)			
	· Year effect (P = 0.0565 vs. 0.0033)	MS	NLI	PSBV
	· Year Season interaction (P = 0.0770 vs. 0.0033)	MS	NLI	PSBV
	· Control-Impact, Year Season interaction (P = 0.0271 vs. 0.0033)	MS	DLI	PSBV
Cynoscion arenarius	DACI Offshore Brine Diffuser with brine as a covariate (4/82 - 12/95)	NS		PSBV
	· No brine data - Season effect (P = 0.0071 vs. 0.0033)	MS	NLI	PSNI
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (4/82 - 9/89)	NS		PSBV
Sciaenops ocellatus	DACI Offshore Brine Diffuser with brine as a covariate (8/81 - 12/95)	NS		PI
Blenniidae	DACI Offshore Brine Diffuser with brine as a covariate (3/81 - 12/95)	NS		PI
	· No brine data - Season effect (P = 0.0117 vs. 0.0033)	MS	NLI	PI
	· No brine data - During-After effect (P = 0.0713 vs. 0.0033)	MS	NLI	PSBV
	· No brine data - During-After Season interaction (P = 0.0809 vs. 0.0033)	MS	NLI	PSBV
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (8/81 - 6/89)			
	· Season effect (P = 0.0044 vs. 0.0033)	MS	NLI	PSBV
	· Year Season interaction (P = 0.0247 vs. 0.0033)	MS	NLI	PSBV
Gobiidae	DACI Offshore Brine Diffuser with brine as a covariate (1/81 - 12/95)	NS		PI
	· No brine data - During-After Season interaction (P = 0.0333 vs. 0.0033)	MS	NLI	PI

Scombridae	DACI Offshore Brine Diffuser with brine as a covariate (7/81 - 12/95)	NS		PI
	· No brine data - Season effect (P = 0.0194 vs. 0.0033)	MS	NLI	PI
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (8/81 - 9/89)			
	· Year effect (P = 0.0111 vs. 0.0033)	MS	NLI	PSBV
Peprilus spp.	DACI Offshore Brine Diffuser with brine as a covariate (4/81 - 12/95)	NS		PI
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (11/81 - 3/88)	NS		PSBV
Bothidae	DACI Offshore Brine Diffuser with brine as a covariate (1/81 - 12/95)	NS		PI
	CI Offshore Terminal Oil Impact with platform oil data as a covariate (5/81 - 6/89)	NS		PI
Symphurus spp.	CI Offshore Terminal Oil Impact with platform oil data as a covariate (5/81 - 9/89)	NS		PI

Mean zooplankton biomass at Impact stations was less than Controls within the During period, but was greater than Controls After (Figure 14).

The Osteichthyes Control-Impact effect (Control mean densities greater than Impact) within the BACI Inshore Combined Impact Model (P = 0.0861; Table 5) was interesting, but had no additional impact support from the other interactions.

We found no significant impacts associated with brine discharge, which appears to have been the case with most such studies in the northern Gulf of Mexico. Zooplankton studies conducted on the inner continental shelf off Texas in association with the Bryan Mound Strategic Petroleum Reserve (SPR) Project (Park and Minello 1980) reported no significant environmental impacts associated with brine discharge. However, analysis of zooplankton and ichthyoplankton data collected in association with the West Hackberry SPR Project brine disposal site on the inner shelf off western Louisiana did report significant impacts (Vecchione et al. 1983). Statistical analysis revealed significantly fewer copepods, fish eggs, larval fish, crab zoeae, and *Penaeus* spp. postlarvae at the diffuser site and at two of four, near-field impact stations when compared to one of the near-field control stations. However, the West Hackberry SPR Project's pre-impact data set consisted of only four sampling cruises conducted quarterly (coverage of the four seasons) during 1978-1979 and only two months of sequential sampling cruises in March and April of 1981. The impact time period consisted of 12 monthly sampling trips from May 1981 through April 1982 during brine discharge. The study test results were challenged by outside reviewers. The Department of Energy requested that NOAA's Environmental, Satellite, Data and Information Service (NESDIS) conduct an outside technical review/critique of the findings (Turgeon 1983). That review was critical of the sampling design (inappropriate pre-impact data set - too short and too discontinuous) and of the statistical analysis, and concluded no impacts were detectable. The Vecchione et al. (1983) study also tested for estuarine impacts associated with the water displacement caused by intake for solution mining at the inland West Hackberry salt dome storage facility. Although they saw a relationship between changes in the community similarity (as measured by the Bray-Curtis Similarity Index) of impact stations and freshwater intake volume, they did not interpret the relationship to be impact related.

As with the oil, brine, and construction analyses conducted inshore, the Offshore Terminal Oil Impact analyses, which used the platform oil spill data set as a covariate, produced a number of significant and marginally significant temporal (in this case seasonal and annual) results (Tables 11 and 12). However, two (2) test results relate directly to the discussion of LOOP-related environmental impacts. Densities for *Anchoa* spp., a very abundant, and ecologically important, coastal taxonomic group, displayed a marginally significant (P = 0.0991; Table 11; Figure 20) negative (inverse) relationship with oil spill data. This negative relationship was not strong and appeared to be influenced by the five largest oil spill points. In addition, this negative relationship was not additionally supported by other significant Control-Impact (spatial) interactions, although there were significant temporal relationships. The second noteworthy impact-related finding occurred with *Chloroscombrus chrysurus*, another very abundant coastal species. *Chloroscombrus chrysurus* displayed a marginally significant Control-Impact-Year-Season interaction (P = 0.0271; Table 11; Figure 23). This statistical result was mostly a reflection of the mean density values for the Control stations during the summer/fall time period in 1981 and 1985 being an order of magnitude greater than the Impact station densities. Control station densities were also an order of magnitude greater than Impact during the high abundance peak in the spring/summer period of 1982. Such a statistical finding may be indicative of environmental impact(s) associated with less clearly defined spatial and temporal events such as relatively small, chronic oil spills.

In any event it is noteworthy that two relatively high abundance taxa showed at least sensitivity to offshore LOOP-related activities. A previous study of ichthyoplankton and offshore oil-related activities had not observed any such indicators. During July and October 1977 and February 1978, an ichthyoplankton study was conducted in and around the Buccaneer Oil Field off Galveston, Texas. No significant differences were seen when comparing oil field to far-field stations. The authors concluded "... that the brine discharge and other possible contaminants from the [oil and gas] platforms did not appear to affect the ichthyoplankton in the oil field." (Finucane et al. 1979a; page 2.3.6-ii).

In summary, the negative relationship between the Clovelly Storage Dome oil spill data and zooplankton biomass and the zooplankton biomass During-After, Control-Impact interaction within the DACI Inshore Long-term Construction Model provide the clearest implications for LOOP-related impacts inshore. In the coastal/offshore environment, there were two indicators of potential environmental impact from LOOP-related activities. The Control-Impact, Offshore Terminal Oil Impact analysis used zooplankton and ichthyoplankton densities, platform oil spill data as a covariate, and Season and Year as main effects. The negative relationship between LOOP Offshore Terminal oil and *Anchoa* spp. densities and the Control-Impact-Year-Season interaction within the *Chloroscombrus chrysurus* analysis both indicate that these taxa are sensitive to LOOP-related environmental impact. Clearly when the data sets were large, continuous, or involved very abundant taxa, there was the distinct possibility of observing potential environmental impact(s).

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APPENDIX I

Reports Produced for Superport Planning (after Sasser et al. 1982)

Year	Title	Comment
1972	LOOP feasibility study	LOOP's Engineering Feasibility Study
1972	A Superport for Louisiana	Superport Task Force Report
1972	LSU Superport Study #1	Requested by Superport Task Force
1972	LSU Superport Study #2	Requested by National Sea Grant Program
1973	LSU Superport Study #3	Requested by LOTA to formulate EPP
1973	LSU Superport Study #4	Requested by LOTA to formulate EPP
1974	Alternate Site Location Evaluation	Prepared by Dames and Moore for LOOP, Inc.
1976	Environmental Baseline Studies Vols. 1-4	Prepared by LSU for LOOP, Inc.
1976	Environmental Impact Study	US Department of Transportation

APPENDIX II

Monthly Mean Densities by Gear Type

Table II-A. Monthly mean densities (with the number of positive samples and standard deviation in parenthesis) for zooplankton biomass (ml/m^3; settled and displacement volumes) and for zooplankton taxa (no./m^3) collected with a 0.5-m, 0.153-mm mesh, plankton net between February 1978 and December 1995 during the LOOP Environmental Monitoring Project. Taxonomic order within table was determined by the National Oceanographic Data Center (NODC) code.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Settled Volume	5.06(201;14.36)	5.29(206;13.3)	4.69(186;9.72)	30.68(205;349.76)	2.99(226;6.56)	2.34(228;4.41)
Displacement Volume	1.8(186;4.78)	2(177;4.4)	2.18(164;4.32)	6.99(158;59.08)	1.75(177;5.95)	0.82(187;1.87)
VOLVOX	-	-	1.84(2;1.62)	-	-	-
NOCTILUCA SCINTILLANS	186.1(4;291.8)	45.6(10;79.47)	71263(24;222855)	266.2(10;314.9)	45778(1;.)	580(1;.)
CERATIUM	-	-	-	-	-	193.3(2;240.1)
PROTOZOA	392.7(6;728.1)	5.47(3;4.93)	925(3;1581)	1.29(3;1.18)	67.3(3;42.8)	1105(1;.)
DINOFLAGELLIDA	8.22(5;6.7)	2.68(1;.)	12.18(2;9.9)	17.08(5;22.92)	635(6;677)	96.8(3;75.3)
FORAMINIFERIDA	77.6(18;131.5)	72.8(11;191.4)	2.19(1;.)	46.97(3;39.62)	65(6;112)	239.9(2;100.3)
RADIOLARIA	-	-	-	-	9.38(1;.)	-
TINTINNINA	-	0.97(2;1.09)	-	26.37(1;.)	103.5(2;35.8)	75.6(6;64.6)
PORIFERA(Larva)	-	-	-	-	-	-
CNIDARIA	5.01(4;9.8)	0.06(1;.)	26.07(2;27.34)	12.84(5;6.88)	34.3(4;33.33)	51.3(3;26)
CNIDARIA(Medusa)	1.8(1;.)	-	-	-	-	-
HYDROZOA	0.36(2;0.21)	-	27.4(2;18.96)	8.81(3;7.87)	6.05(3;3.2)	17.97(1;.)
HYDROZOA(Medusa)	-	0.37(1;.)	3.7(5;3.49)	18.2(2;24.23)	5.74(5;7.25)	-
HYDROZOA(Colony)	-	2.9(1;.)	-	-	-	-
ANTHOMEDUSAE(Medusa)	-	-	-	0.05(1;.)	-	-
NEMOPSIS BACHEI	-	0.14(1;.)	-	-	-	-
EUPHYSORA GRACILIS(Medusa)	-	-	0.25(1;.)	-	-	-
OBELIA	-	-	-	-	-	-
PHIALIDIUM LANGUIDUM(Medusa)	-	-	-	0.05(1;.)	-	-
LIRIOPE TETRAPHYLLA	-	-	-	1.23(4;1.09)	8.37(4;14.24)	1.77(1;.)
LIRIOPE TETRAPHYLLA(Medusa)	-	-	-	-	77.4(1;.)	-
SIPHONOPHORA	0.78(3;1)	1.29(1;.)	0.87(1;.)	26.72(4;52.86)	8.57(2;1.2)	134.8(1;.)
MUGGIAEA	-	-	-	-	-	2.66(1;.)
ABYLOPSIS	-	-	-	-	-	-
CTENOPHORA(Larva)	-	-	-	0.83(1;.)	-	-
CTENOPHORA	10.83(1;.)	-	3.37(1;.)	0.74(5;0.96)	0.21(1;.)	-
PLEUROBRACHIA	-	-	-	-	-	-
MNEMIOPSIS MECRADYI	-	-	-	-	-	-
BEROE OVATA	0.11(1;.)	-	-	0.4(1;.)	-	-
PLATYHELMINTHES(Larva)	-	-	0.93(1;.)	-	-	-
PLATYHELMINTHES(Juvenile)	-	-	19.75(1;.)	-	-	-
PLATYHELMINTHES	-	1.58(3;0.76)	3.37(1;.)	-	-	-
ROTIFERA	157.3(3;118.1)	35.08(6;39.8)	26.01(4;30.05)	17.21(4;13.19)	253.1(5;434.9)	465.6(6;710.4)

Table II-A continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Settled Volume	3.52(224;7.81)	3.35(204;5.99)	2.41(193;3.33)	2.54(178;3)	3.3(206;5.94)	2.93(198;6.46)
Displacement Volume	1.2(168;2.52)	1.07(177;1.98)	0.99(181;1.71)	1.32(160;3.51)	1.44(182;2.79)	1.35(171;2.78)
VOLVOX	-	-	-	-	-	-
NOCTILUCA SCINTILLANS	-	-	-	-	1194(1;.)	-
CERATIUM	-	-	6057(10;12869)	160.3(3;126.1)	-	-
PROTOZOA	75(3;71.1)	-	128.4(3;214)	-	315.2(2;127.5)	-
DINOFLAGELLIDA	-	11556(1;.)	17926(9;27141)	567(13;1021)	132.7(2;47.3)	503(4;914)
FORAMINIFERIDA	8.4(2;10.58)	97(4;183)	1032(15;3925)	31.79(6;32.87)	83.4(12;94.7)	59(11;30.2)
RADIOLARIA	-	8.78(1;.)	160.7(1;.)	-	-	-
TINTINNINA	-	1997(3;3358)	2165(17;6496)	207.1(2;53.5)	-	83.1(2;112.8)
PORIFERA(Larva)	-	-	41.97(3;70.57)	-	-	-
CNIDARIA	58(4;53.7)	51(7;59.4)	38.03(18;52.99)	41.58(14;66.81)	120.4(2;169.1)	55.7(4;67.4)
CNIDARIA(Medusa)	-	-	-	-	-	-
HYDROZOA	7.98(6;9.34)	2.03(4;1.1)	167.3(11;367.4)	28.8(7;42.23)	12.48(3;19.28)	0.64(1;.)
HYDROZOA(Medusa)	-	-	-	-	-	-
HYDROZOA(Colony)	-	-	-	-	-	-
ANTHOMEDUSAE(Medusa)	-	-	-	-	-	-
NEMOPSIS BACHEI	-	1.44(1;.)	-	5.67(1;.)	-	-
EUPHYSORA GRACILIS(Medusa)	-	-	-	-	-	-
OBELIA	-	-	-	2.84(1;.)	-	-
PHIALIDIUM LANGUIDUM(Medusa)	-	-	-	-	-	-
LIRIOPE TETRAPHYLLA	2.6(4;2.63)	434.7(7;1128.5)	11.47(7;8.69)	70.2(5;68.7)	0.97(1;.)	-
LIRIOPE TETRAPHYLLA(Medusa)	-	-	-	-	-	-
SIPHONOPHORA	55.9(1;.)	-	23.25(2;3)	432.8(6;988.5)	5.62(1;.)	16.26(5;23.46)
MUGGIAEA	-	-	-	-	-	-
ABYLOPSIS	-	-	-	-	-	1.18(1;.)
CTENOPHORA(Larva)	-	-	-	-	-	-
CTENOPHORA	5.6(10;15.49)	-	0.44(1;.)	209.3(3;320.5)	6.98(3;11.94)	5.84(2;2.28)
PLEUROBRACHIA	-	0.17(1;.)	1.41(2;1.73)	8.42(2;10.37)	-	-
MNEMIOPSIS MECRADYI	-	-	-	2.84(1;.)	-	0.92(1;.)
BEROE OVATA	-	-	-	-	-	-
PLATYHELMINTHES(Larva)	-	-	-	-	-	-
PLATYHELMINTHES(Juvenile)	-	-	-	-	-	-
PLATYHELMINTHES	-	1.92(2;1.62)	0.27(2;0.3)	-	-	-
ROTIFERA	521(5;898)	10976(5;21053)	2.91(2;1.34)	-	-	78.7(1;.)

Table II-A continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
ROTIFERA(Colony)	-	-	-	-	-	282.3(1;.)
BRACHIONIDAE	-	-	76(3;120.8)	6.54(1;.)	-	20.91(1;.)
NEMATODA(Larva)	-	-	-	-	-	0.05(1;.)
NEMATODA	55.9(3;82.7)	3.89(3;1.63)	26.97(4;7.41)	9.52(2;9.57)	-	36.03(2;3.98)
NEMATOMORPHA(Larva)	-	-	-	46.63(1;.)	-	-
ANNELIDA(Larva)	17.93(1;.)	-	-	-	6.45(1;.)	-
POLYCHAETA(Juvenile)	21.69(20;17.47)	1.05(3;1.17)	6.32(1;.)	-	-	-
POLYCHAETA	-	-	-	-	-	-
POLYCHAETA(Trochophore larva)	11.81(14;20.83)	37.17(21;71.96)	51.7(54;83.6)	46.85(55;64.62)	53.5(56;80)	53.9(34;62.2)
POLYCHAETA(Mitaria)	-	0.18(1;.)	-	-	-	-
ALCIOPIDAE	-	-	-	-	-	-
TYPHLOSCOLECIDAE(Larva)	-	-	-	-	-	-
TYPHLOSCOLECIDAE	-	-	-	-	8.99(1;.)	-
TOMOPTERIS	6.9(1;.)	-	-	0.72(3;0.16)	8.99(1;.)	-
NEREIDAE(Larva)	-	-	12.22(8;18.98)	4.84(1;.)	-	-
NEREIDAE(Juvenile)	0.24(2;0.14)	2.41(1;.)	-	-	-	-
NEREIDAE(Postlarva)	-	-	-	-	0.27(1;.)	-
NEREIS(Larva)	-	-	-	-	0.04(1;.)	-
NEREIS	-	-	-	-	21.56(1;.)	-
NEREIS SUCCINEA(Larva)	-	-	-	17.7(1;.)	-	-
NEREIS SUCCINEA	-	-	-	-	-	-
SPIONIDAE(Larva)	-	-	41.37(16;58.95)	115.9(9;200.9)	2.02(2;2.54)	47.86(2;36.91)
SPIONIDAE	-	-	-	0.37(1;.)	1.14(1;.)	-
OLIGOCHAETA(Larva)	-	2.9(3;2.71)	5.28(3;2.05)	-	-	2.56(1;.)
MOLLUSCA(Veliger)	-	-	37.14(3;29.26)	17.6(1;.)	-	-
GASTROPODA(Veliger)	67.6(25;251)	95.8(7;239)	82.5(28;233.6)	151.7(51;364.9)	225.3(51;912.7)	31.94(41;48.47)
GASTROPODA(Juvenile)	4.17(2;1.53)	-	-	-	-	-
GASTROPODA	-	-	-	-	-	-
THECOSOMATA	0.22(3;0.21)	-	-	19.44(2;22.48)	-	-
BIVALVIA(Veliger)	35.16(10;43.66)	3.78(4;4.58)	37.53(12;114.2)	125.7(25;314)	522(46;1298)	170.4(31;669)
BIVALVIA(Juvenile)	-	-	-	-	-	-
CRASSOSTREA VIRGINICA(Veliger)	-	-	-	-	20.85(7;15.91)	-
CEPHALOPODA(Larva)	0.07(1;.)	-	-	-	0.09(1;.)	-
LOLIGINIDAE(Larva)	-	-	-	0.1(2;0.05)	-	-
LOLLIGUNCULA BREVIS(Larva)	-	-	-	0.06(1;.)	-	-
ARACHNIDA(Juvenile)	-	-	9.96(2;13.85)	-	-	-
ARACHNIDA	1.93(2;2.63)	1.25(4;0.83)	3.34(2;3.74)	14.35(1;.)	0.11(5;0.08)	0.2(1;.)
ACARINA(Juvenile)	-	-	-	-	13.45(1;.)	-
ACARINA	-	-	-	0.99(2;1.25)	-	-
CRUSTACEA(Egg)	-	-	-	-	-	-

Table II-A continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
ROTIFERA(Colony)	-	-	-	-	-	-
BRACHIONIDAE	-	-	-	-	-	-
NEMATODA(Larva)	-	-	-	-	-	-
NEMATODA	42.85(2;36.41)	4.58(1;.)	3.09(2;4.3)	74.4(2;102.8)	-	-
NEMATOMORPHA(Larva)	-	-	-	-	-	-
ANNELIDA(Larva)	1145(1;.)	-	0.1(1;.)	-	-	0.08(1;.)
POLYCHAETA(Juvenile)	-	-	38.91(1;.)	9.3(1;.)	-	329.9(2;245.6)
POLYCHAETA	-	41.86(1;.)	68(2;89.3)	20.38(1;.)	-	3.11(1;.)
POLYCHAETA(Trochophore larva)	101.2(36;201.4)	33.62(29;29.25)	102.8(61;228.9)	69(49;261.1)	52.9(54;86.6)	87.2(52;205.4)
POLYCHAETA(Mitaria)	-	-	-	-	-	-
ALCIOPIDAE	-	-	-	0.04(1;.)	-	0.14(1;.)
TYPHLOSCOLECIDAE(Larva)	-	-	-	13.04(1;.)	-	-
TYPHLOSCOLECIDAE	-	-	-	-	1.12(1;.)	-
TOMOPTERIS	-	-	0.23(1;.)	-	0.2(2;0.02)	-
NEREIDAE(Larva)	-	-	-	-	-	-
NEREIDAE(Juvenile)	-	-	-	-	-	-
NEREIDAE(Postlarva)	-	-	-	-	-	-
NEREIS(Larva)	-	-	-	-	-	-
NEREIS	-	-	-	-	-	-
NEREIS SUCCINEA(Larva)	-	-	-	-	-	-
NEREIS SUCCINEA	-	0.11(1;.)	-	-	-	-
SPIONIDAE(Larva)	111(1;.)	-	-	-	-	-
SPIONIDAE	-	-	-	-	-	-
OLIGOCHAETA(Larva)	0.04(1;.)	-	-	-	-	0.1(1;.)
MOLLUSCA(Veliger)	-	-	-	67.6(1;.)	-	0.11(1;.)
GASTROPODA(Veliger)	208.9(45;662.3)	47.43(53;76.25)	138.8(63;388.8)	97.9(43;247.5)	54.1(27;145.7)	62.8(17;68.9)
GASTROPODA(Juvenile)	-	-	-	-	-	-
GASTROPODA	-	-	-	4.4(2;0.66)	-	-
THECOSOMATA	-	-	1.87(2;2.52)	-	42.6(3;59.18)	8.97(1;.)
BIVALVIA(Veliger)	361.3(25;1267)	93(48;180.4)	279.6(55;636.4)	123.1(41;227.5)	27.34(13;47.26)	56.2(9;66)
BIVALVIA(Juvenile)	-	-	11.27(1;.)	-	-	-
CRASSOSTREA VIRGINICA(Veliger)	-	-	-	-	-	-
CEPHALOPODA(Larva)	-	-	-	-	-	-
LOLIGINIDAE(Larva)	0.06(1;.)	0.08(1;.)	-	-	-	-
LOLLIGUNCULA BREVIS(Larva)	-	-	-	-	-	-
ARACHNIDA(Juvenile)	-	-	-	-	-	-
ARACHNIDA	-	1.27(1;.)	0.48(5;0.39)	12.36(1;.)	-	-
ACARINA(Juvenile)	-	-	-	-	-	-
ACARINA	-	-	-	-	-	-
CRUSTACEA(Egg)	476.6(1;.)	-	166.1(2;191.7)	79.4(1;.)	-	-

Table II-A continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
CRUSTACEA(Nauplius)	12770(40;73703)	684(40;1290)	539(38;870)	865(52;2828)	991(31;1937)	4989(31;17590)
BRANCHIOPODA	-	-	-	-	-	0.18(3;0.13)
CLADOCERA	221.2(10;385.6)	97.9(16;162.6)	122.5(14;178.4)	68.6(13;95.1)	407.4(29;766)	1579(28;2279)
SIDIDAE	-	-	-	25.89(3;29.56)	0.83(1;.)	534(2;753)
PENILIA	-	-	-	-	-	-
PENILIA AVIROSTRIS	260(2;356.7)	0.33(2;0.18)	-	1010(4;1124)	90.6(5;138.8)	1085(6;2213)
DAPHNIIDAE	-	14.83(2;6.94)	40.02(2;34.89)	1.87(1;.)	-	167.4(2;88.6)
BOSMINIDAE	-	29.64(2;25.08)	87(3;106.2)	86(5;147.6)	-	-
EVADNE	-	-	-	-	10.4(2;3.79)	-
EVADNE TERGESTINA	-	39.01(5;72.2)	672(9;1028)	14.2(1;.)	9.58(2;12.99)	-
PODON	-	-	4.41(1;.)	-	-	-
PODON POLYPHEMOIDES	-	-	32.85(3;35.22)	-	-	-
CHYDORIDAE	-	13.85(2;2.75)	19.61(5;23.52)	25.55(2;14.98)	149.6(2;35.7)	-
MACROTRICHIDAE	-	-	-	-	-	86.9(1;.)
OSTRACODA	49.44(17;135.3)	14.9(14;19.88)	28.36(24;49.15)	27.48(27;33.86)	54.9(32;115.5)	52.7(27;147.3)
COPEPODA(Nauplius)	328.7(51;702)	807(40;2188)	298.2(51;348.9)	704(49;1116)	9223(79;41066)	287.8(66;357.8)
COPEPODA	2202(42;4529)	1241(39;1474)	1116(49;1699)	2331(61;5497)	1044(39;1829)	1761(36;3901)
COPEPODA(Copepodid)	458.6(24;949.5)	301.8(31;748.3)	995(24;1396)	865(29;855)	3430(29;4735)	3469(32;3719)
CALANOIDA	102.4(11;128.8)	63.8(21;136.4)	27.36(15;32.47)	119.1(21;273.2)	868(45;1186)	969(37;2388)
CALANOIDA(Copepodid)	-	87.9(1;.)	103.5(6;165)	34.59(3;26.74)	66.7(1;.)	-
CALANUS	-	-	-	-	-	-
CALANUS MINOR	-	0.2(1;.)	0.07(1;.)	0.25(3;0.13)	-	-
UNDINULA VULGARIS	4.28(1;.)	6.42(2;6.1)	4.98(2;6.52)	3.96(6;5.34)	-	-
UNDINULA VULGARIS(Copepodid)	-	0.81(1;.)	-	-	-	-
EUCALANUS	1.86(2;2.53)	5.23(1;.)	27.77(2;38.93)	-	10.89(6;6.83)	56.4(3;93.3)
EUCALANUS(Copepodid)	8.99(1;.)	-	5.21(2;3.9)	-	-	-
EUCALANUS ATTENUATUS	-	-	0.12(1;.)	0.05(1;.)	-	-
EUCALANUS ATTENUATUS(Copepodid)	-	-	-	1.94(1;.)	-	-
EUCALANUS PILEATUS	-	-	-	84(5;136.6)	3.19(1;.)	-
EUCALANUS PILEATUS(Copepodid)	7.34(1;.)	-	6.76(3;8.14)	8.8(4;8.77)	61.4(3;63.7)	4.53(1;.)
RHINCALANUS	-	-	0.46(1;.)	-	-	-
RHINCALANUS(Copepodid)	-	-	0.31(1;.)	-	-	-
RHINCALANUS CORNUTUS	4.86(1;.)	-	1.74(1;.)	-	-	-
PARACALANIDAE	-	-	-	-	-	3.13(1;.)
PARACALANUS	-	9.68(3;15.46)	8.77(2;4.64)	80.5(3;54.7)	26.48(1;.)	155.8(3;96.3)
PARACALANUS(Copepodid)	-	-	1.93(1;.)	-	-	-
PARACALANUS PARVUS	100.5(4;90)	86.9(1;.)	24.23(8;32.57)	79.1(9;136.9)	12.75(1;.)	-
PARACALANUS PARVUS(Copepodid)	22.48(2;25.7)	-	5.14(2;1.03)	33.04(2;2.7)	28.83(1;.)	-
PARACALANUS CRASSIROSTRIS	145(13;257.9)	1449(2;2049)	120.5(21;204.2)	781(13;1393)	1159(9;2109)	257.8(4;300.9)
PARACALANUS CRASSIROSTRIS(Copepodid)	13.48(2;8.71)	2.27(6;1.82)	35.85(11;68.01)	107.9(6;133.8)	545(3;280)	31.66(2;27.05)

Table II-A continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
CRUSTACEA(Nauplius)	1491(23;1760)	1529(23;4018)	1466(17;2733)	1669(22;2676)	950(28;2291)	302(20;372.7)
BRANCHIOPODA	-	-	-	-	-	-
CLADOCERA	824(23;1508)	243.6(29;703.9)	3809(12;12941)	26.51(7;26.92)	8.43(2;8.76)	120.3(7;295.5)
SIDIDAE	-	-	-	-	-	-
PENILIA	-	16.23(1;.)	-	-	-	-
PENILIA AVIROSTRIS	96.2(7;205.1)	551(4;864)	-	-	0.56(1;.)	-
DAPHNIIDAE	-	-	-	-	-	-
BOSMINIDAE	-	-	-	-	-	-
EVADNE	-	-	45.02(3;42.42)	21.5(1;.)	-	-
EVADNE TERGESTINA	-	209.6(9;464.5)	38.41(2;48.82)	10.19(3;6.57)	-	55.9(1;.)
PODON	-	-	-	-	-	-
PODON POLYPHEMOIDES	-	0.09(1;.)	8.32(1;.)	-	-	-
CHYDORIDAE	-	-	-	-	-	-
MACROTRICHIDAE	-	-	-	-	-	-
OSTRACODA	17.2(27;19.34)	380(22;1647.4)	16.94(23;20.48)	27.91(18;66.38)	14.41(13;27.97)	13.12(7;30.28)
COPEPODA(Nauplius)	224.2(49;443.9)	2372(56;15625)	1233(58;2559)	512(62;742)	1230(53;1962)	1157(58;2476)
COPEPODA	4796(45;18651)	628(30;1185)	3955(32;6902)	5031(34;6716)	1625(46;3109)	1739(39;3259)
COPEPODA(Copepodid)	4077(27;4341)	3432(23;4857)	3023(32;5963)	1837(37;2368)	1247(27;1766)	742(25;972)
CALANOIDA	528(27;1251)	1026(36;1447)	245.6(22;622.4)	187.8(22;233.8)	236.6(24;275.2)	134(21;230.8)
CALANOIDA(Copepodid)	-	-	-	-	-	2.21(1;.)
CALANUS	-	-	-	67.6(1;.)	-	-
CALANUS MINOR	-	-	-	-	-	-
UNDINULA VULGARIS	-	-	-	31.81(4;29.43)	-	9.25(2;12.3)
UNDINULA VULGARIS(Copepodid)	-	-	-	-	-	34.23(3;48.38)
EUCALANUS	37.88(4;47.71)	27.36(4;50.82)	2675(10;5988)	439.6(8;1131.2)	35.11(11;52.56)	44.6(7;87.17)
EUCALANUS(Copepodid)	-	-	-	-	4.92(1;.)	-
EUCALANUS ATTENUATUS	-	-	-	-	-	-
EUCALANUS ATTENUATUS(Copepodid)	-	-	-	-	-	-
EUCALANUS PILEATUS	-	-	-	7.13(3;11.01)	-	-
EUCALANUS PILEATUS(Copepodid)	-	-	40.08(2;5.11)	19.84(1;.)	5.91(2;1.21)	-
RHINCALANUS	-	-	-	-	-	-
RHINCALANUS(Copepodid)	-	-	-	-	-	-
RHINCALANUS CORNUTUS	-	-	-	-	0.35(1;.)	-
PARACALANIDAE	-	-	-	-	-	-
PARACALANUS	2433(3;4075)	5406(9;4548)	3255(11;3248)	463.2(9;719.3)	37.97(3;17.48)	204.5(7;220.1)
PARACALANUS(Copepodid)	-	-	-	-	-	1841(7;3697)
PARACALANUS PARVUS	-	64.9(1;.)	-	-	145.1(2;186)	35.81(1;.)
PARACALANUS PARVUS(Copepodid)	-	380.7(1;.)	-	-	-	-
PARACALANUS CRASSIROSTRIS	1334(1;.)	192.7(3;127.6)	1769(19;4288)	804(16;1072)	765(22;985)	1500(19;2238)
PARACALANUS CRASSIROSTRIS(Copepodid)	15.69(1;.)	11070(3;12051)	599(5;648)	6.88(1;.)	242.1(5;198.3)	-

Table II-A continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
PARACALANUS ACULEATUS	-	-	-	-	-	-
CALOCALANUS	-	-	-	0.55(1;.)	-	-
CALOCALANUS PAVO(Copepodid)	-	-	-	3.88(1;.)	-	-
ACROCALANUS LONGICORNIS	-	-	-	0.32(2;0.07)	-	-
CLAUSOCALANUS FURCATUS	-	-	-	11.79(2;16.3)	-	-
CLAUSOCALANUS FURCATUS(Copepodid)	-	-	-	-	-	14.51(1;.)
EUCHAETA	-	5.23(1;.)	-	4.15(1;.)	-	-
EUCHAETA(Copepodid)	-	-	-	33.15(1;.)	-	-
EUCHAETA MARINA	6(1;.)	-	0.33(2;0.24)	0.29(3;0.25)	-	-
EUCHAETA MARINA(Copepodid)	-	0.81(1;.)	-	-	-	-
SCOLECITHRIX(Copepodid)	-	-	-	-	-	-
SCOLECITHRIX DANAE	2.14(1;.)	-	-	0.36(1;.)	-	-
CENTROPAGES	9.27(5;11.73)	1.29(1;.)	0.26(3;0.33)	25.65(1;.)	44.2(7;39.28)	86.6(5;63)
CENTROPAGES(Copepodid)	19.09(6;17.83)	-	66.6(8;54.4)	13.48(5;19.04)	-	7.35(2;10.12)
CENTROPAGES FURCATUS	-	-	-	25.09(8;37.48)	94(1;.)	205.2(5;308)
CENTROPAGES FURCATUS(Copepodid)	-	0.21(1;.)	1.17(3;0.27)	174.4(3;247.3)	-	-
CENTROPAGES HAMATUS	-	22.33(4;43.08)	1.11(3;0.91)	1.49(4;1.59)	42.36(1;.)	-
CENTROPAGES HAMATUS(Copepodid)	-	40.55(3;65.29)	24.62(2;3.64)	-	-	-
CENTROPAGES VIOLACEUS(Copepodid)	-	-	0.08(1;.)	-	-	-
CENTROPAGES VELIFICATUS	-	-	-	-	8.01(2;9.05)	-
CENTROPAGES VELIFICATUS(Copepodid)	-	-	-	-	52.6(2;69.8)	-
DIAPTOMUS	-	1.58(1;.)	-	13.96(4;17.34)	12.13(1;.)	2.56(1;.)
DIAPTOMUS(Copepodid)	-	-	-	167.1(3;226.2)	8.24(2;7.36)	10.22(1;.)
PSEUDODIAPTOMUS(Copepodid)	-	-	60.9(1;.)	-	-	-
PSEUDODIAPTOMUS CORONATUS	298.7(4;581.6)	21.1(5;29.83)	320.3(4;226.2)	17.73(5;23.89)	67.9(6;101.3)	70(9;64.7)
PSEUDODIAPTOMUS CORONATUS(Copepodid)	138.5(19;160.7)	-	-	0.14(1;.)	-	-
EURYTEMORA	-	34.79(1;.)	95.3(2;107.8)	-	-	-
EURYTEMORA(Copepodid)	14.22(1;.)	225.1(7;194.4)	343.5(15;698.2)	148.3(10;174.8)	537(8;1036)	217.6(1;.)
EURYTEMORA AFFINIS	-	-	30.09(2;5.97)	-	-	-
EURYTEMORA AFFINIS(Copepodid)	-	-	-	-	-	-
EURYTEMORA AMERICANA	-	-	2.99(1;.)	-	-	-
EURYTEMORA HIRUNDOIDES	313.7(8;321.1)	69.3(6;50.1)	267(6;574)	173.6(7;255.5)	41.99(6;43.61)	-
EURYTEMORA LACUSTRIS	-	22.42(3;20.24)	19.79(2;27.44)	20.06(1;.)	81.3(3;71.6)	-
TEMORA	82.9(10;167.2)	2.92(3;2.16)	10.41(3;3.13)	51.4(4;17)	151.4(11;229)	305.4(4;374.7)
TEMORA(Copepodid)	-	-	10.51(4;14.5)	353.4(1;.)	-	-
TEMORA STYLIFERA	1.5(1;.)	-	0.95(2;1.12)	22.05(6;42.12)	23.06(2;30.99)	11.61(3;18.36)
TEMORA STYLIFERA(Copepodid)	49.17(1;.)	28.98(1;.)	-	-	16.19(2;17.87)	-
TEMORA LONGICORNIS	-	-	-	0.55(1;.)	-	-
TEMORA TURBINATA	10.92(3;7.43)	1.05(2;0.25)	3.62(7;5.96)	55.1(8;80.9)	45.67(4;48.25)	50.4(2;66.2)
TEMORA TURBINATA(Copepodid)	47.6(8;51.39)	0.87(1;.)	16.67(3;14.47)	918(5;1864)	3.99(4;1.95)	0.91(1;.)

Table II-A continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
PARACALANUS ACULEATUS	-	-	-	357.4(2;485.8)	-	-
CALOCALANUS	-	-	-	-	-	-
CALOCALANUS PAVO(Copepodid)	-	-	-	-	-	-
ACROCALANUS LONGICORNIS	-	-	-	-	-	-
CLAUSOCALANUS FURCATUS	-	-	-	-	-	-
CLAUSOCALANUS FURCATUS(Copepodid)	-	-	-	-	-	-
EUCHAETA	-	-	3.65(1;.)	561(8;712)	19.45(6;10.26)	-
EUCHAETA(Copepodid)	-	-	-	-	-	-
EUCHAETA MARINA	-	-	-	-	42.58(1;.)	0.3(2;0.35)
EUCHAETA MARINA(Copepodid)	-	-	-	-	-	-
SCOLECITHRIX(Copepodid)	-	-	-	-	-	4.66(1;.)
SCOLECITHRIX DANAE	-	-	-	-	-	-
CENTROPAGES	272.5(11;390.3)	216.3(14;373.1)	74.2(11;100.1)	213(15;267.4)	27.45(10;24.95)	27.51(3;38)
CENTROPAGES(Copepodid)	-	-	-	-	38.02(1;.)	-
CENTROPAGES FURCATUS	31.38(1;.)	501(5;675)	42.07(3;52.92)	164.7(9;285.8)	14.32(2;19.2)	20.76(7;18.69)
CENTROPAGES FURCATUS(Copepodid)	-	16.23(1;.)	60.7(6;47.7)	13.39(3;7.58)	37.51(7;34.49)	35.51(7;30.03)
CENTROPAGES HAMATUS	-	-	-	-	-	-
CENTROPAGES HAMATUS(Copepodid)	-	-	-	-	-	-
CENTROPAGES VIOLACEUS(Copepodid)	-	-	-	-	-	-
CENTROPAGES VELIFICATUS	-	-	-	-	-	-
CENTROPAGES VELIFICATUS(Copepodid)	-	-	-	-	-	-
DIAPTOMUS	-	-	-	-	-	299.7(2;381.2)
DIAPTOMUS(Copepodid)	-	-	-	-	-	50(2;44.9)
PSEUDODIAPTOMUS(Copepodid)	-	-	-	-	-	-
PSEUDODIAPTOMUS CORONATUS	47.66(1;.)	-	618(7;1568)	38.92(6;46.09)	17.38(5;20.71)	4389(5;9165)
PSEUDODIAPTOMUS CORONATUS(Copepodid)	-	-	1275(18;1289)	928(11;2467)	85.5(21;115.1)	622(22;1060)
EURYTEMORA	-	-	359.5(19;746.9)	48.22(3;60.93)	-	-
EURYTEMORA(Copepodid)	-	-	-	-	-	-
EURYTEMORA AFFINIS	-	-	-	-	-	-
EURYTEMORA AFFINIS(Copepodid)	-	-	-	7.81(1;.)	-	-
EURYTEMORA AMERICANA	-	-	-	-	-	-
EURYTEMORA HIRUNDOIDES	78.7(2;96.5)	71.1(2;60.2)	145.8(1;.)	-	223.7(1;.)	38.59(3;33.88)
EURYTEMORA LACUSTRIS	-	-	-	-	-	-
TEMORA	64.6(4;86.8)	-	34.76(4;29.72)	104.3(11;125.6)	117.2(14;124.2)	932(7;2193)
TEMORA(Copepodid)	-	-	-	6.48(2;8.47)	-	-
TEMORA STYLIFERA	1926(1;.)	75.1(2;3.6)	29.46(2;30.67)	114.5(6;103)	9.45(2;6.2)	0.91(2;0.51)
TEMORA STYLIFERA(Copepodid)	-	-	-	-	2.53(1;.)	115.3(4;222.3)
TEMORA LONGICORNIS	-	-	-	-	-	-
TEMORA TURBINATA	910(4;1012)	775(8;1873)	4469(7;9134)	694(12;1463)	1120(27;4840)	166.2(15;306)
TEMORA TURBINATA(Copepodid)	-	-	-	18.32(1;.)	82.1(17;90.8)	81.6(14;95)

Table II-A continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
LUCICUTIA FLAVICORNIS	-	-	-	0.24(1;.)	-	-
CANDACIA(Copepodid)	-	-	-	-	-	-
CANDACIA BIPINNATA	-	-	-	-	-	-
CANDACIA PACHYDACTYLA	-	-	0.37(1;.)	-	-	-
CANDACIA CURTA	-	-	-	0.26(2;0.01)	-	-
PONTELLIDAE(Copepodid)	-	0.26(1;.)	-	-	-	-
LABIDOCERA	108.9(2;86.1)	-	0.73(1;.)	66(7;124.5)	93.9(14;146.6)	491.6(16;1253.7)
LABIDOCERA(Copepodid)	19.21(2;14.49)	115.9(1;.)	13.76(7;22.8)	75.7(10;114.1)	61.9(3;96.2)	-
LABIDOCERA AESTIVA	-	-	4.29(6;6.85)	42.45(8;63.1)	10.31(1;.)	-
LABIDOCERA AESTIVA(Copepodid)	174.7(7;171.4)	0.94(2;0.74)	-	109.3(4;107.1)	55.4(4;69.3)	14.32(3;22.86)
PONTELLA	6.08(3;8.88)	-	0.15(1;.)	-	0.23(1;.)	1.32(2;0.61)
PONTELLA(Copepodid)	-	-	-	-	0.8(1;.)	-
PONTELLA PENNATA	-	-	-	-	0.23(1;.)	-
PONTELLINA PLUMATA	-	-	-	0.4(2;0.22)	-	-
ANOMALOCERA ORNATA	-	-	0.95(2;1.12)	-	-	-
CALANOPIA AMERICANA	-	-	-	-	-	-
ACARTIIDAE(Copepodid)	-	-	1.09(1;.)	-	-	-
ACARTIA	3178(60;14622)	396.3(43;756.7)	6438(46;21943)	59945(64;421431)	12054(75;36819)	9964(67;27435)
ACARTIA(Copepodid)	-	-	1.4(1;.)	-	-	-
ACARTIA TONSA	122.5(27;124.8)	674(35;1460)	624(48;1340)	3294(44;15638)	5511(45;10459)	2831(40;4015)
ACARTIA TONSA(Copepodid)	1336(27;1320)	593(13;1326)	2289(26;4787)	1518(20;1603)	4328(13;5833)	1266(8;1709)
TORTANUS	-	-	-	-	1.19(1;.)	-
TORTANUS(Copepodid)	2.91(1;.)	-	-	-	-	-
TORTANUS SETACAUDATUS	-	-	-	0.17(1;.)	1.28(4;1.18)	-
TORTANUS SETACAUDATUS(Copepodid)	-	-	-	-	-	-
HARPACTICOIDA	66.5(32;156.5)	12.76(31;26.03)	32.23(37;68.7)	29.13(31;36.22)	189.2(51;447)	106.9(28;174.8)
HARPACTICOIDA(Copepodid)	-	22.31(3;31.97)	16.33(11;21.67)	23.46(2;27.7)	110.1(3;10.3)	5.11(1;.)
PARATEGASTES	-	-	-	2.95(1;.)	3.28(3;5.05)	-
MICROSETELLA	7.73(1;.)	-	-	-	-	-
MICROSETELLA(Copepodid)	-	-	-	-	-	-
ALTEUTHA	-	-	0.18(2;0.05)	0.61(1;.)	-	-
ALTEUTHA(Copepodid)	-	-	-	0.61(1;.)	-	-
EUTERPINA	-	-	-	1898(3;1228)	45.06(2;28.77)	23.52(1;.)
EUTERPINA(Copepodid)	-	-	-	186.5(1;.)	-	-
EUTERPINA ACUTIFRONS	3.5(2;1.92)	261.5(2;368.1)	33.16(11;60.71)	45.77(8;43.23)	140.9(8;137.8)	49.16(4;57.53)
EUTERPINA ACUTIFRONS(Copepodid)	-	-	3.91(2;4.85)	0.42(1;.)	172.2(2;82.6)	7.25(1;.)
METIS	-	-	-	-	-	-
METIS JOUSSEAUMEI	-	-	-	-	-	-
MACROSETELLA	11.19(2;13.43)	1.29(1;.)	-	4.15(1;.)	7.11(2;8.44)	0.88(1;.)
MACROSETELLA(Copepodid)	-	-	-	-	-	-

Table II-A continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
LUCICUTIA FLAVICORNIS	-	-	-	-	-	-
CANDACIA(Copepodid)	-	-	-	-	-	1.1(1;.)
CANDACIA BIPINNATA	-	-	-	-	0.26(1;.)	-
CANDACIA PACHYDACTYLA	-	-	-	-	-	-
CANDACIA CURTA	-	-	-	-	-	-
PONTELLIDAE(Copepodid)	-	-	-	-	-	-
LABIDOCERA	531(18;1316)	585(14;1374)	267.3(27;504)	1159(24;3277)	137.2(11;168.2)	54.8(8;91.1)
LABIDOCERA(Copepodid)	-	-	-	-	-	-
LABIDOCERA AESTIVA	1.5(1;.)	57(2;43.2)	276.6(13;561.6)	50.4(5;27)	15.33(4;10.06)	84.3(5;110.9)
LABIDOCERA AESTIVA(Copepodid)	-	-	324(12;694.3)	59.7(9;86.6)	127.6(4;119.5)	90(13;88.6)
PONTELLA	-	-	2.64(1;.)	-	-	5.2(2;1.02)
PONTELLA(Copepodid)	-	-	-	-	4.92(1;.)	-
PONTELLA PENNATA	-	-	-	0.07(1;.)	-	-
PONTELLINA PLUMATA	-	-	-	-	-	-
ANOMALOCERA ORNATA	-	-	-	-	-	-
CALANOPIA AMERICANA	-	-	-	18.93(1;.)	-	-
ACARTIIDAE(Copepodid)	-	-	-	-	-	-
ACARTIA	9478(78;20264)	9600(58;23549)	6390(66;8167)	10406(65;28398)	6421(73;16040)	2474(59;6208)
ACARTIA(Copepodid)	-	-	-	-	-	-
ACARTIA TONSA	2102(25;3280)	5561(43;6667)	576(33;939)	447.4(28;1051)	1251(33;5669)	1683(32;3615)
ACARTIA TONSA(Copepodid)	15.69(1;.)	2778(3;2829)	5025(27;5763)	4115(25;5367)	2898(31;4952)	4978(34;6655)
TORTANUS	-	-	-	-	-	-
TORTANUS(Copepodid)	-	-	-	-	-	-
TORTANUS SETACAUDATUS	-	-	30.75(2;38.58)	-	-	-
TORTANUS SETACAUDATUS(Copepodid)	-	-	1.64(3;0.03)	-	209.6(2;210.3)	-
HARPACTICOIDA	325.8(17;943.6)	102.5(21;154.4)	52.5(20;97.2)	161.8(19;214.9)	100.4(21;117.4)	59.8(19;82.4)
HARPACTICOIDA(Copepodid)	-	-	-	-	-	1.1(1;.)
PARATEGASTES	-	-	-	-	-	-
MICROSETELLA	-	-	-	12.31(1;.)	-	-
MICROSETELLA(Copepodid)	-	-	-	-	-	89.7(1;.)
ALTEUTHA	-	-	-	-	-	-
ALTEUTHA(Copepodid)	-	-	-	-	-	-
EUTERPINA	-	31.25(2;5.32)	8.93(1;.)	507(1;.)	50.3(1;.)	-
EUTERPINA(Copepodid)	-	-	-	-	-	-
EUTERPINA ACUTIFRONS	337.9(4;395)	412.5(5;530.6)	213(14;277.8)	258.5(25;503.5)	67.1(21;87.1)	98.5(18;96.3)
EUTERPINA ACUTIFRONS(Copepodid)	-	-	-	-	107(1;.)	67.7(4;80)
METIS	-	-	-	2.6(1;.)	-	-
METIS JOUSSEAUMEI	-	-	-	-	2.32(1;.)	14.3(1;.)
MACROSETELLA	-	-	16.22(2;19.75)	-	17.39(7;20.02)	14.27(1;.)
MACROSETELLA(Copepodid)	-	-	-	-	-	10.95(2;13.93)

Table II-A continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
MACROSETELLA GRACILIS	-	-	-	4.51(2;6.12)	-	-
MACROSETELLA GRACILIS(Copepodid)	-	-	-	-	-	-
OCULOSETELLA GRACILIS	-	-	-	-	-	-
MIRACIA(Copepodid)	-	-	0.17(1;.)	-	-	-
CYCLOPOIDA	95.2(30;270.4)	159.2(17;316.9)	66(17;85.2)	71.6(21;111.5)	859(45;1607)	1687(46;6495)
CYCLOPOIDA(Copepodid)	-	464.3(6;750.4)	332.4(9;644.8)	65.7(6;84.8)	190.7(6;225.4)	7.25(1;.)
ONCAEA	13.4(11;12.39)	2.23(2;0)	10.34(7;12.59)	263.2(5;431.1)	74.8(6;68)	23.47(2;12.64)
ONCAEA(Copepodid)	-	-	-	25.71(1;.)	-	-
ONCAEA MEDITERRANEA	-	-	31.91(6;65.88)	85.3(13;237.4)	-	-
ONCAEA MEDITERRANEA(Copepodid)	-	-	-	106(1;.)	-	-
ONCAEA VENUSTA	19.41(1;.)	-	-	35.34(1;.)	-	-
ONCAEA VENUSTA(Copepodid)	-	-	-	106(1;.)	-	-
CORYCAEIDAE	-	-	-	-	-	9.24(1;.)
CORYCAEUS	35.77(13;26.36)	1.74(4;1.06)	6.79(9;6.88)	171(16;267.9)	78.5(16;81.7)	68.5(13;76.1)
CORYCAEUS(Copepodid)	-	-	1.09(1;.)	69.2(5;95.4)	20.25(3;26.8)	3.13(1;.)
CORYCAEUS AMAZONICUS	-	-	-	-	-	-
CORYCAEUS AMAZONICUS(Copepodid)	-	-	-	-	-	-
CORYCAEUS LATUS	-	-	0.15(1;.)	-	-	-
CORYCAEUS SUBLATUS	-	-	0.21(1;.)	13.69(4;19.68)	-	0.91(1;.)
CORYCAEUS SUBLATUS(Copepodid)	-	-	2.94(1;.)	-	-	-
FARRANULA	-	-	-	33.15(1;.)	-	-
FARRANULA GRACILIS	-	-	-	7.75(1;.)	-	-
FARRANULA ROSTRATA	-	-	-	-	-	-
ERGASILIDAE	-	-	0.04(1;.)	-	1.14(1;.)	10.46(1;.)
ERGASILIDAE(Copepodid)	-	-	-	-	6.06(1;.)	41.82(1;.)
ERGASILUS	-	23.8(3;29.16)	116.3(3;200.6)	99.2(7;241)	37.26(13;47.64)	5.47(4;2.75)
ERGASILUS(Copepodid)	-	-	1.09(2;0.02)	51.5(5;100)	31.78(2;26.08)	7.62(3;5.81)
ERGASILUS VERSICOLOR	-	-	-	8.59(1;.)	-	-
ERGASILUS VERSICOLOR(Copepodid)	-	-	-	17.19(1;.)	-	-
SAPHIRELLA	-	0.87(1;.)	4.4(1;.)	-	15.91(1;.)	61.6(3;103.7)
SAPHIRELLA TROPICA	-	-	9.24(8;12.45)	36.65(7;50.26)	50.7(1;.)	-
CYCLOPIDAE	-	-	-	-	-	130.5(3;204.1)
CYCLOPIDAE(Copepodid)	-	-	-	-	-	475.4(4;890)
HALICYCLOPS	660(14;1072)	153.2(9;304.6)	465.3(8;433.2)	928(3;1106)	403.3(12;869)	154.8(4;209.7)
HALICYCLOPS(Copepodid)	-	-	-	-	-	-
HALICYCLOPS FOSTERI	-	335.6(1;.)	11.2(2;14.92)	-	-	-
CYCLOPS	-	-	-	-	-	-
CYCLOPS VERNALIS	-	-	-	-	-	-
MACROCYCLOPS ALBIDUS	-	-	-	-	-	-
TROPOCYCLOPS PRASINUS	-	-	-	-	-	-

Table II-A continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
MACROSETELLA GRACILIS	-	-	-	8(3;3.49)	12.08(4;19.64)	4.9(3;1.05)
MACROSETELLA GRACILIS(Copepodid)	-	-	-	-	4.92(1;.)	-
OCULOSETELLA GRACILIS	-	-	-	0.04(2;0.01)	-	-
MIRACIA(Copepodid)	-	-	-	-	-	-
CYCLOPOIDA	828(39;1699)	909(45;1403)	344(26;576)	97.5(25;133.2)	966(18;3161)	84.6(29;78.4)
CYCLOPOIDA(Copepodid)	-	-	48.81(1;.)	41.9(1;.)	56.2(2;57)	-
ONCAEA	178.4(3;237.1)	31.63(3;36.64)	84(3;69.1)	111(9;195.5)	49.46(15;82.36)	56.9(12;38.9)
ONCAEA(Copepodid)	-	-	-	-	9.13(2;7.97)	15.13(5;8.11)
ONCAEA MEDITERRANEA	-	-	19.8(1;.)	13.56(4;8.35)	-	3.59(2;3.28)
ONCAEA MEDITERRANEA(Copepodid)	-	-	-	-	-	-
ONCAEA VENUSTA	-	-	-	-	70.9(3;47.7)	-
ONCAEA VENUSTA(Copepodid)	-	-	-	-	2.32(1;.)	-
CORYCAEIDAE	-	-	-	-	-	-
CORYCAEUS	37.58(7;26.72)	40.8(6;49.6)	100.1(13;92.6)	147.5(16;295.3)	143.1(25;338.7)	67.8(15;71.4)
CORYCAEUS(Copepodid)	-	21.36(2;7.26)	72.9(1;.)	-	42.63(3;40.38)	57.5(5;69.2)
CORYCAEUS AMAZONICUS	-	-	-	24.43(1;.)	-	-
CORYCAEUS AMAZONICUS(Copepodid)	-	-	-	24.43(1;.)	-	-
CORYCAEUS LATUS	-	-	-	-	-	-
CORYCAEUS SUBLATUS	-	-	80.6(2;41.7)	-	5.01(1;.)	-
CORYCAEUS SUBLATUS(Copepodid)	-	34.61(2;26)	66.1(1;.)	19.84(1;.)	-	-
FARRANULA	-	-	-	-	-	-
FARRANULA GRACILIS	-	-	-	-	-	-
FARRANULA ROSTRATA	-	-	-	68.5(1;.)	5.06(1;.)	-
ERGASILIDAE	-	-	-	-	-	-
ERGASILIDAE(Copepodid)	-	-	-	-	-	-
ERGASILUS	22.97(3;12.2)	12.83(5;7.48)	26.75(16;32.39)	19.75(14;15.82)	33.09(4;33.54)	7.12(4;2.74)
ERGASILUS(Copepodid)	-	-	-	13.85(1;.)	12.69(1;.)	-
ERGASILUS VERSICOLOR	-	-	-	-	-	-
ERGASILUS VERSICOLOR(Copepodid)	-	-	-	-	-	-
SAPHIRELLA	-	-	-	-	-	-
SAPHIRELLA TROPICA	-	-	60.3(12;85.9)	17.61(2;5.49)	6.11(1;.)	-
CYCLOPIDAE	-	-	-	-	-	-
CYCLOPIDAE(Copepodid)	-	-	-	-	-	-
HALICYCLOPS	5917(3;9698)	1285(11;2119)	89.5(11;136.7)	97.8(3;97.8)	155.5(3;196.2)	205.2(7;276.7)
HALICYCLOPS(Copepodid)	-	-	30.59(1;.)	10.45(1;.)	48.3(2;60.72)	-
HALICYCLOPS FOSTERI	-	6.13(1;.)	-	-	-	-
CYCLOPS	-	-	10.95(1;.)	-	-	-
CYCLOPS VERNALIS	-	-	4.82(1;.)	-	-	-
MACROCYCLOPS ALBIDUS	-	-	4.7(2;0.17)	-	-	-
TROPOCYCLOPS PRASINUS	-	-	4.82(1;.)	-	-	-

Table II-A continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
OITHONA	92.3(23;103.8)	95.4(21;162)	60.3(28;136.6)	137.4(27;212.1)	364(36;848.8)	279.2(25;486.7)
OITHONA(Copepodid)	-	-	5.3(4;5.29)	9.69(1;.)	146.4(4;281.8)	-
OITHONA PLUMIFERA	-	-	0.15(2;0.1)	-	-	-
OITHONA COLCARVA	-	-	217.3(1;.)	-	-	86.6(2;82.7)
SAPPHIRINA	-	-	-	-	8.82(2;7.14)	0.09(1;.)
SAPPHIRINA(Copepodid)	-	-	7.96(1;.)	-	-	-
SAPPHIRINA NIGROMACULATA	-	-	6.59(3;11.26)	7.84(5;15.42)	17.99(1;.)	-
COPILIA	-	-	-	-	-	-
COPILIA(Copepodid)	-	-	20.31(1;.)	-	-	-
COPILIA MIRABILIS	-	-	-		-	-
CALIGOIDA	43.24(1;.)	2.81(2;2.83)	1.09(1;.)	1.02(5;1.75)	67.6(10;115.4)	18.34(2;9.07)
CALIGOIDA(Copepodid)	-	-	13(1;.)	0.28(2;0.2)	17.78(1;.)	-
CALIGUS	-	-	-	0.13(2;0.1)	175(5;228.7)	11.94(1;.)
CALIGUS(Copepodid)	-	-	-	-	-	-
LERNAEOPODOIDA(Copepodid)	-	-	0.07(1;.)	-	-	-
LERNAEOPODIDAE	-	-	-	0.78(1;.)	-	-
ARGULUS(Juvenile)	-	-	-	0.14(3;0.14)	1.58(2;1.65)	-
ARGULUS	-	-	0.04(1;.)	0.11(7;0.05)	9.35(7;24.56)	0.25(6;0.26)
CIRRIPEDIA(Nauplius)	106.9(21;128.8)	83.7(10;100.5)	192.4(24;327.7)	780(23;1104)	780(55;2506)	266(46;558.2)
CIRRIPEDIA(Cypris)	10.98(10;10.09)	12.55(4;21.09)	49.46(20;94.4)	74.4(16;150.8)	262.4(32;935.3)	186(26;485.4)
MYSIDACEA(Larva)	-	-	-	0.97(3;1.5)	-	-
MYSIDACEA(Juvenile)	-	-	-	-	-	-
MYSIDACEA	21.85(2;30.25)	2.07(1;.)	-	-	0.96(1;.)	1.62(2;2.16)
MYSIDAE(Juvenile)	-	0.05(1;.)	-	-	-	-
MYSIDAE(Mysis)	-	-	0.13(3;0.09)	0.34(3;0.48)	-	-
MYSIDOPSIS(Juvenile)	-	0.14(4;0.08)	0.18(1;.)	-	-	-
MYSIDOPSIS(Mysis)	-	-	-	-	-	0.04(1;.)
MYSIDOPSIS BAHIA	-	-	-	-	-	-
MYSIDOPSIS ALMYRA(Larva)	-	-	-	-	-	-
MYSIDOPSIS ALMYRA(Juvenile)	4.76(1;.)	-	-	0.06(1;.)	-	-
MYSIDOPSIS ALMYRA	9.51(1;.)	1.84(4;3.42)	3.23(2;4.37)	-	-	-
CUMACEA(Larva)	-	-	-	-	25.36(2;20.61)	-
CUMACEA(Juvenile)	-	2.9(1;.)	0.23(2;0.11)	3.33(1;.)	-	-
CUMACEA	20.65(6;26.89)	-	40.43(2;35.89)	5.41(3;9.01)	2.99(1;.)	4.73(2;6.6)
LEUCONIDAE	-	-	-	-	0.06(1;.)	-
OXYUROSTYLIS SMITHI(Juvenile)	-	-	0.16(3;0.14)	2.2(3;3.6)	-	-
OXYUROSTYLIS SMITHI	-	-	0.15(1;.)	-	-	7.41(1;.)
TANAIDACEA(Larva)	-	-	-	-	0.08(1;.)	-
TANAIDACEA	-	-	-	0.05(1;.)	-	-
LEPTOCHELIA RAPAX	-	-	-	-	0.43(1;.)	-

Table II-A continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
OITHONA	411(13;525.9)	365.4(20;612.5)	1066(47;1407)	1468(45;3386)	1091(51;1988)	1652(41;4227)
OITHONA(Copepodid)	-	360(3;109)	-	114.7(2;14.1)	38.51(2;27.07)	359.5(6;403.8)
OITHONA PLUMIFERA	-	-	-	-	-	-
OITHONA COLCARVA	-	-	-	-	-	-
SAPPHIRINA	-	-	-	-	0.69(2;0.6)	4.16(1;.)
SAPPHIRINA(Copepodid)	-	-	-	-	-	-
SAPPHIRINA NIGROMACULATA	-	-	-	-	-	-
COPILIA	-	-	-	33.81(1;.)	-	-
COPILIA(Copepodid)	-	-	-	-	-	-
COPILIA MIRABILIS	-	-	7.92(1;.)	-	-	-
CALIGOIDA	39.47(10;46.68)	12.46(8;18.37)	-	0.07(1;.)	0.06(1;.)	103.6(1;.)
CALIGOIDA(Copepodid)	-	-	-	-	23.06(1;.)	103.6(1;.)
CALIGUS	16.15(7;17.95)	38.61(4;38.36)	3.47(1;.)	13.86(1;.)	45.01(4;55.61)	-
CALIGUS(Copepodid)	-	-	-	-	37.57(2;26.97)	-
LERNAEOPODOIDA(Copepodid)	-	-	-	-	-	-
LERNAEOPODIDAE	-	-	-	-	-	-
ARGULUS(Juvenile)	-	-	-	-	-	-
ARGULUS	0.64(9;0.8)	0.25(5;0.13)	0.78(14;1.32)	4.83(5;4.58)	7.58(5;6.11)	3.72(3;4.05)
CIRRIPEDIA(Nauplius)	153.3(25;360)	89.2(34;95)	231.6(37;602.4)	167(35;198.9)	189.8(39;360.6)	310(30;426.8)
CIRRIPEDIA(Cypris)	45.56(21;79.54)	64.8(31;57.9)	86.3(28;161.6)	75.5(26;129.9)	52.7(7;104.7)	55.4(8;69.6)
MYSIDACEA(Larva)	-	13.62(1;.)	-	-	-	-
MYSIDACEA(Juvenile)	-	-	-	9.3(1;.)	14.05(1;.)	-
MYSIDACEA	4.7(5;10.25)	0.77(1;.)	0.55(1;.)	2.16(4;2.17)	1.9(2;0.18)	-
MYSIDAE(Juvenile)	-	-	-	-	-	-
MYSIDAE(Mysis)	-	-	-	-	-	-
MYSIDOPSIS(Juvenile)	-	-	-	-	2.03(1;.)	-
MYSIDOPSIS(Mysis)	-	-	-	-	-	-
MYSIDOPSIS BAHIA	-	-	-	-	0.08(1;.)	-
MYSIDOPSIS ALMYRA(Larva)	0.05(1;.)	-	-	-	-	-
MYSIDOPSIS ALMYRA(Juvenile)	-	-	-	-	-	13.42(1;.)
MYSIDOPSIS ALMYRA	-	63.4(1;.)	6.64(1;.)	-	10.5(1;.)	1.16(2;1.53)
CUMACEA(Larva)	48.59(1;.)	-	-	-	-	-
CUMACEA(Juvenile)	-	-	-	-	-	-
CUMACEA	-	0.09(1;.)	0.28(1;.)	8.59(2;2.41)	-	-
LEUCONIDAE	-	-	-	-	-	-
OXYUROSTYLIS SMITHI(Juvenile)	-	-	-	-	-	-
OXYUROSTYLIS SMITHI	-	-	-	-	-	-
TANAIDACEA(Larva)	-	-	-	-	-	-
TANAIDACEA	-	-	-	-	-	-
LEPTOCHELIA RAPAX	-	-	-	-	-	-

Table II-A continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
ISOPODA(Larva)	-	-	0.61(2;0.38)	0.05(1;.)	-	-
ISOPODA(Juvenile)	9.31(4;4.22)	-	0.14(2;0.09)	14.35(1;.)	-	-
ISOPODA	32.48(3;38.81)	-	0.08(1;.)	5.56(10;7.01)	11.2(4;17.35)	2.47(11;5.3)
SPHAEROMA	-	-	-	-	-	0.05(1;.)
AEGATHOA	-	0.09(1;.)	-	-	0.1(2;0)	0.06(1;.)
AEGATHOA OCULATA	-	-	-	0.07(1;.)	-	-
AEGATHOA MEDIALIS	-	-	-	-	0.12(1;.)	-
SYNIDOTEA	-	-	-	-	-	-
EDOTEA MONTOSA	-	6.57(1;.)	-	0.17(2;0.18)	-	0.06(1;.)
MUNNA	4.76(1;.)	-	-	-	-	-
MUNNA REYNOLDSI	-	-	-	-	-	-
AMPHIPODA(Juvenile)	4.7(2;6.04)	-	-	-	-	-
AMPHIPODA	0.35(3;0.2)	0.15(2;0.15)	8.31(4;16.39)	10.78(5;22.66)	0.06(1;.)	0.06(1;.)
GAMMARIDEA(Juvenile)	-	0.87(1;.)	0.41(2;0.51)	0.82(4;1.27)	0.4(1;.)	-
GAMMARIDEA	1.05(1;.)	0.3(4;0.35)	2.18(1;.)	0.23(8;0.16)	0.63(8;0.81)	0.26(4;0.37)
AMPELISCA	-	-	-	0.05(1;.)	-	-
COROPHIIDAE(Juvenile)	-	0.06(1;.)	-	-	-	-
COROPHIIDAE	-	0.15(1;.)	1.09(1;.)	0.1(1;.)	3.17(2;4.4)	-
CERAPUS(Juvenile)	-	-	-	-	-	-
CERAPUS	-	-	-	-	-	-
COROPHIUM(Juvenile)	-	0.05(1;.)	-	0.86(2;0.88)	0.24(1;.)	-
COROPHIUM	-	0.14(1;.)	0.14(1;.)	0.97(4;0.94)	3.47(1;.)	0.12(1;.)
GAMMARIDAE(Juvenile)	-	0.06(2;0.01)	-	-	-	-
GAMMARIDAE	-	-	-	-	-	-
GAMMARUS	-	-	-	-	4.77(1;.)	-
GAMMARUS MUCRONATUS	-	-	-	-	-	-
MELITA(Juvenile)	7.32(1;.)	-	-	-	-	-
HYALELLA	-	-	-	0.05(1;.)	-	-
HYALELLA AZTECA	-	-	-	-	-	0.04(1;.)
HYPERIIDEA(Juvenile)	-	-	4.06(2;5.52)	12.15(4;22.99)	-	-
HYPERIIDEA	3.7(2;4.52)	0.06(1;.)	-	0.11(4;0.05)	0.46(2;0.12)	-
HYPERIIDAE(Juvenile)	-	-	-	-	1.61(1;.)	-
HYPERIA	-	-	-	0.09(1;.)	-	1.77(1;.)
LESTRIGONUS(Juvenile)	-	-	-	-	0.4(1;.)	-
LESTRIGONUS	-	-	-	-	2.49(1;.)	-
LESTRIGONUS BENGALENSIS	-	-	-	3.58(2;1.97)	-	-
OXYCEPHALUS PISCATORIS	-	-	-	0.06(1;.)	-	-
SIMORHYNCHOTUS ANTENNARIUS	-	-	-	0.55(1;.)	-	-
PARASCELIDAE	-	-	-	0.82(2;0.38)	-	-
CAPRELLIDEA(Juvenile)	2.89(1;.)	-	-	0.79(2;0.59)	-	-

Table II-A continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
ISOPODA(Larva)	8.37(1;.)	-	-	-	-	-
ISOPODA(Juvenile)	-	-	-	-	-	-
ISOPODA	0.11(4;0.04)	0.41(4;0.54)	0.11(7;0.05)	7.43(4;14.66)	0.04(1;.)	7.17(2;10.05)
SPHAEROMA	-	-	-	-	-	-
AEGATHOA	-	-	-	-	-	-
AEGATHOA OCULATA	-	-	-	-	-	0.05(1;.)
AEGATHOA MEDIALIS	-	-	-	-	-	-
SYNIDOTEA	-	-	-	0.11(1;.)	-	-
EDOTEA MONTOSA	-	-	-	-	-	-
MUNNA	-	-	-	-	-	-
MUNNA REYNOLDSI	-	-	-	-	2.03(1;.)	-
AMPHIPODA(Juvenile)	-	-	-	-	-	-
AMPHIPODA	-	-	-	-	-	0.23(1;.)
GAMMARIDEA(Juvenile)	-	-	-	-	-	-
GAMMARIDEA	0.12(3;0.09)	1.21(1;.)	0.16(1;.)	2.62(2;3.65)	-	0.07(1;.)
AMPELISCA	-	-	-	-	-	0.08(1;.)
COROPHIIDAE(Juvenile)	-	-	-	-	-	-
COROPHIIDAE	-	-	-	-	-	-
CERAPUS(Juvenile)	-	-	37.04(3;56.79)	9.47(3;9.69)	-	-
CERAPUS	-	-	0.44(1;.)	-	8.11(1;.)	0.07(1;.)
COROPHIUM(Juvenile)	-	-	-	-	-	-
COROPHIUM	-	-	-	-	-	-
GAMMARIDAE(Juvenile)	-	-	-	-	-	-
GAMMARIDAE	0.09(3;0.04)	-	-	-	-	-
GAMMARUS	-	-	-	-	-	-
GAMMARUS MUCRONATUS	-	8.23(1;.)	-	-	0.02(1;.)	27.25(1;.)
MELITA(Juvenile)	-	-	-	-	-	-
HYALELLA	-	-	-	-	-	-
HYALELLA AZTECA	-	-	-	-	-	-
HYPERIIDEA(Juvenile)	-	-	-	-	-	2.76(1;.)
HYPERIIDEA	-	1.96(1;.)	15.37(2;19.35)	7.83(9;12.29)	0.73(6;0.57)	6.77(4;7.46)
HYPERIIDAE(Juvenile)	-	-	-	-	-	-
HYPERIA	-	684(1;.)	763(1;.)	-	-	-
LESTRIGONUS(Juvenile)	-	-	-	-	-	-
LESTRIGONUS	-	-	-	-	-	-
LESTRIGONUS BENGALENSIS	-	-	-	-	9.43(2;13.26)	9.32(1;.)
OXYCEPHALUS PISCATORIS	-	-	-	-	-	-
SIMORHYNCHOTUS ANTENNARIUS	-	-	-	-	0.1(1;.)	-
PARASCELIDAE	-	-	-	-	-	-
CAPRELLIDEA(Juvenile)	-	-	-	-	-	-

Table II-A continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
CAPRELLIDEA	-	-	-	0.06(1;.)	2.6(1;.)	0.13(1;.)
CAPRELLIDAE(Juvenile)	-	-	0.08(1;.)	-	-	-
EUPHAUSIACEA(Nauplius)	-	-	-	58.8(2;66.7)	-	-
EUPHAUSIACEA(Juvenile)	-	-	0.12(1;.)	0.06(1;.)	-	-
EUPHAUSIACEA	-	-	-	-	-	-
EUPHAUSIACEA(Furcila)	2.14(1;.)	-	-	-	-	-
EUPHAUSIIDAE(Zoea)	-	0.1(1;.)	-	-	-	-
DECAPODA(Zoea)	4.31(1;.)	33.77(1;.)	0.12(1;.)	-	-	-
DECAPODA(Larva)	8.48(3;7.65)	-	0.06(1;.)	121.8(41;355.1)	51.4(41;119)	484.3(33;2361.9)
DECAPODA(Protozoea)	-	-	-	89(1;.)	-	-
PENAEIDEA(Postlarva)	-	-	-	0.27(1;.)	-	-
PENAEIDEA(Protozoea)	-	-	0.15(1;.)	-	-	-
PENAEIDAE(Larva)	-	-	0.87(3;0.61)	0.06(2;0.01)	0.65(1;.)	8.6(2;11.05)
PENAEIDAE(Postlarva)	-	-	-	-	-	-
PENAEIDAE(Protozoea)	-	-	-	-	3.03(1;.)	225.8(3;198.7)
PENAEIDAE(Mysis)	-	-	-	-	-	-
PENAEUS(Larva)	-	0.05(2;0.01)	-	0.38(4;0.46)	-	-
PENAEUS(Juvenile)	-	-	-	3.5(1;.)	-	-
PENAEUS(Postlarva)	0.14(2;0.08)	0.1(1;.)	0.11(3;0.03)	-	-	-
PENAEUS(Mysis)	-	-	-	-	-	-
PENAEUS AZTECUS(Larva)	-	0.6(2;0.73)	0.35(9;0.34)	0.64(9;1.49)	0.37(6;0.27)	-
PENAEUS AZTECUS(Juvenile)	-	-	-	-	-	-
PENAEUS AZTECUS(Postlarva)	0.31(22;0.37)	1.71(28;4.11)	2.39(26;5.21)	0.75(41;2.06)	0.36(22;0.91)	0.12(15;0.08)
PENAEUS DUORARUM(Postlarva)	-	-	0.07(1;.)	0.09(1;.)	0.1(1;.)	0.1(1;.)
PENAEUS SETIFERUS(Larva)	-	0.24(2;0.09)	-	-	-	0.06(1;.)
PENAEUS SETIFERUS(Juvenile)	-	-	-	-	-	-
PENAEUS SETIFERUS(Postlarva)	-	0.66(3;0.87)	0.89(4;1.55)	1.51(2;0.88)	0.07(1;.)	0.18(5;0.23)
TRACHYPENAEUS(Mysis)	-	-	-	-	-	-
TRACHYPENAEUS CONSTRICTUS(Mysis)	-	-	-	-	-	-
XIPHOPENAEUS KROYERI(Mysis)	-	-	-	-	-	-
SERGESTIDAE(Larva)	-	-	-	-	-	-
SERGESTIDAE(Protozoea)	-	0.06(1;.)	1.74(1;.)	-	-	-
ACETES(Protozoea)	-	-	-	0.27(1;.)	-	2.56(1;.)
ACETES AMERICANUS(Zoea)	-	-	-	-	-	21.47(2;22.82)
ACETES AMERICANUS(Larva)	-	-	-	-	3.19(1;.)	-
ACETES AMERICANUS(Juvenile)	-	-	-	0.27(1;.)	-	-
ACETES AMERICANUS	-	-	-	0.36(1;.)	0.19(1;.)	7.97(4;11.46)
ACETES AMERICANUS(Protozoea)	-	-	0.35(1;.)	12.71(4;21.02)	17.84(3;23.34)	-
ACETES AMERICANUS(Mysis)	-	-	-	0.96(2;0.98)	1.1(2;0.99)	-
LUCIFER(Protozoea)	-	-	4.9(8;12.34)	79.9(7;116)	11.78(2;1.37)	-

Table II-A continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
CAPRELLIDEA	-	-	-	-	-	-
CAPRELLIDAE(Juvenile)	-	-	-	-	-	-
EUPHAUSIACEA(Nauplius)	-	-	-	-	-	-
EUPHAUSIACEA(Juvenile)	-	-	-	-	-	-
EUPHAUSIACEA	-	-	-	0.08(3;0.03)	-	0.1(1;.)
EUPHAUSIACEA(Furcila)	-	-	-	-	-	-
EUPHAUSIIDAE(Zoea)	-	-	-	-	-	-
DECAPODA(Zoea)	-	-	19.34(1;.)	-	13.25(1;.)	-
DECAPODA(Larva)	437.2(36;787.6)	224.3(35;618.4)	146.3(43;292.4)	33.5(22;76.49)	41.72(8;58.73)	4.32(3;7.36)
DECAPODA(Protozoea)	-	-	-	13.01(1;.)	-	8.97(1;.)
PENAEIDEA(Postlarva)	-	-	-	-	-	-
PENAEIDEA(Protozoea)	-	-	-	-	-	-
PENAEIDAE(Larva)	-	0.14(1;.)	-	-	-	-
PENAEIDAE(Postlarva)	-	-	0.07(1;.)	-	-	-
PENAEIDAE(Protozoea)	-	-	-	-	-	67.7(1;.)
PENAEIDAE(Mysis)	-	-	-	0.26(4;0.3)	-	4.49(1;.)
PENAEUS(Larva)	-	-	-	-	-	-
PENAEUS(Juvenile)	-	-	-	-	-	-
PENAEUS(Postlarva)	0.06(1;.)	-	-	-	-	0.09(1;.)
PENAEUS(Mysis)	0.06(1;.)	-	-	-	-	-
PENAEUS AZTECUS(Larva)	0.14(1;.)	0.12(3;0.06)	0.2(3;0.13)	1.69(3;2.62)	-	-
PENAEUS AZTECUS(Juvenile)	-	-	-	-	-	0.05(1;.)
PENAEUS AZTECUS(Postlarva)	0.35(5;0.34)	0.36(5;0.39)	0.45(4;0.62)	0.13(12;0.14)	0.11(3;0.08)	0.11(9;0.1)
PENAEUS DUORARUM(Postlarva)	-	0.13(4;0.07)	0.29(9;0.45)	0.09(2;0)	0.04(1;.)	-
PENAEUS SETIFERUS(Larva)	0.06(1;.)	0.04(2;0)	-	0.08(1;.)	-	0.08(1;.)
PENAEUS SETIFERUS(Juvenile)	-	-	-	0.03(1;.)	-	-
PENAEUS SETIFERUS(Postlarva)	0.15(5;0.16)	0.31(14;0.34)	0.23(11;0.38)	0.08(7;0.02)	0.19(4;0.18)	-
TRACHYPENAEUS(Mysis)	-	-	-	1.11(2;0.25)	-	-
TRACHYPENAEUS CONSTRICTUS(Mysis)	-	-	-	0.89(1;.)	-	-
XIPHOPENAEUS KROYERI(Mysis)	-	-	-	1.04(1;.)	-	-
SERGESTIDAE(Larva)	-	-	-	0.24(2;0.03)	-	-
SERGESTIDAE(Protozoea)	-	-	-	-	-	-
ACETES(Protozoea)	-	-	-	-	-	-
ACETES AMERICANUS(Zoea)	-	35.11(1;.)	-	-	-	-
ACETES AMERICANUS(Larva)	-	-	6.98(2;5.07)	8572(1;.)	6.94(2;9.74)	-
ACETES AMERICANUS(Juvenile)	-	-	36.47(1;.)	-	-	-
ACETES AMERICANUS	0.05(1;.)	-	0.06(1;.)	0.14(3;0.1)	-	-
ACETES AMERICANUS(Protozoea)	-	-	-	-	-	-
ACETES AMERICANUS(Mysis)	-	-	-	-	-	-
LUCIFER(Protozoea)	-	-	-	-	-	-

Table II-A continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
LUCIFER(Mysis)	-	-	0.52(1;.)	-	-	-
LUCIFER FAXONI(Zoea)	-	0.15(1;.)	-	-	-	-
LUCIFER FAXONI(Larva)	-	-	-	-	22.3(2;31.14)	124.5(5;178.3)
LUCIFER FAXONI(Juvenile)	-	-	0.13(5;0.04)	6.79(4;13.14)	9.74(1;.)	-
LUCIFER FAXONI	-	0.48(1;.)	0.14(4;0.07)	9.25(7;13.86)	7.05(12;7.36)	5.37(7;8.59)
LUCIFER FAXONI(Postlarva)	-	-	-	-	0.72(2;0.76)	-
LUCIFER FAXONI(Protozoea)	-	0.41(1;.)	-	0.09(1;.)	-	-
LUCIFER FAXONI(Mysis)	-	-	0.61(2;0.73)	1.21(8;1.95)	9.6(3;10.78)	-
LUCIFER TYPUS(Juvenile)	-	-	0.17(1;.)	-	-	-
SERGESTES(Zoea)	-	-	0.15(1;.)	-	-	-
SERGESTES(Juvenile)	-	-	0.12(1;.)	-	-	-
SERGESTES(Protozoea)	-	-	3.77(3;4.72)	-	-	-
SERGESTES(Mysis)	-	-	1.62(1;.)	-	-	-
SOLENOCERA(Mysis)	-	-	-	-	-	-
SICYONIA(Protozoea)	-	-	-	1.16(1;.)	-	-
CARIDEA(Zoea)	-	-	-	0.26(1;.)	41.26(3;38.71)	7.75(1;.)
CARIDEA(Larva)	0.53(2;0.54)	0.09(1;.)	0.06(2;0.02)	17.8(1;.)	0.25(4;0.09)	0.16(12;0.12)
CARIDEA(Postlarva)	-	-	-	-	-	-
PALAEMONIDAE(Larva)	-	-	-	-	-	0.11(4;0.02)
LEANDER TENUICORNIS(Zoea)	-	-	-	-	-	0.09(1;.)
PALAEMONETES(Zoea)	-	-	0.48(11;0.88)	2.83(10;7.43)	1.67(5;1.5)	0.52(5;0.49)
PALAEMONETES(Larva)	-	-	-	-	6.79(10;11.93)	4.05(7;5.84)
PALAEMONETES	-	-	0.24(1;.)	0.06(1;.)	-	-
PALAEMONETES(Postlarva)	-	-	-	15.88(1;.)	-	-
PALAEMONETES INTERMEDIUS(Zoea)	-	-	0.05(1;.)	1.39(4;2.61)	-	-
PALAEMONETES PALUDOSUS(Zoea)	-	-	-	0.05(1;.)	-	-
PALAEMONETES PALUDOSUS	-	-	0.09(1;.)	-	-	-
PALAEMONETES PUGIO(Zoea)	-	-	-	0.11(1;.)	-	-
PALAEMONETES PUGIO(Larva)	0.06(1;.)	-	-	0.06(1;.)	-	-
PALAEMONETES PUGIO(Juvenile)	-	-	-	-	-	-
PALAEMONETES PUGIO	-	-	-	0.2(1;.)	0.05(1;.)	-
PALAEMONETES PUGIO(Postlarva)	-	-	-	-	-	-
PERICLIMENES(Zoea)	-	-	-	0.65(4;0.81)	-	0.16(1;.)
ALPHEIDAE(Zoea)	-	-	0.37(1;.)	1.6(6;1.53)	1.76(3;1.97)	-
ALPHEUS(Larva)	-	-	-	-	-	0.23(2;0.23)
OGYRIDES(Zoea)	-	0.11(1;.)	-	-	-	-
OGYRIDES LIMICOLA(Zoea)	-	-	0.14(3;0.04)	1.24(8;1.15)	3.02(4;4.94)	0.22(1;.)
HIPPOLYTIDAE(Zoea)	-	-	-	-	0.45(1;.)	-
HIPPOLYTE(Zoea)	-	-	0.08(1;.)	-	-	-
HIPPOLYTE(Larva)	-	-	-	-	-	-

Table II-A continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
LUCIFER(Mysis)	-	-	-	-	-	-
LUCIFER FAXONI(Zoea)	-	20.37(1;.)	-	-	-	-
LUCIFER FAXONI(Larva)	-	-	11.9(2;10.96)	46.67(2;59.84)	6.25(7;15.54)	4.66(1;.)
LUCIFER FAXONI(Juvenile)	154.6(1;.)	-	-	15.32(2;20.47)	-	-
LUCIFER FAXONI	62.5(3;60.7)	5.68(5;8.26)	15.9(9;14.51)	7.63(15;9.36)	1.83(2;1)	0.31(1;.)
LUCIFER FAXONI(Postlarva)	-	-	-	-	-	-
LUCIFER FAXONI(Protozoea)	132.5(1;.)	-	-	-	-	-
LUCIFER FAXONI(Mysis)	-	-	-	-	-	-
LUCIFER TYPUS(Juvenile)	-	-	-	-	-	-
SERGESTES(Zoea)	-	-	-	-	-	-
SERGESTES(Juvenile)	-	-	-	-	-	-
SERGESTES(Protozoea)	-	-	-	-	-	-
SERGESTES(Mysis)	-	-	-	-	-	-
SOLENOCERA(Mysis)	-	-	-	0.04(1;.)	0.16(1;.)	-
SICYONIA(Protozoea)	-	-	-	-	-	-
CARIDEA(Zoea)	6.5(3;3.72)	19.03(4;14.02)	-	-	-	-
CARIDEA(Larva)	8.08(4;15.71)	15.65(9;23.13)	0.61(4;0.85)	0.29(4;0.29)	-	-
CARIDEA(Postlarva)	-	-	-	14.99(5;19.17)	-	0.34(1;.)
PALAEMONIDAE(Larva)	-	-	-	-	-	-
LEANDER TENUICORNIS(Zoea)	-	-	-	-	-	-
PALAEMONETES(Zoea)	-	25.02(1;.)	41.21(5;36.74)	-	-	-
PALAEMONETES(Larva)	3.52(12;4.81)	4.07(9;7.24)	8.32(18;11.62)	6.58(12;11.33)	-	-
PALAEMONETES	-	-	-	-	-	-
PALAEMONETES(Postlarva)	-	-	-	-	-	-
PALAEMONETES INTERMEDIUS(Zoea)	-	-	-	-	-	-
PALAEMONETES PALUDOSUS(Zoea)	-	-	-	-	-	-
PALAEMONETES PALUDOSUS	-	-	-	-	-	-
PALAEMONETES PUGIO(Zoea)	-	-	-	-	-	-
PALAEMONETES PUGIO(Larva)	-	-	-	-	0.1(1;.)	-
PALAEMONETES PUGIO(Juvenile)	-	-	-	-	-	0.05(2;0)
PALAEMONETES PUGIO	-	-	-	-	-	-
PALAEMONETES PUGIO(Postlarva)	-	-	0.06(1;.)	-	-	-
PERICLIMENES(Zoea)	-	-	-	-	-	-
ALPHEIDAE(Zoea)	-	0.1(1;.)	-	-	-	-
ALPHEUS(Larva)	-	11.85(1;.)	-	-	-	-
OGYRIDES(Zoea)	-	-	-	-	13.83(1;.)	-
OGYRIDES LIMICOLA(Zoea)	-	-	-	29.8(1;.)	-	-
HIPPOLYTIDAE(Zoea)	-	-	-	-	-	-
HIPPOLYTE(Zoea)	-	-	-	-	-	-
HIPPOLYTE(Larva)	0.54(1;.)	-	-	-	-	-

Table II-A continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
LATREUTES FUCORUM(Zoea)	-	-	-	-	0.23(1;.)	-
LATREUTES FUCORUM(Postlarva)	-	-	-	-	-	-
LATREUTES PARVULUS(Zoea)	-	-	0.07(1;.)	-	-	-
PROCESSA(Zoea)	-	0.09(1;.)	0.15(1;.)	-	-	-
PALINURA(Zoea)	-	-	-	-	-	36.37(2;17.43)
ANOMURA(Zoea)	-	-	-	-	0.97(4;0.86)	18.95(2;4.78)
ANOMURA(Megalopa)	-	-	-	-	-	-
CALLIANASSIDAE(Zoea)	-	-	-	-	0.23(1;.)	-
CALLIANASSA(Zoea)	-	-	-	-	-	-
CALLIANASSA MAJOR(Zoea)	-	-	-	-	1.59(1;.)	0.91(1;.)
PAGURIDAE(Zoea)	-	-	0.41(1;.)	3.94(3;6.54)	4.23(2;5.42)	-
PAGURIDAE(Megalopa)	-	0.06(1;.)	-	-	-	0.06(1;.)
PAGURIDAE(Larva)	-	-	-	0.08(1;.)	-	0.23(2;0.17)
PAGURUS(Zoea)	-	-	-	0.06(1;.)	-	-
PAGURUS(Megalopa)	-	0.12(1;.)	-	-	-	-
PAGURUS(Larva)	-	-	-	-	-	0.09(1;.)
PAGURUS LONGICARPUS(Zoea)	-	0.06(1;.)	-	0.39(3;0.29)	-	-
PORCELLANIDAE(Zoea)	-	-	-	-	-	-
PETROLISTHES(Zoea)	-	-	-	-	1.19(1;.)	-
LEPIDOPA(Zoea)	-	-	-	0.21(2;0.21)	-	-
ALBUNEA PARETII(Zoea)	-	-	-	-	-	-
ALBUNEA GIBBESI(Zoea)	-	-	-	-	0.31(2;0.12)	-
CLIBANARIS VITTATUS(Megalopa)	-	-	-	-	-	-
UPOGEBIA AFFINIS(Zoea)	-	-	-	0.29(2;0.02)	1.2(1;.)	-
BRACHYURA(Zoea)	1.38(1;.)	2.46(2;0.32)	6.49(3;6.94)	56.5(28;108.9)	87.4(40;124.5)	59.7(38;77.1)
BRACHYURA(Megalopa)	-	0.17(1;.)	1.65(5;3.52)	0.13(1;.)	3.72(3;5.93)	0.27(4;0.09)
BRACHYURA(Larva)	-	-	-	-	6.01(3;9.35)	3.06(4;4.76)
BRACHYURA(Juvenile)	-	0.17(1;.)	0.05(1;.)	0.16(3;0.18)	0.22(3;0.18)	-
DROMIIDAE(Postlarva)	-	0.09(1;.)	-	-	-	-
CALAPPIDAE(Zoea)	-	-	-	1.1(1;.)	-	-
LEUCOSIIDAE(Zoea)	-	-	-	-	0.8(3;0.7)	-
PERSEPHONA(Zoea)	-	-	-	-	4.84(1;.)	-
MAJIDAE(Megalopa)	-	-	-	-	0.09(1;.)	-
LIBINIA(Zoea)	-	-	0.12(1;.)	0.07(1;.)	-	-
PORTUNIDAE(Zoea)	-	0.05(2;0)	2.17(3;3.51)	0.05(1;.)	-	-
PORTUNIDAE(Megalopa)	0.07(3;0.03)	0.1(1;.)	0.12(1;.)	0.07(1;.)	-	-
ARENAEUS CRIBRARIUS(Megalopa)	-	-	-	-	0.06(1;.)	-
CALLINECTES(Zoea)	-	0.34(1;.)	0.68(6;1.2)	0.67(4;0.72)	-	-
CALLINECTES(Megalopa)	-	0.11(1;.)	0.27(1;.)	0.19(2;0.19)	-	-
CALLINECTES SAPIDUS(Zoea)	-	-	-	-	3.56(1;.)	-

Table II-A continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
LATREUTES FUCORUM(Zoea)	-	-	-	-	-	-
LATREUTES FUCORUM(Postlarva)	-	-	-	0.14(1;.)	-	-
LATREUTES PARVULUS(Zoea)	-	-	-	-	-	-
PROCESSA(Zoea)	-	-	-	-	-	-
PALINURA(Zoea)	-	-	-	-	-	-
ANOMURA(Zoea)	-	-	-	0.07(1;.)	-	-
ANOMURA(Megalopa)	-	-	-	0.07(1;.)	-	-
CALLIANASSIDAE(Zoea)	-	-	36.47(1;.)	-	-	-
CALLIANASSA(Zoea)	0.06(1;.)	-	-	-	-	-
CALLIANASSA MAJOR(Zoea)	-	-	-	-	-	-
PAGURIDAE(Zoea)	-	62.1(1;.)	-	-	-	-
PAGURIDAE(Megalopa)	-	-	-	-	-	-
PAGURIDAE(Larva)	0.1(1;.)	-	-	-	-	-
PAGURUS(Zoea)	-	-	10.21(2;14.36)	-	-	-
PAGURUS(Megalopa)	-	-	-	-	-	-
PAGURUS(Larva)	13.93(1;.)	-	-	-	-	-
PAGURUS LONGICARPUS(Zoea)	-	-	-	-	-	-
PORCELLANIDAE(Zoea)	-	-	-	0.17(1;.)	-	-
PETROLISTHES(Zoea)	-	-	-	-	-	-
LEPIDOPA(Zoea)	-	-	-	-	-	-
ALBUNEA PARETII(Zoea)	-	-	0.08(1;.)	-	-	-
ALBUNEA GIBBESI(Zoea)	-	-	-	-	-	-
CLIBANARIS VITTATUS(Megalopa)	-	-	-	0.31(2;0.37)	-	-
UPOGEBIA AFFINIS(Zoea)	38.08(2;16.43)	-	-	-	-	-
BRACHYURA(Zoea)	160.2(45;293.4)	773(51;2621)	43.6(15;86.33)	14.63(8;11.41)	67.1(1;.)	40.47(3;40.9)
BRACHYURA(Megalopa)	-	168(4;332.2)	7.28(4;14.16)	0.57(8;0.71)	0.13(1;.)	0.12(2;0.01)
BRACHYURA(Larva)	21.71(3;30.52)	2223(12;7616)	6.02(7;4.9)	20.74(6;17.42)	0.22(1;.)	0.92(1;.)
BRACHYURA(Juvenile)	-	-	-	-	-	0.08(1;.)
DROMIIDAE(Postlarva)	-	-	-	-	-	-
CALAPPIDAE(Zoea)	-	-	-	-	-	-
LEUCOSIIDAE(Zoea)	-	-	-	-	-	-
PERSEPHONA(Zoea)	-	-	-	-	-	-
MAJIDAE(Megalopa)	-	-	-	-	-	-
LIBINIA(Zoea)	-	-	-	-	-	-
PORTUNIDAE(Zoea)	-	-	-	-	-	-
PORTUNIDAE(Megalopa)	-	0.96(1;.)	-	-	0.05(1;.)	-
ARENAEUS CRIBRARIUS(Megalopa)	-	-	-	-	-	-
CALLINECTES(Zoea)	-	-	0.23(1;.)	-	13.83(1;.)	-
CALLINECTES(Megalopa)	-	-	0.26(1;.)	-	-	-
CALLINECTES SAPIDUS(Zoea)	-	-	-	0.46(1;.)	-	-

Table II-A continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
CALLINECTES SAPIDUS(Megalopa)	0.3(6;0.4)	0.2(5;0.14)	0.2(3;0.17)	0.16(3;0.15)	0.49(26;0.82)	0.23(32;0.31)
CALLINECTES SAPIDUS(Juvenile)	0.12(5;0.04)	0.1(2;0.02)	0.16(3;0.09)	0.43(3;0.43)	0.11(5;0.12)	0.09(8;0.05)
CALLINECTES SIMILIS(Zoea)	-	-	-	-	2.39(1;.)	-
CALLINECTES SIMILIS(Megalopa)	0.79(22;1.74)	3.33(15;5.74)	16.65(14;60.43)	0.13(7;0.09)	0.33(14;0.41)	0.19(5;0.11)
CALLINECTES SIMILIS(Juvenile)	-	-	0.09(3;0.02)	-	0.08(2;0.02)	0.05(1;.)
OVALIPES(Juvenile)	-	-	-	-	-	-
PORTUNUS(Zoea)	-	-	-	-	0.4(1;.)	-
PORTUNUS(Megalopa)	0.14(1;.)	0.05(1;.)	-	0.07(1;.)	0.06(2;0.01)	0.06(2;0.02)
PORTUNUS(Juvenile)	-	0.12(1;.)	0.09(1;.)	-	-	0.05(2;0)
XANTHIDAE(Zoea)	-	-	-	0.16(2;0.14)	-	-
XANTHIDAE(Megalopa)	-	-	-	0.07(1;.)	0.09(1;.)	-
XANTHIDAE	-	-	-	-	-	-
EURYPANOPEUS(Zoea)	-	-	-	1.56(2;0.79)	-	-
EURYPANOPEUS DEPRESSUS(Zoea)	-	-	0.11(1;.)	0.22(1;.)	-	0.39(1;.)
HEXAPANOPEUS ANGUSTIFRONS(Zoea)	-	-	2.51(2;3.42)	3.52(6;5.42)	10.14(4;16.9)	0.2(1;.)
HEXAPANOPEUS ANGUSTIFRONS(Megalopa)	-	-	-	-	-	0.05(1;.)
NEOPANOPE(Zoea)	-	-	-	-	-	-
NEOPANOPE TEXANA(Zoea)	-	-	0.2(2;0.1)	-	0.4(1;.)	-
PANOPEUS(Zoea)	-	-	0.07(1;.)	5.46(3;8.38)	1.61(1;.)	-
PANOPEUS HERBSTII(Zoea)	-	-	0.15(1;.)	-	1.09(3;0.55)	-
RHITHROPANOPEUS(Zoea)	-	-	5.85(1;.)	26.73(6;47.24)	25.47(2;35.1)	-
RHITHROPANOPEUS HARRISI(Zoea)	-	-	2.44(8;4.34)	5.79(12;7.35)	15(10;20.6)	5.55(6;5.34)
MENIPPE(Zoea)	-	-	-	0.36(1;.)	5.55(2;2.21)	-
MENIPPE MERCENARIA(Zoea)	-	-	-	-	-	0.91(1;.)
MENIPPE MERCENARIA(Megalopa)	-	-	-	-	-	-
PINNOTHERIDAE(Zoea)	-	-	0.06(1;.)	0.16(2;0.15)	-	-
PINNOTHERES MACULATUS(Zoea)	-	-	-	0.05(1;.)	1.25(2;1.45)	-
PINNIXA(Zoea)	-	-	0.26(5;0.16)	0.57(5;0.6)	1.6(2;0.01)	-
PINNIXA(Postlarva)	-	-	-	0.27(1;.)	-	-
PINNIXA CHAETOPTERANA(Zoea)	-	-	0.14(1;.)	-	0.4(1;.)	-
PINNIXA SAYANA(Zoea)	-	-	0.28(4;0.19)	3.12(9;3.52)	4.33(4;5.88)	3.63(1;.)
PINNIXA SAYANA(Megalopa)	-	-	-	0.55(1;.)	-	-
PARAPINNIXA(Megalopa)	0.09(1;.)	-	-	-	-	-
GRAPSIDAE(Megalopa)	-	-	-	-	-	0.05(1;.)
SESARMA(Zoea)	-	-	-	-	4(6;5.58)	-
SESARMA CINEREUM(Zoea)	-	-	-	-	-	2.18(2;0.52)
SESARMA RETICULATUM(Zoea)	-	-	-	0.23(3;0.25)	-	-
UCA(Zoea)	-	-	4.81(8;12.47)	8.2(14;16.24)	44.14(10;93.41)	4.08(5;2.76)
UCA(Megalopa)	-	-	-	-	-	0.09(3;0.07)
STOMATOPODA(Larva)	-	-	0.1(1;.)	-	-	0.1(1;.)

Table II-A continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
CALLINECTES SAPIDUS(Megalopa)	0.32(29;0.48)	15.52(47;48.91)	2.68(59;11.83)	27.84(34;159.61)	0.32(24;0.44)	0.18(2;0.16)
CALLINECTES SAPIDUS(Juvenile)	0.14(3;0.07)	0.13(7;0.1)	0.08(3;0.04)	0.12(4;0.1)	0.08(2;0.05)	0.1(3;0.05)
CALLINECTES SIMILIS(Zoea)	-	-	-	-	-	-
CALLINECTES SIMILIS(Megalopa)	0.11(6;0.07)	0.27(12;0.27)	0.39(8;0.33)	0.76(7;1.32)	0.25(14;0.44)	0.39(7;0.39)
CALLINECTES SIMILIS(Juvenile)	0.07(3;0.03)	0.07(1;.)	0.05(1;.)	-	-	-
OVALIPES(Juvenile)	-	-	-	-	-	0.22(1;.)
PORTUNUS(Zoea)	-	-	-	-	-	-
PORTUNUS(Megalopa)	0.12(4;0.09)	0.15(5;0.07)	0.41(7;0.87)	0.18(3;0.12)	0.09(7;0.07)	-
PORTUNUS(Juvenile)	-	-	0.08(1;.)	-	-	-
XANTHIDAE(Zoea)	-	-	-	-	-	-
XANTHIDAE(Megalopa)	0.09(1;.)	-	-	-	-	-
XANTHIDAE	-	0.34(1;.)	-	-	-	-
EURYPANOPEUS(Zoea)	-	-	21.56(3;21.11)	-	-	-
EURYPANOPEUS DEPRESSUS(Zoea)	-	-	-	-	-	-
HEXAPANOPEUS ANGUSTIFRONS(Zoea)	-	-	-	-	-	-
HEXAPANOPEUS ANGUSTIFRONS(Megalopa)	-	-	-	-	-	-
NEOPANOPE(Zoea)	-	-	38.2(2;49.11)	-	-	-
NEOPANOPE TEXANA(Zoea)	0.07(1;.)	-	-	0.26(1;.)	0.07(1;.)	-
PANOPEUS(Zoea)	-	-	36.06(4;20.1)	-	-	-
PANOPEUS HERBSTII(Zoea)	-	-	-	-	-	-
RHITHROPANOPEUS(Zoea)	-	-	9.71(11;19.13)	7.48(3;6.84)	-	-
RHITHROPANOPEUS HARRISI(Zoea)	-	-	17.78(10;22.36)	7.34(4;2.48)	9.68(1;.)	-
MENIPPE(Zoea)	-	-	-	-	-	-
MENIPPE MERCENARIA(Zoea)	-	-	-	-	-	-
MENIPPE MERCENARIA(Megalopa)	-	-	0.07(2;0)	-	-	-
PINNOTHERIDAE(Zoea)	-	-	-	-	-	-
PINNOTHERES MACULATUS(Zoea)	-	-	-	-	-	-
PINNIXA(Zoea)	-	-	36.47(1;.)	3.34(3;4.63)	13.83(1;.)	-
PINNIXA(Postlarva)	-	-	-	-	-	-
PINNIXA CHAETOPTERANA(Zoea)	-	-	-	-	-	-
PINNIXA SAYANA(Zoea)	-	-	-	17.37(1;.)	-	-
PINNIXA SAYANA(Megalopa)	-	-	-	-	-	-
PARAPINNIXA(Megalopa)	-	-	-	-	-	-
GRAPSIDAE(Megalopa)	-	-	-	-	-	-
SESARMA(Zoea)	-	-	41.86(4;48.25)	85.1(3;144.4)	-	-
SESARMA CINEREUM(Zoea)	-	-	-	-	-	-
SESARMA RETICULATUM(Zoea)	-	-	-	-	-	-
UCA(Zoea)	-	-	336.6(17;592.2)	104.9(4;165.7)	-	-
UCA(Megalopa)	0.09(2;0.04)	0.17(2;0.1)	0.09(1;.)	0.03(1;.)	-	-
STOMATOPODA(Larva)	-	0.06(1;.)	-	0.15(1;.)	-	-

Table II-A continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
STOMATOPODA(Pseudozoea)	-	-	-	-	-	-
SQUILLIDAE(Zoea)	-	-	-	0.36(1;.)	-	-
SQUILLIDAE(Larva)	-	-	0.08(1;.)	-	-	-
SQUILLIDAE(Antizoea)	-	-	-	-	-	0.04(1;.)
SQUILLA(Postlarva)	-	0.12(1;.)	-	-	-	-
SQUILLA(Protozoea)	-	-	-	-	-	0.08(3;0.03)
SQUILLA(Pseudozoea)	-	-	-	0.12(1;.)	-	-
INSECTA(Larva)	-	0.59(2;0.74)	-	2.67(1;.)	7.12(2;9.89)	-
INSECTA	0.16(1;.)	-	0.1(1;.)	0.1(1;.)	0.08(1;.)	10.05(2;14.09)
COLLEMBOLA	-	-	1.09(1;.)	0.05(1;.)	-	-
EPHEMEROPTERA(Larva)	-	-	0.33(1;.)	-	0.21(1;.)	6.51(2;5.59)
EPHEMEROPTERA	-	-	-	-	-	-
ZYGOPTERA(Larva)	-	-	0.09(1;.)	-	-	-
COENAGRIONIDAE	-	0.05(1;.)	-	-	-	-
HEMIPTERA(Larva)	-	-	0.05(1;.)	-	-	-
HEMIPTERA(Juvenile)	-	-	0.13(1;.)	-	-	-
DIPTERA(Larva)	-	-	-	0.23(1;.)	-	-
CULICIDAE(Larva)	-	1.56(2;0.63)	-	-	0.11(1;.)	-
CHIRONOMIDAE(Larva)	-	-	-	-	0.43(1;.)	-
PHORONIDA(Actinotrocha)	-	-	0.32(1;.)	-	1(2;0.86)	-
BRYOZOA(Cyphonautes larva)	85.4(5;93.6)	18.15(5;23.65)	14.89(9;24.99)	26.3(6;46.6)	77.5(4;103.2)	14.49(7;12.41)
ECHINODERMATA(Larva)	-	-	-	-	51.3(3;8.4)	-
ASTEROIDEA(Larva)	-	-	-	0.36(1;.)	-	-
OPHIUROIDEA(Larva)	-	-	-	4.28(2;5.46)	10.15(2;0.58)	9.3(4;15.81)
HOLOTHUROIDEA(Larva)	-	-	-	17.47(1;.)	-	-
CHAETOGNATHA	12.9(11;16.3)	2.09(1;.)	1.85(3;1.54)	50.3(11;72.4)	147.6(22;205.7)	49.67(17;61.11)
SAGITTA(Juvenile)	14.98(1;.)	-	5.27(5;10.41)	42.98(9;82.59)	5.7(4;5.41)	7.25(1;.)
SAGITTA	-	3.03(4;1.5)	0.77(1;.)	215.2(4;332.2)	231.1(3;284.7)	49.54(2;3.53)
SAGITTA ELEGANS(Juvenile)	-	-	7.96(1;.)	-	-	-
SAGITTA ENFLATA(Juvenile)	-	-	0.99(1;.)	-	-	-
SAGITTA ENFLATA	-	-	-	-	-	-
SAGITTA HISPIDA(Juvenile)	-	-	3.34(2;1.02)	-	-	-
SAGITTA HISPIDA	-	0.09(1;.)	0.19(1;.)	104.3(1;.)	-	-
SAGITTA TENUIS	-	-	-	-	-	-
SAGITTA FRIDERICI	-	-	-	-	-	-
SAGITTA HELENAE	-	-	-	-	-	-
PTEROSAGITTA DRACO	-	-	0.12(1;.)	-	-	-
UROCHORDATA(Larva)	-	-	1.09(1;.)	-	-	-
UROCHORDATA	-	-	1.47(1;.)	-	-	-
THALIACEA	-	-	35.56(2;31.27)	29.22(2;5.05)	-	-

Table II-A continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
STOMATOPODA(Pseudozoea)	-	-	-	0.12(2;0.06)	-	-
SQUILLIDAE(Zoea)	-	-	-	-	-	-
SQUILLIDAE(Larva)	-	-	-	-	-	-
SQUILLIDAE(Antizoea)	-	-	-	-	-	-
SQUILLA(Postlarva)	-	-	-	-	-	-
SQUILLA(Protozoea)	-	-	-	-	-	-
SQUILLA(Pseudozoea)	-	-	-	-	-	-
INSECTA(Larva)	0.05(1;.)	-	0.48(1;.)	0.11(2;0.04)	-	-
INSECTA	0.18(3;0.02)	-	0.13(3;0.13)	1.1(5;2.11)	-	0.07(1;.)
COLLEMBOLA	-	-	-	-	-	-
EPHEMEROPTERA(Larva)	-	-	-	-	-	-
EPHEMEROPTERA	-	-	0.06(1;.)	-	-	-
ZYGOPTERA(Larva)	-	-	-	-	-	-
COENAGRIONIDAE	-	-	-	-	-	-
HEMIPTERA(Larva)	-	-	-	-	-	-
HEMIPTERA(Juvenile)	-	-	-	-	-	-
DIPTERA(Larva)	-	-	-	-	-	-
CULICIDAE(Larva)	0.04(1;.)	-	-	-	-	-
CHIRONOMIDAE(Larva)	28.14(1;.)	-	-	-	-	-
PHORONIDA(Actinotrocha)	98.6(2;17.4)	-	-	-	-	-
BRYOZOA(Cyphonautes larva)	17.41(3;16.97)	1.87(2;0.85)	61.8(2;87.3)	23.66(1;.)	26.4(3;43.46)	20.51(1;.)
ECHINODERMATA(Larva)	36.49(1;.)	0.18(1;.)	258.4(5;565.7)	46.27(6;48.54)	0.15(1;.)	-
ASTEROIDEA(Larva)	-	-	-	-	-	-
OPHIUROIDEA(Larva)	170.1(4;220.9)	37.72(7;35.33)	18.45(2;14.23)	5.2(1;.)	-	-
HOLOTHUROIDEA(Larva)	-	-	-	-	-	-
CHAETOGNATHA	167.7(26;235)	106.5(12;183.9)	252.1(24;461.8)	722(13;2181)	25.55(14;32.27)	65(15;77.2)
SAGITTA(Juvenile)	-	-	-	12.93(4;23.96)	28.52(4;30.67)	69.6(6;34.9)
SAGITTA	-	31.89(5;40.31)	109.9(12;221.7)	70.8(11;75.7)	68.7(7;93.1)	4.3(3;3.63)
SAGITTA ELEGANS(Juvenile)	-	-	-	-	-	-
SAGITTA ENFLATA(Juvenile)	-	-	-	-	-	-
SAGITTA ENFLATA	9.76(1;.)	51(1;.)	1.69(1;.)	26.25(8;22.44)	5.76(1;.)	-
SAGITTA HISPIDA(Juvenile)	-	-	-	-	-	-
SAGITTA HISPIDA	-	-	-	2.98(1;.)	-	-
SAGITTA TENUIS	-	-	44.05(1;.)	135.9(2;187.9)	-	-
SAGITTA FRIDERICI	-	-	-	-	-	8.97(1;.)
SAGITTA HELENAE	-	-	-	2.98(1;.)	-	-
PTEROSAGITTA DRACO	-	-	-	-	-	-
UROCHORDATA(Larva)	-	-	-	-	-	-
UROCHORDATA	-	-	-	-	-	-
THALIACEA	54.7(2;53)	-	-	-	-	-

Table II-A continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
DOLIOLIDA	5.76(3;9.12)	-	183.2(1;.)	144.8(3;165.7)	-	30.6(3;24.97)
DOLIOLUM	-	-	-	-	13.08(1;.)	-
SALPIDA	-	-	2.91(2;2.81)	0.86(3;0.96)	-	-
SALPIDAE	-	-	-	-	-	-
SALPA	1.38(1;.)	-	-	-	69.3(1;.)	-
APPENDICULARIA	116.7(6;96.6)	0.87(1;.)	86.2(7;56.3)	260.7(12;349)	198.6(12;314.5)	141.6(11;96.3)
OIKOPLEURA(Juvenile)	-	173.9(1;.)	0.68(2;0.28)	108.2(3;98.4)	398.4(1;.)	-
OIKOPLEURA	31.52(10;61.29)	7.45(1;.)	46.22(10;86.1)	559(13;995)	345.3(18;497)	195.5(14;134)
AMPHIOXUS(Juvenile)	-	-	-	-	-	-

Table II-A continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
DOLIOLIDA	6.99(1;.)	18.25(1;.)	1.69(1;.)	49.65(1;.)	8.6(3;4.87)	-
DOLIOLUM	-	-	-	-	-	-
SALPIDA	-	-	-	-	-	-
SALPIDAE	-	-	30.21(1;.)	33.81(1;.)	-	141.2(3;34.8)
SALPA	-	-	-	24.94(3;18.66)	-	-
APPENDICULARIA	292.3(13;389.2)	229.9(9;174.4)	267.4(1;.)	-	-	-
OIKOPLEURA(Juvenile)	-	-	-	-	-	.(.;.)
OIKOPLEURA	1178(13;2266)	235.8(22;339.3)	724(30;1852)	368.8(24;872)	210.6(34;439.1)	194.5(30;264.2)
AMPHIOXUS(Juvenile)	-	-	-	4.73(1;.)	-	-

Table II-B. Monthly mean densities (with the number of positive samples and standard deviation in parenthesis) for zooplankton biomass (ml/m^3; settled and displacement volumes) and for zooplankton taxa (no./m^3) collected with a 1-m, 0.363-mm mesh, plankton net between February 1978 and December 1995 during the LOOP Environmental Monitoring Project. Taxonomic order within table was determined by the National Oceanographic Data Center (NODC) code.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Settled Volume	0.68(52;0.58)	1.69(55;4.91)	4.53(50;26.35)	1.96(54;2.26)	0.85(61;0.7)	1.6(58;2.72)
Displacement Volume	0.39(127;0.67)	0.7(109;2.08)	1.33(127;8.38)	0.6(127;0.75)	0.7(135;1.15)	0.52(133;0.75)
NOCTILUCA SCINTILLANS	-	-	-	-	-	-
CNIDARIA(Larva)	-	-	-	-	-	-
CNIDARIA	0.17(2;0.09)	0.22(2;0.29)	5.81(4;9.4)	1.58(4;2.12)	2.93(4;2.31)	-
CNIDARIA(Polyp)	-	-	-	-	0.97(1;.)	0.2(1;.)
CNIDARIA(Medusa)	-	0.42(1;.)	-	-	-	-
HYDROZOA	-	-	-	-	-	0.42(3;0.39)
HYDROZOA(Medusa)	-	-	0.01(4;0.01)	6.92(1;.)	2.25(4;3.36)	5.45(3;4.32)
HYDROZOA(Colony)	-	-	0.01(2;0.01)	-	-	-
ANTHOMEDUSAE(Medusa)	-	-	-	1.9(2;2.21)	-	-
EUPHYSORA GRACILIS	-	0.14(1;.)	0.05(2;0.04)	-	-	-
EUPHYSORA GRACILIS(Medusa)	-	-	-	-	7.86(2;11.02)	-
SIPHONOPHORA(Larva)	-	-	-	-	1.44(1;.)	-
SIPHONOPHORA	1.15(4;1.17)	1.02(10;2.05)	1.39(10;3.7)	0.32(5;0.35)	0.24(3;0.11)	0.72(4;0.72)
DIPHYES	-	1.01(2;0.9)	-	-	-	0.14(1;.)
DIPHYES DISPAR	-	-	1.24(1;.)	0.26(2;0.25)	-	-
ABYLOPSIS	-	0.36(1;.)	0.35(1;.)	0.2(2;0.17)	-	0.14(1;.)
CTENOPHORA(Larva)	-	-	-	-	-	1.27(1;.)
CTENOPHORA	-	-	-	-	0.27(1;.)	-
ROTIFERA	-	-	-	-	-	-
NEMATODA	-	-	-	3.79(1;.)	-	-
POLYCHAETA(Juvenile)	-	0.05(1;.)	-	0.22(2;0.1)	0.17(4;0.16)	0.6(1;.)
POLYCHAETA(Trochophore larva)	0.25(4;0.27)	0.23(8;0.26)	0.82(2;0.16)	4.35(8;5.31)	0.19(2;0.01)	0.4(1;.)
PHYLLODOCIDAE	-	-	0.01(1;.)	2.38(1;.)	-	-
ALCIOPIDAE	0.01(3;0)	0.1(3;0.16)	0.01(1;.)	0.02(4;0.01)	0.18(2;0.24)	-
TYPHLOSCOLECIDAE	-	-	-	0.01(1;.)	-	-
TOMOPTERIS(Larva)	-	-	0.23(1;.)	-	0.1(1;.)	-
TOMOPTERIS(Juvenile)	-	-	-	0.03(1;.)	-	-
TOMOPTERIS	0.01(2;0)	0.2(3;0.24)	-	0.5(1;.)	0.04(4;0.05)	-
NEREIDAE(Larva)	-	0.01(1;.)	1.32(1;.)	-	-	-
NEREIDAE(Juvenile)	-	-	-	-	0.12(1;.)	-
NEREIDAE	-	-	-	0(1;.)	-	-
MOLLUSCA(Veliger)	-	-	-	2.26(1;.)	-	-
GASTROPODA(Veliger)	0.23(2;0.32)	0.05(4;0.05)	0.02(1;.)	1.07(5;1.15)	10.71(7;23.03)	3.13(3;3.98)

Table II-B continued

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Settled Volume	1.23(56;2.25)	0.69(61;0.75)	0.89(41;1.17)	1.13(44;1.28)	1.34(56;1.63)	0.56(60;0.51)
Displacement Volume	0.4(138;0.76)	0.32(136;0.36)	0.42(130;0.53)	0.42(113;0.46)	0.42(133;0.58)	0.38(123;0.62)
NOCTILUCA SCINTILLANS	-	-	-	-	-	13.33(1;.)
CNIDARIA(Larva)	-	-	-	-	9.77(1;.)	-
CNIDARIA	0.74(1;.)	2.52(7;2.13)	5.9(2;4.28)	10.62(4;8.47)	3.53(6;4.72)	2.98(1;.)
CNIDARIA(Polyp)	-	-	-	-	-	-
CNIDARIA(Medusa)	-	-	-	-	-	-
HYDROZOA	-	35.09(1;.)	-	-	-	-
HYDROZOA(Medusa)	-	32.46(2;18.75)	-	-	-	-
HYDROZOA(Colony)	-	-	-	-	-	-
ANTHOMEDUSAE(Medusa)	-	-	-	-	-	-
EUPHYSORA GRACILIS	-	-	-	-	1.43(1;.)	-
EUPHYSORA GRACILIS(Medusa)	-	-	-	-	-	-
SIPHONOPHORA(Larva)	-	-	-	-	-	-
SIPHONOPHORA	-	5.45(4;5.37)	-	4.32(2;4.24)	4.22(11;4.07)	6.95(5;13.82)
DIPHYES	-	-	-	-	-	-
DIPHYES DISPAR	-	-	-	-	-	-
ABYLOPSIS	-	-	-	-	0.2(1;.)	-
CTENOPHORA(Larva)	-	-	-	-	-	-
CTENOPHORA	-	0.71(3;0.6)	-	-	-	-
ROTIFERA	-	4379(1;.)	-	-	-	-
NEMATODA	-	-	-	-	-	-
POLYCHAETA(Juvenile)	-	1.37(2;1.94)	-	-	-	-
POLYCHAETA(Trochophore larva)	-	2.52(14;3.39)	2.14(1;.)	1.46(3;0.92)	0.75(11;0.76)	0.4(7;0.55)
PHYLLODOCIDAE	-	-	-	-	-	-
ALCIOPIDAE	-	-	-	-	0.11(11;0.18)	0.04(2;0.02)
TYPHLOSCOLECIDAE	-	-	-	-	-	-
TOMOPTERIS(Larva)	-	-	-	-	1.43(1;.)	-
TOMOPTERIS(Juvenile)	-	-	-	-	-	-
TOMOPTERIS	-	-	-	-	0.03(7;0.02)	0.03(5;0.03)
NEREIDAE(Larva)	-	-	-	-	-	-
NEREIDAE(Juvenile)	-	-	-	-	-	-
NEREIDAE	-	-	-	-	-	-
MOLLUSCA(Veliger)	-	-	-	-	-	-
GASTROPODA(Veliger)	-	3.48(12;3.85)	-	-		1(2;0.71)

Table II-B continued

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
VELUTINIDAE(Veliger)	-	0(1;.)	-	-	-	-
THECOSOMATA(Veliger)	-	0.02(3;0.01)	0.01(4;0.01)	1.96(4;0.9)	0.35(1;.)	-
THECOSOMATA	-	-	-	2.63(1;.)	0.96(1;.)	-
LIMACINA(Veliger)	-	0.31(1;.)	-	0.43(1;.)	0.06(1;.)	-
LIMACINA	-	-	-	0.3(2;0.19)	0.19(1;.)	-
CRESEIS	-	-	-	-	-	1.74(2;1.3)
BIVALVIA(Veliger)	0.23(1;.)	0.01(4;0)	0.01(1;.)	1.37(3;0.91)	-	-
LOLIGINIDAE(Larva)	0(6;0)	0.01(9;0.01)	0(3;0)	0.01(2;0.01)	0.01(5;0)	0(1;.)
LOLIGINIDAE(Juvenile)	-	0(1;.)	-	-	-	-
LOLIGINIDAE	-	0.01(1;.)	-	-	-	-
LOLIGO(Larva)	-	-	-	-	-	-
LOLLIGUNCULA BREVIS(Larva)	0.01(1;.)	-	0.01(1;.)	-	0.01(2;0)	-
ONYCHOTEUTHIS(Larva)	-	-	-	-	-	-
ARACHNIDA	-	-	-	-	-	-
PYCNOGONIDA	-	-	-	-	-	0(1;.)
CRUSTACEA(Nauplius)	7.44(2;10.11)	0.1(1;.)	-	63.8(5;48.8)	-	-
CLADOCERA	-	0.47(1;.)	-	2.56(1;.)	276.8(5;611.6)	59.4(1;.)
PENILIA AVIROSTRIS	-	-	-	-	4.62(2;4.54)	-
EVADNE TERGESTINA	-	-	-	1.54(2;1.54)	1.83(3;2.3)	-
PODON POLYPHEMOIDES	-	-	0(1;.)	0.17(1;.)	0.04(1;.)	-
OSTRACODA	0.91(4;0.76)	0.11(6;0.11)	0.08(7;0.1)	1.53(6;2.59)	22.62(5;48.68)	-
COPEPODA(Nauplius)	0.56(1;.)	8.51(9;23.34)	0.83(3;1.43)	19.92(6;43.9)	1302(9;3892)	0.79(1;.)
COPEPODA	211.9(1;.)	-	-	485.7(5;398.4)	4.53(1;.)	74.5(1;.)
COPEPODA(Copepodid)	3.34(3;4.19)	1.01(10;0.66)	26.52(3;23.01)	0.84(3;0.43)	20.29(6;17.45)	4.63(3;5.56)
CALANOIDA(Juvenile)	-	-	-	-	-	-
CALANOIDA	1.18(5;1.25)	1.03(11;1.88)	0.63(4;0.58)	16.69(6;26.52)	56.2(4;108.8)	22.05(5;37.33)
CALANOIDA(Copepodid)	26.03(1;.)	-	-	1.02(1;.)	-	-
CALANUS TENUICORNIS	1.74(1;.)	2.81(2;2.54)	-	-	0.29(1;.)	-
CALANUS MINOR	9.95(7;10.22)	9.06(8;10.02)	0.4(7;0.58)	0.74(4;0.31)	0.29(1;.)	1.28(1;.)
CALANUS MINOR(Copepodid)	-	0.7(3;1)	0.02(2;0)	-	-	-
UNDINULA	0.28(1;.)	-	-	-	-	-
UNDINULA VULGARIS	5.8(13;5.83)	7.22(15;16.56)	3.67(17;8.73)	3.7(8;4.78)	3.43(12;5.24)	5.74(11;6.3)
UNDINULA VULGARIS(Copepodid)	0.52(2;0.52)	0.12(2;0.12)	0.03(2;0.02)	1.84(4;0.41)	-	-
NEOCALANUS GRACILIS	0.27(1;.)	6.41(1;.)	-	-	-	-
EUCALANUS	1.25(4;0.83)	3.89(10;6.52)	8.18(6;19.31)	0.76(3;0.48)	9.85(8;11.99)	5.94(4;4.08)
EUCALANUS ATTENUATUS	1.07(6;0.56)	18.6(4;30.64)	0.56(4;0.86)	0.68(3;0.92)	0.24(1;.)	-
EUCALANUS ATTENUATUS(Copepodid)	-	0.29(3;0.29)	-	0.47(2;0.27)	-	-
EUCALANUS ELONGATUS	11.57(4;8.46)	4.47(5;3.44)	0.88(4;0.45)	-	0.32(2;0.04)	-
EUCALANUS PILEATUS	2.86(8;3.44)	25.67(8;47.92)	0.3(9;0.25)	37.13(8;49.62)	74.6(11;129.2)	10(7;14.33)
EUCALANUS PILEATUS(Copepodid)	0.51(2;0.53)	0.71(4;0.8)	0.12(2;0.12)	3.86(4;4.36)	31(7;66.35)	-

Table II-B continued

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
VELUTINIDAE(Veliger)	-	-	-	-	-	-
THECOSOMATA(Veliger)	-	40.79(5;67.09)	-	-	-	-
THECOSOMATA	-	0.11(1;.)	-	-	12.99(5;12)	0.01(2;0.01)
LIMACINA(Veliger)	-	-	-	-	-	-
LIMACINA	-	0.17(1;.)	-	3.16(1;.)	1.63(2;0.28)	-
CRESEIS	-	-	-	-	-	-
BIVALVIA(Veliger)	-	0.55(2;0.53)	-	1.32(1;.)	3.3(1;.)	-
LOLIGINIDAE(Larva)	0.09(4;0.18)	0(1;.)	0.01(2;0.01)	0.01(4;0)	0.02(9;0.02)	0.01(4;0)
LOLIGINIDAE(Juvenile)	-	-	-	-	-	-
LOLIGINIDAE	-	-	-	-	-	-
LOLIGO(Larva)	0(1;.)	-	-	-	-	-
LOLLIGUNCULA BREVIS(Larva)	-	-	-	-	-	-
ONYCHOTEUTHIS(Larva)	-	-	-	-	0(1;.)	-
ARACHNIDA	-	-	-	-	3.05(1;.)	-
PYCNOGONIDA	-	-	-	-	-	-
CRUSTACEA(Nauplius)	-	-	-	-	-	-
CLADOCERA	0.26(1;.)	8.55(5;10.63)	-	4.52(4;2.38)	1.14(4;1.68)	8.08(2;3.4)
PENILIA AVIROSTRIS	-	-	-	-	-	-
EVADNE TERGESTINA	-	18.57(14;22.03)	8.52(3;1.13)	2.42(3;1.4)	-	-
PODON POLYPHEMOIDES	-	-	-	-	-	-
OSTRACODA	-	21.99(3;36.41)	-	3.39(3;1.76)	3.06(10;3.21)	2.13(2;1.22)
COPEPODA(Nauplius)	-	3687(4;7368)	-	5.64(2;1.07)	1.47(4;1.38)	8.51(3;10.33)
COPEPODA	-	-	-	-	-	3.81(1;.)
COPEPODA(Copepodid)	1.38(2;1.2)	1.31(5;1.29)	5.2(5;5.47)	12.53(6;22.4)	12.97(12;18.53)	9.3(4;8.44)
CALANOIDA(Juvenile)	-	-	-	-	-	0.73(1;.)
CALANOIDA	7.01(1;.)	214.3(11;399.1)	10.5(1;.)	77.3(4;138.2)	2.85(5;2.36)	13.14(6;18.39)
CALANOIDA(Copepodid)	-	-	-	-	2.86(3;2.81)	-
CALANUS TENUICORNIS	-	-	-	-	-	-
CALANUS MINOR	-	-	-	1.98(1;.)	2.58(4;2.65)	11.06(9;18.42)
CALANUS MINOR(Copepodid)	-	-	-	-	-	-
UNDINULA	-	-	-	-	1.05(1;.)	-
UNDINULA VULGARIS	5.98(4;4.86)	2.78(6;3.61)	18.54(8;15.54)	24.8(11;43.12)	30.73(19;47.22)	6(17;6.99)
UNDINULA VULGARIS(Copepodid)	-	-	-	-	-	-
NEOCALANUS GRACILIS	-	-	-	-	-	1.63(2;0.49)
EUCALANUS	2.97(1;.)	5.85(11;3.21)	1.33(3;1.71)	94.5(4;105.9)	85.7(15;108.8)	8.64(4;15.23)
EUCALANUS ATTENUATUS	-	-	-	-	2.03(3;1.85)	0.89(2;0.73)
EUCALANUS ATTENUATUS(Copepodid)	-	-	-	-	-	-
EUCALANUS ELONGATUS	-	-	-	-	-	1(2;0.39)
EUCALANUS PILEATUS	88.3(8;163.4)	13.08(15;26.55)	20.17(7;27.59)	83.2(7;95.8)	67.1(6;69.8)	5.95(7;10.18)
EUCALANUS PILEATUS(Copepodid)	-	2.13(2;1.36)	-	-	-	-

Table II-B continued

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
RHINCALANUS CORNUTUS	3.5(6;2.84)	17.84(11;35.58)	4.77(12;13.98)	1.19(9;1.87)	2.46(4;3.5)	-
RHINCALANUS CORNUTUS(Copepodid)	-	0.36(1;.)	0.07(1;.)	2.42(4;3.19)	0.7(1;.)	-
RHINCALANUS NASUTUS	5.22(5;4.37)	7.6(4;4.65)	0.38(2;0.12)	-	-	0.58(1;.)
PARACALANUS	2.8(6;2.18)	1.37(4;1.64)	2.4(5;2.46)	1.22(4;0.89)	25.33(2;34.7)	-
PARACALANUS(Copepodid)	4.44(1;.)	-	-	-	-	-
PARACALANUS PARVUS	16.15(7;17.23)	10.26(9;10.68)	1.03(8;1.71)	4.71(3;0.77)	3.62(6;3.57)	2.22(3;1.63)
PARACALANUS PARVUS(Copepodid)	-	0.08(1;.)	-	3.46(1;.)	-	-
PARACALANUS CRASSIROSTRIS	1.47(2;0.85)	1.71(2;2.12)	-	-	3.15(2;3.08)	-
PARACALANUS CRASSIROSTRIS(Copepodid)	-	0.04(1;.)	-	-	-	-
PARACALANUS QUASIMODO	2.99(2;1.92)	-	-	-	-	1.28(1;.)
CALOCALANUS PAVO	0.95(3;0.1)	0.92(1;.)	0.93(3;0.79)	3.71(1;.)	1.08(3;0.92)	-
ACROCALANUS	1.42(2;0.55)	4.07(4;2.88)	0.16(1;.)	1.8(2;2.07)	-	0.26(1;.)
ACROCALANUS LONGICORNIS	1.45(3;0.56)	0.77(1;.)	0.52(2;0.09)	2.3(3;1.06)	2.67(3;3.29)	2.9(1;.)
ISCHNOCALANUS PLUMULOSUS	-	-	-	-	-	1.26(1;.)
CLAUSOCALANUS ARCUICORNIS	1.44(5;0.89)	4.41(5;6.62)	0.28(2;0.27)	1.25(2;1.12)	0.29(1;.)	0.18(1;.)
CLAUSOCALANUS FURCATUS	9.95(7;9.14)	24.78(3;39.66)	1.56(5;2.52)	3.07(1;.)	0.46(2;0.23)	1.28(1;.)
EUCHIRELLA(Copepodid)	-	-	-	-	0.02(1;.)	-
EUCHIRELLA ROSTRATA	-	9.37(3;14.11)	0.05(1;.)	-	-	-
EUCHIRELLA ROSTRATA(Copepodid)	-	-	0(1;.)	-	-	-
EUCHAETA	-	-	-	-	-	1.08(1;.)
EUCHAETA MARINA	4.69(11;4.85)	5.23(18;8.74)	1.51(13;2.27)	0.5(6;0.39)	1.28(6;1.85)	0.2(1;.)
EUCHAETA MARINA(Copepodid)	0.13(1;.)	2.09(4;1.78)	0.28(3;0.46)	0.24(2;0.13)	-	-
VALDIVIELLA	1.03(1;.)	0.77(1;.)	-	-	-	-
SCOLECITHRIX DANAE	0.53(1;.)	-	0.07(2;0.03)	-	0.06(1;.)	-
SCOLECITHRIX DANAE(Copepodid)	-	-	0.02(1;.)	-	-	-
CENTROPAGES	-	-	0.08(1;.)	0.27(2;0.24)	1.51(1;.)	11.56(2;4.64)
CENTROPAGES FURCATUS	7.01(10;12.58)	6.74(11;15.92)	2.5(13;7.22)	13.7(12;20.78)	72.6(15;79.8)	73.5(15;82.5)
CENTROPAGES FURCATUS(Copepodid)	0.92(2;1.21)	1.9(2;2.3)	0.02(2;0)	4.91(3;4.44)	-	8.93(2;11.49)
CENTROPAGES HAMATUS	8.87(13;23.48)	8.38(14;8.14)	2.71(11;4.06)	-	-	-
CENTROPAGES HAMATUS(Copepodid)	0.94(3;0.81)	1.85(4;1.54)	0.22(2;0.16)	-	-	-
CENTROPAGES VIOLACEUS	0.55(2;0.73)	0.36(3;0.29)	0.19(2;0.15)	0.47(1;.)	0.03(1;.)	-
CENTROPAGES VIOLACEUS(Copepodid)	-	0.65(2;0.54)	-	-	-	-
CENTROPAGES VELIFICATUS	-	-	-	-	47.94(7;44.65)	-
CENTROPAGES VELIFICATUS(Copepodid)	-	0.62(1;.)	-	-	12.29(7;19.25)	-
PSEUDODIAPTOMUS CORONATUS	-	-	-	-	-	-
EURYTEMORA HIRUNDOIDES	-	-	-	0.06(1;.)	-	-
TEMORA	-	-	-	0.46(1;.)	-	-
TEMORA STYLIFERA	6.4(10;9.9)	6.55(18;12.93)	3.13(19;5.94)	7.12(12;6.37)	8.03(18;8.51)	37.35(15;92.72)
TEMORA STYLIFERA(Copepodid)	1.05(2;1.03)	1.11(3;1.72)	0.01(1;.)	0.33(1;.)	3.91(1;.)	0.6(1;.)
TEMORA TURBINATA	34.09(13;58.7)	18.09(15;38.29)	25.94(18;58.16)	10.77(11;13.95)	166.7(14;325.9)	138(14;164.4)

Table II-B continued

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
RHINCALANUS CORNUTUS	-	-	-	-	2.52(4;1.58)	2.04(5;1.16)
RHINCALANUS CORNUTUS(Copepodid)	-	-	-	-	-	-
RHINCALANUS NASUTUS	-	-	-	-	-	1.56(1;.)
PARACALANUS	-	-	5.22(1;.)	5.28(1;.)	2.87(4;2.2)	0.36(3;0.38)
PARACALANUS(Copepodid)	-	-	-	-	-	-
PARACALANUS PARVUS	0.12(1;.)	1.55(5;1.09)	2.84(4;2.92)	3.85(4;1.87)	76.2(7;97.5)	4.49(6;3.73)
PARACALANUS PARVUS(Copepodid)	-	-	-	-	-	-
PARACALANUS CRASSIROSTRIS	-	2.84(4;2.84)	2.92(1;.)	-	15.86(4;14.65)	-
PARACALANUS CRASSIROSTRIS(Copepodid)	-	-	-	-	-	-
PARACALANUS QUASIMODO	-	-	-	-	-	-
CALOCALANUS PAVO	-	-	2(2;1.3)	-	1.65(2;1.77)	4.55(5;4.16)
ACROCALANUS	0.12(1;.)	4.67(1;.)	5.21(3;3.19)	8.51(3;2.01)	6.33(4;12.18)	1.35(7;0.76)
ACROCALANUS LONGICORNIS	-	0.03(3;0.02)	3.27(5;5.3)	2.66(1;.)	-	0.88(1;.)
ISCHNOCALANUS PLUMULOSUS	-	-	-	-	-	-
CLAUSOCALANUS ARCUICORNIS	-	-	-	-	5.8(1;.)	-
CLAUSOCALANUS FURCATUS	9.32(1;.)	0.61(1;.)	-	-	6.68(5;5.19)	2.85(9;2.34)
EUCHIRELLA(Copepodid)	-	-	-	-	-	-
EUCHIRELLA ROSTRATA	-	-	-	-	-	-
EUCHIRELLA ROSTRATA(Copepodid)	-	-	-	-	-	-
EUCHAETA	-	-	-	282.4(4;323.1)	11.39(2;5.49)	-
EUCHAETA MARINA	-	-	0.74(2;0.44)	5.28(1;.)	3.68(5;2.89)	6.12(11;7.8)
EUCHAETA MARINA(Copepodid)	-	-	-	-	-	-
VALDIVIELLA	-	-	-	-	-	-
SCOLECITHRIX DANAE	-	-	-	-	-	0.89(2;0.74)
SCOLECITHRIX DANAE(Copepodid)	-	-	-	-	-	-
CENTROPAGES	-	-	15.21(2;15.44)	227(4;109.7)	17.24(3;11.5)	4.09(4;2.62)
CENTROPAGES FURCATUS	350.3(9;331.9)	145.2(29;206.5)	144.9(14;157)	293.4(11;416.9)	144(24;181.2)	26.14(15;36.6)
CENTROPAGES FURCATUS(Copepodid)	-	94.6(3;12.3)	-	-	-	-
CENTROPAGES HAMATUS	-	-	-	-	-	3.07(6;4.61)
CENTROPAGES HAMATUS(Copepodid)	-	-	-	-	-	-
CENTROPAGES VIOLACEUS	-	-	-	1.43(1;.)	-	-
CENTROPAGES VIOLACEUS(Copepodid)	-	-	-	-	-	-
CENTROPAGES VELIFICATUS	-	-	-	-	-	-
CENTROPAGES VELIFICATUS(Copepodid)	-	-	-	-	-	-
PSEUDODIAPTOMUS CORONATUS	-	0.17(1;.)	-	-	-	-
EURYTEMORA HIRUNDOIDES	-	-	-	-	-	-
TEMORA	-	-	7.37(2;4.36)	20.13(4;9.74)	94.7(3;88.8)	47(2;58.34)
TEMORA STYLIFERA	31.96(9;37.35)	6.62(20;9.52)	12.61(14;15.18)	109.6(11;175.5)	21.86(22;38.54)	9.26(16;13.21)
TEMORA STYLIFERA(Copepodid)	-	2.23(2;1.22)	-	-	-	-
TEMORA TURBINATA	436.2(9;558.9)	50.8(12;148.2)	175(10;294.8)	359.4(11;610)	691(24;1226)	61(17;90)

Table II-B continued

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
TEMORA TURBINATA(Copepodid)	0.07(1;.)	0.43(3;0.34)	0.02(1;.)	3.24(2;2.14)	0.7(1;.)	-
LUCICUTIA FLAVICORNIS	1.07(1;.)	1.85(3;1.63)	0.51(3;0.13)	-	-	1.26(1;.)
LUCICUTIA MAGNA	-	0.32(2;0.43)	-	-	-	-
LUCICUTIA MAGNA(Copepodid)	-	0.04(1;.)	-	-	-	-
CANDACIIDAE	0.91(1;.)	-	0.29(1;.)	-	-	-
CANDACIA	0.87(1;.)	-	-	-	-	0.37(1;.)
CANDACIA(Copepodid)	-	0.06(3;0.04)	0.01(1;.)	0.87(1;.)	-	-
CANDACIA BIPINNATA	-	12.83(1;.)	0.01(2;0)	0.17(1;.)	-	-
CANDACIA PACHYDACTYLA	0.28(2;0.39)	-	0.04(1;.)	0.45(2;0.02)	-	-
CANDACIA PACHYDACTYLA(Copepodid)	-	0.02(1;.)	-	-	-	-
CANDACIA CURTA	-	0.57(3;0.49)	0.17(3;0.17)	0.66(3;0.51)	-	0.58(1;.)
CANDACIA CURTA(Copepodid)	-	0.01(1;.)	-	-	-	-
CANDACIA LONGIMANA	0.87(1;.)	-	0.09(1;.)	-	-	-
CANDACIA PAENELONGIMANA	0.53(1;.)	3.21(1;.)	-	-	-	-
CANDACIA VARICANS	-	-	0.09(1;.)	-	0.29(1;.)	-
PARACANDACIA BISPINOSA	-	0.01(1;.)	-	-	-	-
PARACANDACIA SIMPLEX	-	0.09(1;.)	-	-	-	-
PONTELLIDAE	1.6(1;.)	-	0.72(2;0.52)	-	-	-
PONTELLIDAE(Copepodid)	-	-	-	-	-	-
LABIDOCERA	2.43(1;.)	-	1.84(1;.)	-	4.53(1;.)	72(2;38.8)
LABIDOCERA(Copepodid)	-	-	-	-	0.73(1;.)	-
LABIDOCERA AESTIVA	11.86(15;27.85)	6.45(21;12.39)	10.83(19;19.16)	76.3(16;110.6)	134.6(19;133.6)	6.73(14;5.39)
LABIDOCERA AESTIVA(Copepodid)	8.65(3;11.76)	7.7(3;10.02)	0.03(3;0.04)	144.8(6;334.4)	17.63(6;16.27)	14.72(3;24.18)
LABIDOCERA ACUTIFRONS	-	-	0.01(1;.)	0.03(1;.)	0.49(1;.)	-
PONTELLA	-	0.55(1;.)	1.84(1;.)	0.13(2;0.12)	0.87(2;0.56)	0.37(1;.)
PONTELLA(Copepodid)	-	-	-	-	-	-
PONTELLA PENNATA	-	-	-	-	0.02(1;.)	-
PONTELLA MEADII	0.99(3;1.04)	-	0.36(1;.)	-	0.08(2;0.03)	-
PONTELLA SECURIFER	-	-	2.54(3;1.46)	-	0.29(1;.)	-
PONTELLA SPINIPES	-	-	-	-	0.03(1;.)	-
PONTELLA ATLANTICA	-	-	-	-	-	-
PONTELLA MIMOCERAMI	-	-	-	-	-	-
PONTELLA MIMOCERAMI(Copepodid)	-	-	-	-	0.31(1;.)	-
PONTELLINA PLUMATA	0.27(1;.)	0.27(3;0.43)	0.02(1;.)	0.45(2;0.02)	0.12(1;.)	-
PONTELLINA PLUMATA(Copepodid)	-	0.04(1;.)	-	-	-	-
ANOMALOCERA(Juvenile)	-	-	-	-	-	-
ANOMALOCERA(Copepodid)	-	-	0.01(1;.)	-	-	-
ANOMALOCERA ORNATA	1.81(1;.)	9.72(9;18.25)	10.69(10;20.02)	4.51(6;9.44)	-	-
ANOMALOCERA ORNATA(Copepodid)	-	-	0.35(3;0.11)	-	-	-
CALANOPIA AMERICANA	0.86(2;0.02)	-	-	-	1.51(1;.)	1.28(1;.)

Table II-B continued

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
TEMORA TURBINATA(Copepodid)	-	1.37(1;.)	-	-	-	-
LUCICUTIA FLAVICORNIS	-	0.16(1;.)	0.94(1;.)	-	-	2.13(3;0.93)
LUCICUTIA MAGNA	-	-	-	-	-	-
LUCICUTIA MAGNA(Copepodid)	-	-	-	-	-	-
CANDACIIDAE	-	-	-	-	-	-
CANDACIA	-	-	-	2.08(1;.)	3.8(3;4.7)	0.03(1;.)
CANDACIA(Copepodid)	-	-	-	-	-	-
CANDACIA BIPINNATA	-	-	-	0.01(1;.)	2.41(3;1.43)	-
CANDACIA PACHYDACTYLA	-	-	-	-	0.43(4;0.53)	4.69(1;.)
CANDACIA PACHYDACTYLA(Copepodid)	-	-	-	-	-	-
CANDACIA CURTA	-	-	-	-	-	1.43(2;0.77)
CANDACIA CURTA(Copepodid)	-	-	-	-	-	-
CANDACIA LONGIMANA	-	-	-	-	-	2.82(1;.)
CANDACIA PAENELONGIMANA	-	-	-	-	-	1.77(2;0.29)
CANDACIA VARICANS	-	-	-	-	0.79(2;0.01)	3.6(2;3.29)
PARACANDACIA BISPINOSA	-	-	-	-	-	-
PARACANDACIA SIMPLEX	-	-	-	-	-	0.88(1;.)
PONTELLIDAE	-	0.83(4;0.98)	0.55(3;0.49)	-	-	-
PONTELLIDAE(Copepodid)	-	1.15(1;.)	-	-	-	1.41(1;.)
LABIDOCERA	-	0.45(4;0.37)	-	112(4;37.7)	6.48(2;8.11)	28.19(4;44.34)
LABIDOCERA(Copepodid)	-	-	-	-	-	-
LABIDOCERA AESTIVA	44.94(10;50.72)	16.96(28;28.51)	76.4(16;121)	37.73(8;34.1)	13.31(22;11.61)	24.33(17;29.28)
LABIDOCERA AESTIVA(Copepodid)	-	39.86(3;7.4)	-	-	-	-
LABIDOCERA ACUTIFRONS	-	0.12(1;.)	-	-	-	-
PONTELLA	-	0.04(2;0.04)	2.92(1;.)	0.61(1;.)	2.86(1;.)	10.92(3;10.19)
PONTELLA(Copepodid)	-	-	-	-	-	0.75(1;.)
PONTELLA PENNATA	-	0.84(4;0.98)	-	-	-	3.13(1;.)
PONTELLA MEADII	-	0.87(4;0.55)	1.05(1;.)	-	2.31(3;1.43)	0.38(1;.)
PONTELLA SECURIFER	0.26(2;0.2)	-	-	2.66(1;.)	-	-
PONTELLA SPINIPES	-	-	-	-	-	-
PONTELLA ATLANTICA	5.91(2;7.7)	0.72(3;0.78)	2.57(1;.)	-	-	-
PONTELLA MIMOCERAMI	-	-	-	-	0.26(1;.)	-
PONTELLA MIMOCERAMI(Copepodid)	-	-	-	-	-	-
PONTELLINA PLUMATA	-	-	-	-	-	0.4(2;0.04)
PONTELLINA PLUMATA(Copepodid)	-	-	-	-	-	-
ANOMALOCERA(Juvenile)	-	-	-	-	-	0.37(1;.)
ANOMALOCERA(Copepodid)	-	-	-	-	-	1.13(1;.)
ANOMALOCERA ORNATA	-	-	-	-	-	-
NOMALOCERA ORNATA(Copepodid)	-	-	-	-	-	-
CALANOPIA AMERICANA	-	19.14(10;57.29)	0.62(1;.)	3.48(4;2.74)	5.04(5;4.99)	1.91(4;0.67)

Table II-B continued

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
PONTELLOPSIS	-	-	-	0.44(1;.)	-	-
PONTELLOPSIS VILLOSA	-	-	0.01(1;.)	-	0.01(1;.)	-
PONTELLOPSIS REGALIS	0.27(1;.)	-	-	-	-	-
PONTELLOPSIS PERSPICAX	-	-	-	-	-	-
ACARTIA	1.22(1;.)	27.23(1;.)	298.4(3;515.7)	7.03(1;.)	14.55(2;7.69)	2138(2;3023)
ACARTIA DANAE	1.57(2;0.71)	3.3(4;2.6)	-	0.64(2;0.5)	0.29(1;.)	-
ACARTIA TONSA	34.86(14;30.7)	82.4(23;154.6)	35.85(18;55.73)	701(22;1425)	388.8(19;596.5)	25.23(15;44.5)
ACARTIA TONSA(Copepodid)	6.28(3;4.57)	3.71(4;4.66)	0.32(5;0.49)	28.36(4;38.93)	3.72(2;2.04)	7.31(3;11.4)
ACARTIA BERMUDENSIS	-	-	-	-	-	-
HARPACTICOIDA	-	-	-	3.65(2;0.37)	-	2.04(1;.)
HARPACTICIDAE	-	-	-	-	-	8.16(1;.)
CLYTEMNESTRA SCUTELLATA	-	-	-	0.04(1;.)	-	-
EUTERPINA	-	-	-	-	-	-
EUTERPINA ACUTIFRONS	-	-	-	0.43(1;.)	-	-
LAOPHONTIDAE	-	-	-	-	-	-
AEGISTHUS	-	-	-	-	-	1.28(1;.)
MACROSETELLA	-	-	-	-	1.51(1;.)	-
MACROSETELLA GRACILIS	-	0.92(6;1.22)	0.56(3;0.68)	0.18(3;0.22)	-	-
OCULOSETELLA GRACILIS	-	-	-	-	-	-
CYCLOPOIDA	-	-	-	14.58(2;1.48)	2331(2;3296)	3.58(2;3.59)
CONAEA	0.27(1;.)	-	0.72(1;.)	-	-	0.35(1;.)
ONCAEA	-	-	-	-	6.04(1;.)	-
ONCAEA MEDITERRANEA	3.79(9;3.93)	3.54(12;10.02)	2.25(11;3.82)	18.7(10;42.41)	12.39(7;12.48)	1.82(2;1.04)
ONCAEA MEDITERRANEA(Copepodid)	-	0.04(1;.)	0.14(1;.)	0.33(1;.)	-	-
ONCAEA VENUSTA	-	-	-	0.93(1;.)	-	-
CORYCAEUS	9.19(16;15.79)	2.8(15;3.61)	12.05(16;33.84)	8.27(12;16.12)	11.04(18;11.37)	8.4(10;8.6)
CORYCAEUS(Copepodid)	0.48(2;0.58)	-	-	1.73(1;.)	2.81(1;.)	-
CORYCAEUS AMAZONICUS	-	0.12(1;.)	0.02(1;.)	-	-	-
CORYCAEUS LAUTUS	-	-	-	-	2.48(1;.)	-
CORYCAEUS LATUS	-	-	-	-	2.81(1;.)	0.32(1;.)
CORYCAEUS SUBLATUS	-	0.79(4;0.34)	0.04(4;0.03)	-	0.37(1;.)	1.01(2;0.98)
CORYCAEUS SUBLATUS(Copepodid)	-	0.04(1;.)	-	-	0.12(1;.)	-
FARRANULA	-	-	-	-	-	-
FARRANULA GRACILIS	-	0.01(1;.)	-	-	0.36(1;.)	-
ERGASILUS	-	0.01(2;0.01)	-	-	-	-
OITHONA	4.1(7;4.94)	0.47(7;0.73)	0.92(5;1.32)	0.35(3;0.08)	1.15(6;0.33)	-
OITHONA(Copepodid)	-	-	-	0.49(3;0.32)	0.12(1;.)	-
OITHONA COLCARVA	-	-	-	-	-	12.56(3;14.25)
OITHONA COLCARVA(Copepodid)	-	-	-	-	-	0.8(1;.)
SAPPHIRINA	0.12(2;0.13)	0.24(2;0.06)	2.64(1;.)	0.23(3;0.18)	-	-

Table II-B continued

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
PONTELLOPSIS	-	0.16(1;.)	-	-	-	5.93(1;.)
PONTELLOPSIS VILLOSA	-	1(1;.)	0.14(1;.)	-	-	1.98(1;.)
PONTELLOPSIS REGALIS	-	1.15(1;.)	0.09(1;.)	-	-	-
PONTELLOPSIS PERSPICAX	-	-	-	-	1.51(2;0.66)	-
ACARTIA	-	0.54(1;.)	56.7(2;52.9)	4.28(3;2.66)	41.56(3;51.31)	11.4(2;13.43)
ACARTIA DANAE	-	13.49(1;.)	-	-	-	-
ACARTIA TONSA	41.09(8;56.94)	41.76(29;124.72)	22.18(12;27.55)	31.92(9;50.27)	218.6(21;669)	54.3(15;62.6)
ACARTIA TONSA(Copepodid)	-	15.09(1;.)	-	-	-	-
ACARTIA BERMUDENSIS	-	-	-	-	-	0.88(1;.)
HARPACTICOIDA	-	1.56(1;.)	-	-	-	-
HARPACTICIDAE	-	-	-	-	-	-
CLYTEMNESTRA SCUTELLATA	-	-	-	-	-	-
EUTERPINA	-	0.54(1;.)	-	-	-	-
EUTERPINA ACUTIFRONS	-	0.54(1;.)	-	5.28(1;.)	-	-
LAOPHONTIDAE	-	-	0.09(1;.)	-	-	-
AEGISTHUS	-	-	-	-	-	-
MACROSETELLA	-	-	-	-	0.7(1;.)	-
MACROSETELLA GRACILIS	-	-	0.51(1;.)	-	2.28(2;2.49)	1.55(2;0.6)
OCULOSETELLA GRACILIS	-	-	-	0.71(1;.)	-	-
CYCLOPOIDA	-	108.9(4;200.8)	-	-	-	1.15(1;.)
CONAEA	-	-	-	-	-	0.88(1;.)
ONCAEA	-	-	-	-	3.05(1;.)	1.58(1;.)
ONCAEA MEDITERRANEA	1.99(1;.)	-	-	2.19(2;0.66)	4.3(5;3.85)	3.62(8;3.22)
ONCAEA MEDITERRANEA(Copepodid)	-	-	-	-	-	-
ONCAEA VENUSTA	-	-	-	-	-	-
CORYCAEUS	13.71(6;18.47)	3.73(17;5.45)	9.18(11;15.4)	9.19(11;12.09)	7.33(22;7.81)	4.81(19;5.34)
CORYCAEUS(Copepodid)	-	-	-	-	-	-
CORYCAEUS AMAZONICUS	-	-	-	-	-	-
CORYCAEUS LAUTUS	-	-	-	-	-	-
CORYCAEUS LATUS	-	-	-	-	-	-
CORYCAEUS SUBLATUS	-	7.57(3;3.85)	-	-	-	-
CORYCAEUS SUBLATUS(Copepodid)	-	1.37(1;.)	-	-	-	-
FARRANULA	0.35(1;.)	-	-	-	-	1.77(2;0.29)
FARRANULA GRACILIS	-	-	-	-	-	-
ERGASILUS	-	-	-	-	-	-
OITHONA	1(1;.)	3.13(2;3.92)	0.25(2;0.23)	2.55(3;2.16)	6.16(3;6.12)	1.2(6;0.86)
OITHONA(Copepodid)	-	-	-	-	-	-
OITHONA COLCARVA	-	14.65(3;13.38)	-	-	-	-
OITHONA COLCARVA(Copepodid)	-	8.8(2;0.81)	-	-	-	-
SAPPHIRINA	-	-	-	0.61(1;.)	1.03(6;0.81)	1.98(4;1.19)

Table II-B continued

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
SAPPHIRINA NIGROMACULATA	0.6(6;0.62)	1.12(5;1.97)	0.41(7;0.42)	2.25(5;4.55)	0.44(5;0.2)	0.58(1;.)
SAPPHIRINA NIGROMACULATA(Copepodid)	-	-	-	1.73(1;.)	-	-
COPILIA	-	-	-	-	-	-
COPILIA MIRABILIS	-	0.12(5;0.13)	0.14(4;0.15)	0.39(5;0.75)	0.53(3;0.62)	-
COPILIA MIRABILIS(Copepodid)	-	-	-	-	-	-
CALIGOIDA	-	0.01(1;.)	0.02(1;.)	-	-	0.1(1;.)
CALIGUS	-	-	0.02(2;0.01)	-	0.01(2;0)	-
ARGULUS	-	-	-	3.38(1;.)	0(1;.)	-
CIRRIPEDIA(Nauplius)	0.94(4;0.89)	1.18(4;1.5)	0.19(6;0.37)	3.6(5;4.59)	6.92(3;7.88)	0.79(1;.)
CIRRIPEDIA(Cypris)	-	3.48(2;4.7)	0(1;.)	0.38(2;0.08)	1.56(1;.)	0.52(1;.)
MYSIDACEA	-	-	-	-	-	-
MYSIDAE(Mysis)	-	0(2;0)	-	-	0.35(1;.)	-
MYSIDOPSIS(Juvenile)	-	-	0.01(1;.)	-	-	-
PROMYSIS ATLANTICA(Juvenile)	-	0(1;.)	-	-	-	-
SIRIELLA THOMPSONI	-	-	-	-	0.01(2;0.01)	-
BRASILOMYSIS CASTROI(Juvenile)	-	-	0(1;.)	-	-	-
OXYUROSTYLIS SMITHI	-	0.03(1;.)	-	-	-	-
TANAIDACEA	0(1;.)	-	-	-	-	-
ISOPODA(Larva)	-	-	-	-	1.96(1;.)	-
ISOPODA(Juvenile)	-	0.01(1;.)	-	-	-	-
ISOPODA	0(2;0)	0(1;.)	-	-	-	0.01(1;.)
SPHAEROMA QUADRIDENTATUM	-	-	0(1;.)	-	-	-
AEGATHOA OCULATA(Juvenile)	-	-	0(1;.)	-	-	-
AEGATHOA MEDIALIS	-	-	-	-	-	-
VALVIFERA	-	0.01(1;.)	-	-	-	-
AMPHIPODA	-	-	-	-	-	-
GAMMARIDEA(Juvenile)	-	-	-	0.12(1;.)	-	-
GAMMARIDEA	-	0.01(1;.)	-	-	-	0(1;.)
COROPHIIDAE	-	0.01(1;.)	-	-	-	-
COROPHIUM	-	0.01(1;.)	0(1;.)	0.06(2;0.01)	-	-
HYPERIIDEA(Juvenile)	-	0.01(1;.)	-	0.76(1;.)	8.98(2;12.2)	-
HYPERIIDEA	0.19(6;0.17)	0.34(9;0.5)	1.87(9;3.92)	0.75(6;1.34)	3(9;5.44)	1.79(2;0.95)
HYPERIIDAE(Juvenile)	-	-	0(1;.)	-	-	-
HYPERIIDAE	-	-	-	-	-	0.05(1;.)
HYPERIETTA VOSSELERI	-	-	-	0.03(1;.)	-	-
LESTRIGONUS	-	-	0(1;.)	-	0.18(2;0.25)	-
LESTRIGONUS BENGALENSIS	-	-	-	0.1(1;.)	-	0.05(1;.)
PHRONIMA	-	-	-	0.06(1;.)	-	-
PHRONIMA PACIFICA	-	-	0.01(1;.)	-	-	-
PHRONIMELLA ELONGATA	-	-	0(1;.)	0.18(2;0.15)	0.31(1;.)	-

Table II-B continued

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
SAPPHIRINA NIGROMACULATA	-	0.43(5;0.84)	1.58(2;0.75)	3.62(3;1.57)	2.98(5;2.11)	1.43(4;0.46)
SAPPHIRINA NIGROMACULATA(Copepodid)	-	-	-	-	-	-
COPILIA	-	-	-	3.16(1;.)	-	-
COPILIA MIRABILIS	-	-	-	-	2.7(3;2.46)	17.79(1;.)
COPILIA MIRABILIS(Copepodid)	-	0.17(1;.)	-	-	-	-
CALIGOIDA	-	-	-	-	-	0.01(1;.)
CALIGUS	-	-	-	-	-	0.01(1;.)
ARGULUS	-	-	-	-	-	-
CIRRIPEDIA(Nauplius)	-	2.22(3;1.65)	-	1.6(1;.)	-	0.5(1;.)
CIRRIPEDIA(Cypris)	-	1.16(2;0.3)	-	-	-	-
MYSIDACEA	-	-	0.03(1;.)	-	3.05(1;.)	0(1;.)
MYSIDAE(Mysis)	-	-	-	-	-	-
MYSIDOPSIS(Juvenile)	-	-	-	-	-	-
PROMYSIS ATLANTICA(Juvenile)	-	-	-	-	-	-
SIRIELLA THOMPSONI	-	-	-	0.01(1;.)	-	-
BRASILOMYSIS CASTROI(Juvenile)	-	-	-	-	-	-
OXYUROSTYLIS SMITHI	-	-	-	-	-	-
TANAIDACEA	-	-	-	-	-	-
ISOPODA(Larva)	-	-	-	-	-	-
ISOPODA(Juvenile)	-	-	-	-	-	-
ISOPODA	-	-	-	-	-	0.02(1;.)
SPHAEROMA QUADRIDENTATUM	-	-	-	-	-	-
AEGATHOA OCULATA(Juvenile)	-	-	-	-	-	-
AEGATHOA MEDIALIS	-	-	-	0.01(1;.)	-	-
VALVIFERA	-	-	-	-	-	-
AMPHIPODA	-	-	-	-	-	0.06(4;0.07)
GAMMARIDEA(Juvenile)	-	-	-	-	-	-
GAMMARIDEA	-	-	-	-	-	0(1;.)
COROPHIIDAE	-	-	-	-	-	-
COROPHIUM	-	0.01(1;.)	-	-	-	-
HYPERIIDEA(Juvenile)	-	-	-	-	-	-
HYPERIIDEA	-	2.68(1;.)	0.13(1;.)	0.89(4;1.69)	4.49(9;4.42)	1.27(7;1.77)
HYPERIIDAE(Juvenile)	-	-	-	-	-	-
HYPERIIDAE	-	-	-	-	-	-
HYPERIETTA VOSSELERI	-	-	-	-	-	-
LESTRIGONUS	-	-	-	-	-	-
LESTRIGONUS BENGALENSIS	-	1.57(3;1.34)	-	-	-	-
PHRONIMA	-	-	-	-	-	-
PHRONIMA PACIFICA	-	-	-	-	-	-
PHRONIMELLA ELONGATA	-	-	-	-	-	-

Table II-B continued

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
PHROSINA SEMILUNATA	-	-	-	0.06(1;.)	-	-
PRIMNO	-	-	-	0.28(1;.)	-	-
LYCAEOPSIS	-	-	0.01(2;0.01)	-	-	-
BRACHYSCELUS RAPAX	-	-	0.02(1;.)	-	-	-
OXYCEPHALUS PISCATORIS	-	-	0(1;.)	0.06(1;.)	-	-
RHABDOSOMA WHITEI	-	-	0(2;0)	0.03(1;.)	-	-
SIMORHYNCHOTUS ANTENNARIUS	-	-	0.04(1;.)	-	0.79(2;0.42)	0.42(2;0.31)
EUPHAUSIACEA(Larva)	0.5(3;0.36)	-	-	0.46(1;.)	-	-
EUPHAUSIACEA(Juvenile)	0.03(1;.)	0.02(2;0.01)	-	0.1(2;0.13)	-	-
EUPHAUSIACEA	0.08(3;0.12)	0.31(5;0.66)	-	0.38(3;0.45)	0.03(1;.)	-
EUPHAUSIACEA(Postlarva)	-	0.02(3;0.02)	0.02(1;.)	-	-	-
EUPHAUSIACEA(Protozoea)	-	0.12(4;0.22)	-	0.06(1;.)	-	-
EUPHAUSIACEA(Furcila)	-	0.9(4;1.69)	0.01(1;.)	0.38(4;0.28)	-	-
EUPHAUSIIDAE(Juvenile)	-	-	-	-	1.34(1;.)	-
EUPHAUSIIDAE(Furcila)	-	-	0(1;.)	-	0.12(1;.)	-
DECAPODA(Zoea)	-	-	-	2.26(1;.)	-	-
DECAPODA(Larva)	0.2(2;0.04)	-	-	-	-	41.4(1;.)
DECAPODA(Postlarva)	-	-	-	-	-	-
DECAPODA(Protozoea)	-	0.02(1;.)	3.04(3;4.25)	7.6(3;10.94)	10.48(5;7.24)	0.14(1;.)
PENAEIDAE(Larva)	-	-	-	0.1(1;.)	-	-
PENAEIDAE(Postlarva)	-	0.86(1;.)	-	-	-	-
PENAEIDAE(Mysis)	-	-	-	-	0.03(1;.)	0.03(1;.)
PENAEUS(Larva)	-	-	-	1.33(2;1.84)	-	-
PENAEUS(Postlarva)	0.01(5;0.01)	0.11(3;0.16)	0(2;0)	-	-	-
PENAEUS(Protozoea)	-	0.04(2;0.06)	-	-	-	-
PENAEUS(Mysis)	-	-	-	-	0.1(1;.)	-
PENAEUS AZTECUS(Larva)	0.38(1;.)	-	-	-	-	-
PENAEUS AZTECUS(Postlarva)	0.08(55;0.14)	0.7(57;2.83)	0.21(40;0.64)	0.03(40;0.04)	0.05(18;0.08)	0.04(11;0.06)
PENAEUS AZTECUS(Mysis)	-	-	-	-	-	-
PENAEUS DUORARUM(Postlarva)	0.01(2;0)	0.01(1;.)	0.02(1;.)	0.01(1;.)	0.02(4;0.02)	0.02(7;0.02)
PENAEUS SETIFERUS(Larva)	0.01(1;.)	-	-	-	-	-
PENAEUS SETIFERUS(Postlarva)	0.02(9;0.03)	0.01(9;0.01)	0.01(10;0.01)	0.04(5;0.05)	0.01(11;0.01)	0.03(14;0.06)
PENAEUS SETIFERUS(Mysis)	-	-	-	-	-	0.01(1;.)
TRACHYPENAEUS(Protozoea)	-	0(1;.)	-	0.06(1;.)	-	-
TRACHYPENAEUS(Mysis)	-	-	-	-	0.33(2;0.03)	-
TRACHYPENAEUS CONSTRICTUS(Mysis)	-	-	-	-	-	-
XIPHOPENAEUS KROYERI(Postlarva)	-	-	-	-	0.02(1;.)	-
XIPHOPENAEUS KROYERI(Mysis)	-	-	-	-	0.54(1;.)	-
SERGESTIDAE(Zoea)	-	0(1;.)	-	-	-	-
SERGESTIDAE(Larva)	0.02(2;0.03)	0.02(3;0.02)	-	-	-	-

Table II-B continued

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
PHROSINA SEMILUNATA	-	-	-	-	-	-
PRIMNO	-	-	-	-	-	-
LYCAEOPSIS	-	-	-	-	-	-
BRACHYSCELUS RAPAX	-	-	-	-	-	-
OXYCEPHALUS PISCATORIS	-	-	-	-	-	-
RHABDOSOMA WHITEI	-	-	-	-	-	-
SIMORHYNCHOTUS ANTENNARIUS	-	-	-	-	-	-
EUPHAUSIACEA(Larva)	-	-	-	-	0.85(1;.)	-
EUPHAUSIACEA(Juvenile)	-	-	-	-	-	-
EUPHAUSIACEA	-	0.03(2;0)	0.06(1;.)	0.08(2;0.08)	-	0.31(2;0.44)
EUPHAUSIACEA(Postlarva)	-	-	-	-	-	-
EUPHAUSIACEA(Protozoea)	-	-	-	-	-	-
EUPHAUSIACEA(Furcila)	-	-	-	-	-	-
EUPHAUSIIDAE(Juvenile)	-	-	-	-	-	-
EUPHAUSIIDAE(Furcila)	-	-	-	-	-	-
DECAPODA(Zoea)	-	0.01(1;.)	-	-	-	-
DECAPODA(Larva)	-	-	10.45(1;.)	3.27(3;5.62)	3.02(4;2.43)	1.63(4;1.56)
DECAPODA(Postlarva)	-	-	-	-	0.01(1;.)	-
DECAPODA(Protozoea)	2.37(2;1.26)	1.31(2;0.5)	0.18(1;.)	4.05(3;2.47)	6.19(7;5.51)	1.5(1;.)
PENAEIDAE(Larva)	-	-	0.05(1;.)	-	-	-
PENAEIDAE(Postlarva)	0.13(1;.)	-	-	-	-	-
PENAEIDAE(Mysis)	0.21(1;.)	0.15(1;.)	0.01(1;.)	0.33(2;0.4)	3.22(4;3.37)	2.6(2;0.56)
PENAEUS(Larva)	-	-	-	-	-	-
PENAEUS(Postlarva)	0.02(1;.)	-	0.06(2;0.08)	-	0.01(2;0.01)	0.01(3;0.01)
PENAEUS(Protozoea)	-	0.85(3;0.44)	-	-	-	-
PENAEUS(Mysis)	0.04(4;0.06)	-	0.05(1;.)	-	-	-
PENAEUS AZTECUS(Larva)	-	-	0.25(1;.)	-	-	-
PENAEUS AZTECUS(Postlarva)	0.02(24;0.02)	0.03(11;0.03)	0.06(34;0.13)	0.01(15;0.02)	0.04(47;0.06)	0.03(26;0.05)
PENAEUS AZTECUS(Mysis)	-	0.16(1;.)	-	-	-	-
PENAEUS DUORARUM(Postlarva)	0.02(8;0.02)	0.03(24;0.05)	0.03(22;0.03)	0.01(5;0.01)	0.04(9;0.07)	0(1;.)
PENAEUS SETIFERUS(Larva)	-	-	-	-	-	-
PENAEUS SETIFERUS(Postlarva)	0.03(25;0.03)	0.04(32;0.08)	0.04(40;0.08)	0.02(20;0.02)	0.03(22;0.04)	0.01(8;0)
PENAEUS SETIFERUS(Mysis)	0.07(2;0.08)	0.02(1;.)	-	-	-	-
TRACHYPENAEUS(Protozoea)	-	-	-	-	-	-
TRACHYPENAEUS(Mysis)	-	-	-	-	-	-
TRACHYPENAEUS CONSTRICTUS(Mysis)	-	0.09(2;0.05)	0.01(1;.)	4.24(3;6.61)	0.02(1;.)	-
XIPHOPENAEUS KROYERI(Postlarva)	-	-	-	-	-	-
XIPHOPENAEUS KROYERI(Mysis)	-	1.68(3;2.87)	-	-	-	8.5(1;.)
SERGESTIDAE(Zoea)	-	-	-	-	-	-
SERGESTIDAE(Larva)	-	0.01(2;0)	0.08(1;.)	1.4(2;1.75)	-	0.01(2;0.01)

Table II-B continued

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
SERGESTIDAE(Postlarva)	-	-	-	-	-	-
SERGESTIDAE(Protozoea)	-	1.22(4;1.85)	0.01(4;0)	-	-	-
SERGESTIDAE(Mysis)	-	2(4;2.94)	-	0.19(2;0.03)	-	-
ACETES(Larva)	-	-	-	-	2.81(1;.)	-
ACETES(Postlarva)	-	-	-	-	0.31(1;.)	-
ACETES(Protozoea)	-	-	-	-	8.44(1;.)	-
ACETES(Mysis)	-	-	-	-	0.31(1;.)	-
ACETES AMERICANUS(Larva)	-	-	-	-	0.27(1;.)	-
ACETES AMERICANUS(Juvenile)	-	-	-	5.19(1;.)	0.49(1;.)	2.55(1;.)
ACETES AMERICANUS	0(1;.)	0.04(1;.)	-	-	0.75(6;1.18)	-
ACETES AMERICANUS(Postlarva)	-	-	-	-	23.48(1;.)	0.2(1;.)
ACETES AMERICANUS(Protozoea)	-	-	0.01(2;0)	9.34(5;14.2)	32.64(4;56.68)	7.64(1;.)
ACETES AMERICANUS(Mysis)	-	-	-	0.99(2;1.04)	1.5(3;0.4)	-
LUCIFER(Protozoea)	-	-	0.23(2;0.26)	38(5;14.81)	23.91(6;38.91)	-
LUCIFER(Mysis)	-	-	-	-	-	5.12(1;.)
LUCIFER FAXONI(Larva)	-	-	0.07(2;0.02)	0.85(1;.)	2.78(3;1.93)	0.21(3;0.28)
LUCIFER FAXONI(Juvenile)	-	0.04(2;0.03)	0.1(3;0.15)	4.71(4;6.11)	18.6(6;27.09)	2.48(3;1.98)
LUCIFER FAXONI	0.02(3;0.02)	0.39(9;0.5)	0.04(5;0.06)	3.26(6;4.12)	2.12(9;2.25)	17.57(3;13.74)
LUCIFER FAXONI(Postlarva)	-	-	-	-	-	-
LUCIFER FAXONI(Protozoea)	-	-	10.13(1;.)	-	-	-
LUCIFER FAXONI(Mysis)	-	-	0.21(5;0.43)	13.92(5;10.52)	41.24(6;87.39)	2.65(2;3.46)
LUCIFER TYPUS(Juvenile)	-	0.01(2;0)	-	-	-	-
LUCIFER TYPUS	-	0.04(1;.)	0(1;.)	-	0.08(1;.)	-
SERGESTES(Zoea)	-	0.03(4;0.03)	0.01(1;.)	-	-	-
SERGESTES(Larva)	-	-	-	-	0.02(1;.)	-
SERGESTES(Juvenile)	-	-	-	0.1(1;.)	0.08(1;.)	-
SERGESTES	-	-	-	-	0.35(1;.)	-
SERGESTES(Postlarva)	-	0.01(1;.)	0(1;.)	-	0.03(1;.)	-
SERGESTES(Protozoea)	-	0.09(4;0.16)	0(3;0)	0.06(1;.)	6.22(2;8.75)	23.87(1;.)
SERGESTES(Mysis)	-	-	-	-	0.31(1;.)	-
SOLENOCERA(Zoea)	-	-	-	-	-	-
SOLENOCERA(Postlarva)	-	-	-	-	-	-
SOLENOCERA(Mysis)	-	0.02(1;.)	-	-	0.04(1;.)	-
GENNADAS(Mysis)	-	-	-	-	0.21(1;.)	-
CARIDEA(Zoea)	-	-	0.08(1;.)	-	-	2.05(1;.)
CARIDEA(Larva)	-	0.06(3;0.04)	-	1.8(2;2.42)	1.38(5;1.48)	0.1(1;.)
CARIDEA(Postlarva)	-	-	-	-	-	-
LEPTOCHELA SERRATORBITA(Postlarva)	-	-	-	-	-	-
LEANDER(Zoea)	-	-	-	-	3.91(1;.)	-
LEANDER TENUICORNIS(Zoea)	-	-	-	-	0.68(4;0.58)	0.68(2;0.39)

Table II-B continued

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
SERGESTIDAE(Postlarva)	-	-	-	-	0.04(1;.)	-
SERGESTIDAE(Protozoea)	-	-)	-	-	-	-
SERGESTIDAE(Mysis)	-	-	-	-	-	-
ACETES(Larva)	-	-	-	-	-	-
ACETES(Postlarva)	-	-	-	-	-	-
ACETES(Protozoea)	-	-	-	-	-	-
ACETES(Mysis)	-	-	-	-	-	-
ACETES AMERICANUS(Larva)	0.21(2;0.29)	8.83(3;14.86)	0.1(1;.)	-	1.92(3;2.74)	2.95(4;1.39)
ACETES AMERICANUS(Juvenile)	-	-	0.64(1;.)	-	-	-
ACETES AMERICANUS	-	-	0.05(2;0.04)	0.06(1;.)	-	-
ACETES AMERICANUS(Postlarva)	-	26.27(2;13.93)	-	-	-	-
ACETES AMERICANUS(Protozoea)	-	4.99(2;1.23)	-	-	-	-
ACETES AMERICANUS(Mysis)	-	31.8(3;29.49)	-	-	-	-
LUCIFER(Protozoea)	-	-	-	-	-	-
LUCIFER(Mysis)	-	-	-	-	-	-
LUCIFER FAXONI(Larva)	3.71(2;3.16)	1.34(4;1.5)	-	11.32(2;12)	9.08(12;9.83)	3.88(7;5.58)
LUCIFER FAXONI(Juvenile)	-	-	-	-	-	-
LUCIFER FAXONI	-	-	0.3(1;.)	2.61(4;1.92)	3.81(2;3.26)	0.5(1;.)
LUCIFER FAXONI(Postlarva)	-	8.66(1;.)	-	-	-	-
LUCIFER FAXONI(Protozoea)	-	-	-	-	-	-
LUCIFER FAXONI(Mysis)	-	1.03(1;.)	-	-	-	-
LUCIFER TYPUS(Juvenile)	-	-	-	-	-	-
LUCIFER TYPUS	-	-	-	-	-	-
SERGESTES(Zoea)	-	-	-	-	-	-
SERGESTES(Larva)	-	-	-	-	-	-
SERGESTES(Juvenile)	-	-	-	-	-	-
SERGESTES	-	-	-	-	-	-
SERGESTES(Postlarva)	-	-	-	-	-	-
SERGESTES(Protozoea)	-	-	-	-	-	-
SERGESTES(Mysis)	-	-	-	-	-	-
SOLENOCERA(Zoea)	-	-	-	-	-	0.02(1;.)
SOLENOCERA(Postlarva)	-	-	-	-	-	0.01(1;.)
SOLENOCERA(Mysis)	-	0.01(1;.)	0.01(1;.)	0(1;.)	0.03(2;0.03)	-
GENNADAS(Mysis)	-	-	-	-	-	-
CARIDEA(Zoea)	-	1.17(1;.)	-	-	-	-
CARIDEA(Larva)	0.42(2;0.45)	0.4(4;0.11)	0.16(4;0.19)	1.44(5;2.89)	4.55(5;6.01)	0.01(3;0.01)
CARIDEA(Postlarva)	-	-	-	0.12(1;.)	0.02(1;.)	0.05(2;0)
LEPTOCHELA SERRATORBITA(Postlarva)	-	-	-	-	-	0.02(1;.)
LEANDER(Zoea)	-	-	-	-	-	-
LEANDER TENUICORNIS(Zoea)	-	-	-	-	-	-

Table II-B continued

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
PALAEMONETES(Zoea)	-	-	-	0.04(2;0.05)	-	0.15(1;.)
PALAEMONETES(Larva)	-	-	-	-	-	0.8(1;.)
PALAEMONETES(Postlarva)	-	-	-	-	-	-
PALAEMONETES PUGIO(Postlarva)	-	-	-	-	-	-
PERICLIMENES(Zoea)	-	0(1;.)	-	-	0.51(3;0.37)	-
ALPHEIDAE(Zoea)	-	-	-	0.25(2;0.26)	2.48(6;1.92)	0.9(2;0.98)
ALPHEIDAE(Postlarva)	-	-	-	-	0.02(1;.)	-
OGYRIDES(Zoea)	-	0(1;.)	-	1.78(2;2.37)	-	-
OGYRIDES LIMICOLA(Zoea)	-	-	0.03(2;0.05)	0.29(3;0.25)	5.97(6;9.87)	0.18(2;0.19)
OGYRIDES LIMICOLA(Mysis)	-	-	-	-	-	-
HIPPOLYTIDAE(Zoea)	-	0.02(2;0.03)	0(1;.)	-	-	-
HIPPOLYTE(Zoea)	-	-	-	0.03(1;.)	-	-
LATREUTES FUCORUM(Zoea)	-	-	0(1;.)	-	0.03(1;.)	-
LATREUTES FUCORUM(Postlarva)	-	-	-	-	-	0.02(2;0.02)
LATREUTES PARVULUS(Juvenile)	-	-	0(1;.)	-	-	-
PROCESSIDAE(Zoea)	-	0(1;.)	-	-	-	-
PROCESSA(Zoea)	-	0.05(3;0.07)	-	-	0.49(2;0.18)	-
PROCESSA(Postlarva)	-	-	-	-	0.06(1;.)	-
STENOPUS HISPIDUS(Zoea)	-	-	-	-	0(1;.)	-
PALINURA(Phyllosoma)	-	0.01(1;.)	-	-	-	-
ANOMURA(Zoea)	-	-	0.09(1;.)	-	0.32(1;.)	0.48(3;0.33)
ANOMURA(Megalopa)	-	-	-	-	-	-
THALASSINIDAE(Zoea)	-	0.02(2;0.03)	-	-	-	-
LAOMEDIIDAE(Zoea)	-	-	-	-	-	0.53(2;0.6)
CALLIANASSIDAE(Zoea)	-	-	-	-	0.01(4;0)	-
CALLIANASSIDAE(Larva)	-	0.01(1;.)	-	-	-	-
CALLIANASSA(Zoea)	-	-	-	-	-	-
CALLIANASSA MAJOR(Zoea)	-	-	-	-	0.01(3;0.01)	-
CALLIANASSA MAJOR(Megalopa)	-	-	-	-	-	-
PAGURIDAE(Zoea)	0.13(1;.)	0.19(3;0.25)	0.02(2;0.02)	0.52(3;0.67)	0.49(2;0.19)	0.02(3;0.01)
PAGURIDAE(Megalopa)	0.02(2;0.01)	0.07(1;.)	-	0.03(1;.)	-	-
PAGURUS(Zoea)	-	0.03(3;0.04)	0.01(1;.)	-	-	-
PAGURUS(Megalopa)	0(1;.)	-	-	0.19(4;0.17)	-	-
PAGURUS LONGICARPUS(Zoea)	-	0.19(3;0.15)	-	-	-	-
PORCELLANIDAE(Zoea)	-	0.14(1;.)	0.02(1;.)	-	-	0.01(2;0.01)
PORCELLANIDAE(Megalopa)	-	-	-	-	0.03(1;.)	-
PETROLISTHES ARMATUS(Zoea)	-	-	-	-	0(1;.)	-
EUCERAMUS PRAELONGUS(Zoea)	-	-	-	0.87(1;.)	-	-
EUCERAMUS PRAELONGUS(Megalopa)	-	-	-	0.04(1;.)	0(1;.)	-
POLYONYX GIBBESI(Zoea)	-	-	-	0.01(1;.)	0(1;.)	-

Table II-B continued

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
PALAEMONETES(Zoea)	-	0.51(1;.)	-	-	-	-
PALAEMONETES(Larva)	-	-	0.05(1;.)	-	-	-
PALAEMONETES(Postlarva)	-	0.02(1;.)	-	-	-	-
PALAEMONETES PUGIO(Postlarva)	-	-	0.01(1;.)	-	-	-
PERICLIMENES(Zoea)	-	-	-	-	-	-
ALPHEIDAE(Zoea)	-	3.26(1;.)	-	-	-	-
ALPHEIDAE(Postlarva)	-	-	-	-	-	-
OGYRIDES(Zoea)	-	-	-	-	-	-
OGYRIDES LIMICOLA(Zoea)	-	0.34(1;.)	-	-	-	-
OGYRIDES LIMICOLA(Mysis)	-	-	-	-	-	0.01(1;.)
HIPPOLYTIDAE(Zoea)	-	-	-	-	-	-
HIPPOLYTE(Zoea)	-	-	-	-	-	-
LATREUTES FUCORUM(Zoea)	-	-	-	-	-	-
LATREUTES FUCORUM(Postlarva)	-	-	-	-	-	-
LATREUTES PARVULUS(Juvenile)	-	-	-	-	-	-
PROCESSIDAE(Zoea)	-	-	-	-	-	-
PROCESSA(Zoea)	-	-	-	-	-	-
PROCESSA(Postlarva)	-	-	-	-	-	-
STENOPUS HISPIDUS(Zoea)	-	-	-	-	-	-
PALINURA(Phyllosoma)	-	-	-	-	-	-
ANOMURA(Zoea)	0.11(1;.)	1.35(4;1.07)	-	1.01(2;0.43)	-	-
ANOMURA(Megalopa)	-	-	-	0.07(1;.)	-	0.08(1;.)
THALASSINIDAE(Zoea)	-	-	-	-	-	-
LAOMEDIIDAE(Zoea)	-	1.37(1;.)	-	-	-	-
CALLIANASSIDAE(Zoea)	-	0.02(3;0.02)	-	-	-	-
CALLIANASSIDAE(Larva)	-	0.01(2;0)	0.03(2;0.01)	0.01(1;.)	0.02(1;.)	-
CALLIANASSA(Zoea)	-	1.73(1;.)	0.01(1;.)	-	-	-
CALLIANASSA MAJOR(Zoea)	-	7.01(3;3.07)	-	-	-	-
CALLIANASSA MAJOR(Megalopa)	0(1;.)	-	-	-	-	-
PAGURIDAE(Zoea)	0.03(1;.)	0.61(5;0.67)	-	-	1.68(1;.)	0.16(1;.)
PAGURIDAE(Megalopa)	-	0.01(2;0.01)	0.01(2;0)	0.13(2;0.17)	-	-
PAGURUS(Zoea)	-	-	-	-	-	-
PAGURUS(Megalopa)	-	-	-	-	-	-
PAGURUS LONGICARPUS(Zoea)	-	-	-	-	-	-
PORCELLANIDAE(Zoea)	-	-	-	5.28(1;.)	0.01(1;.)	-
PORCELLANIDAE(Megalopa)	-	-	-	-	0.01(1;.)	0.03(1;.)
PETROLISTHES ARMATUS(Zoea)	-	-	-	-	-	-
EUCERAMUS PRAELONGUS(Zoea)	-	-	-	-	-	-
EUCERAMUS PRAELONGUS(Megalopa)	-	-	-	-	-	-
POLYONYX GIBBESI(Zoea)	-	-	-	-	-	-

Table II-B continued

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
POLYONYX GIBBESI(Megalopa)	-	-	-	-	-	0.26(1;.)
LEPIDOPA(Zoea)	-	-	-	0.01(1;.)	0(1;.)	-
LEPIDOPA WEBSTERI(Zoea)	-	-	-	-	0(1;.)	-
ALBUNEA PARETII(Zoea)	-	-	-	-	-	-
ALBUNEA GIBBESI(Zoea)	-	-	-	-	0.19(2;0.23)	-
EMERITA TALPOIDA(Zoea)	-	-	-	-	-	-
CLIBANARIS VITTATUS(Zoea)	-	-	-	-	0.34(2;0.04)	-
CLIBANARIS VITTATUS(Megalopa)	-	-	-	-	-	-
UPOGEBIA AFFINIS(Zoea)	-	-	-	2.6(1;.)	-	-
BRACHYURA(Zoea)	0.23(2;0.28)	1.5(9;2.18)	2.54(6;4.61)	2.84(7;3.99)	7.31(12;11.14)	2.62(7;2.63)
BRACHYURA(Megalopa)	-	1.96(4;3.24)	1.32(1;.)	0.01(2;0.01)	1.34(6;2.41)	0.1(1;.)
BRACHYURA(Larva)	-	-	-	-	-	-
DORIPPIDAE(Zoea)	-	-	-	0.03(1;.)	0.02(2;0.02)	-
CALAPPIDAE(Zoea)	-	-	-	-	1.09(1;.)	-
CALAPPIDAE(Megalopa)	-	0.02(1;.)	-	-	0.06(1;.)	-
CALAPPA(Megalopa)	0.01(4;0)	-	0.01(1;.)	-	-	0.04(3;0.04)
HEPATUS(Zoea)	-	-	-	0.43(1;.)	-	-
HEPATUS EPHELITICUS(Zoea)	-	-	-	0.12(1;.)	-	-
LEUCOSIIDAE(Zoea)	-	-	-	-	0.2(2;0.23)	2.04(2;1.08)
LEUCOSIIDAE(Megalopa)	-	-	-	-	-	0.07(3;0.11)
PERSEPHONA(Zoea)	-	-	-	0.43(1;.)	3.91(1;.)	-
RANINIDAE(Megalopa)	-	-	-	-	-	-
MAJIDAE(Zoea)	-	0.04(1;.)	-	-	-	-
MAJIDAE(Megalopa)	-	-	-	0.02(2;0.02)	0(1;.)	-
LIBINIA(Zoea)	-	-	-	0.06(2;0)	-	-
PARTHENOPIDAE(Megalopa)	-	-	-	-	-	-
PARTHENOPE(Megalopa)	-	-	0.02(1;.)	-	-	-
PORTUNIDAE(Zoea)	-	0.02(2;0.02)	0(1;.)	-	-	-
PORTUNIDAE(Megalopa)	0.06(4;0.07)	0.22(2;0.23)	0.01(3;0.01)	0.01(1;.)	0.01(3;0.01)	-
PORTUNIDAE(Juvenile)	-	-	-	-	-	-
ARENAEUS CRIBRARIUS(Megalopa)	-	-	0.04(1;.)	0.01(1;.)	0.03(1;.)	-
BATHYNECTES(Megalopa)	-	-	-	0.01(1;.)	-	-
CALLINECTES(Zoea)	-	3.75(1;.)	0.14(3;0.18)	0.24(2;0.24)	-	6.37(1;.)
CALLINECTES(Megalopa)	-	-	0.02(1;.)	-	-	-
CALLINECTES SAPIDUS(Zoea)	-	-	-	0.87(1;.)	11.07(7;25.36)	69.4(3;75)
CALLINECTES SAPIDUS(Megalopa)	0.07(23;0.15)	7.87(20;13.07)	0.05(8;0.07)	0.04(19;0.04)	0.07(32;0.11)	0.44(56;2.45)
CALLINECTES SAPIDUS(Larva)	-	-	-	-	-	-
CALLINECTES SAPIDUS(Juvenile)	-	-	-	0.01(3;0)	0.01(1;.)	0(4;0)
CALLINECTES SIMILIS(Zoea)	-	-	-	-	7.47(2;8.81)	44.57(1;.)
CALLINECTES SIMILIS(Megalopa)	0.24(79;0.53)	1.57(72;7.02)	1.3(39;6.78)	0.27(46;0.87)	0.05(26;0.06)	0.08(43;0.22)

Table II-B continued

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
POLYONYX GIBBESI(Megalopa)	0.14(1;.)	-	-	-	-	-
LEPIDOPA(Zoea)	-	0.17(1;.)	-	-	-	-
LEPIDOPA WEBSTERI(Zoea)	-	-	-	-	-	-
ALBUNEA PARETII(Zoea)	-	0.17(1;.)	-	-	-	-
ALBUNEA GIBBESI(Zoea)	-	-	-	-	-	-
EMERITA TALPOIDA(Zoea)	-	0.17(1;.)	-	-	-	-
CLIBANARIS VITTATUS(Zoea)	-	1.84(3;0.86)	0.1(2;0.12)	-	-	-
CLIBANARIS VITTATUS(Megalopa)	-	-	0.01(1;.)	0.02(1;.)	-	-
UPOGEBIA AFFINIS(Zoea)	-	0.17(1;.)	-	-	-	-
BRACHYURA(Zoea)	1.16(1;.)	62(19;87.2)	4.44(2;5.77)	7.22(4;8.21)	4.15(13;3.25)	1.29(3;1.17)
BRACHYURA(Megalopa)	-	13.79(9;22.11)	0.64(4;0.54)	0.6(6;0.59)	0.21(9;0.18)	0.04(6;0.04)
BRACHYURA(Larva)	-	20.4(3;15.68)	-	-	-	-
DORIPPIDAE(Zoea)	-	-	-	-	-	-
CALAPPIDAE(Zoea)	-	-	-	-	-	-
CALAPPIDAE(Megalopa)	-	-	-	-	-	-
CALAPPA(Megalopa)	0.02(1;.)	-	-	-	0(1;.)	0.01(1;.)
HEPATUS(Zoea)	-	-	-	-	-	-
HEPATUS EPHELITICUS(Zoea)	-	-	-	-	-	-
LEUCOSIIDAE(Zoea)	-	-	-	-	-	-
LEUCOSIIDAE(Megalopa)	0.01(3;0.01)	-	-	-	-	-
PERSEPHONA(Zoea)	-	-	-	-	-	-
RANINIDAE(Megalopa)	-	-	0(2;0)	-	0(1;.)	-
MAJIDAE(Zoea)	-	-	-	-	-	-
MAJIDAE(Megalopa)	-	-	-	-	-	-
LIBINIA(Zoea)	-	-	-	-	-	-
PARTHENOPIDAE(Megalopa)	-	-	-	-	0.01(1;.)	-
PARTHENOPE(Megalopa)	-	-	-	-	-	-
PORTUNIDAE(Zoea)	-	0.17(1;.)	-	-	-	-
PORTUNIDAE(Megalopa)	-	0.01(1;.)	0.03(4;0.04)	0(1;.)	0.01(2;0)	0(1;.)
PORTUNIDAE(Juvenile)	0(1;.)	-	0(1;.)	-	-	-
ARENAEUS CRIBRARIUS(Megalopa)	0(1;.)	0.01(3;0)	0.05(3;0.06)	0.01(1;.)	0.01(2;0)	0(2;0)
BATHYNECTES(Megalopa)	-	-	-	-	-	-
CALLINECTES(Zoea)	-	8.23(1;.)	0.05(1;.)	-	-	-
CALLINECTES(Megalopa)	-	-	0(1;.)	-	-	-
CALLINECTES SAPIDUS(Zoea)	-	2.93(1;.)	-	-	-	-
CALLINECTES SAPIDUS(Megalopa)	0.56(70;1.65)	0.13(49;0.18)	0.85(70;2.15)	2.64(34;8.9)	0.7(71;3.43)	0.14(25;0.34)
CALLINECTES SAPIDUS(Larva)	0.02(1;.)	-	-	-	-	-
CALLINECTES SAPIDUS(Juvenile)	0.03(5;0.04)	0.2(2;0.27)	0.02(4;0.01)	1.39(4;1.67)	0.02(1;.)	0(1;.)
CALLINECTES SIMILIS(Zoea)	-	-	-	-	-	-
CALLINECTES SIMILIS(Megalopa)	0.51(41;1.8)	0.04(23;0.04)	0.2(42;0.38)	0.42(26;1.36)	0.44(67;1.57)	0.51(35;1.56)

Table II-B continued

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
CALLINECTES SIMILIS(Juvenile)	-	0.02(3;0)	0.01(3;0)	0.06(8;0.08)	0.02(9;0.02)	0.01(13;0.01)
OVALIPES(Megalopa)	0.01(7;0.02)	-	-	0.02(1;.)	-	-
OVALIPES(Juvenile)	0.01(6;0)	0(1;.)	-	-	-	-
OVALIPES FLORIDANUS(Juvenile)	-	0.12(1;.)	-	-	-	-
PORTUNUS(Zoea)	-	-	0.01(1;.)	0.1(1;.)	1.07(4;1.9)	1.34(3;0.9)
PORTUNUS(Megalopa)	0.04(26;0.07)	0.04(13;0.04)	0.13(21;0.24)	0.4(33;1.31)	0.08(24;0.14)	0.06(36;0.11)
PORTUNUS(Juvenile)	0.01(1;.)	-	-	0.02(11;0.01)	0.01(7;0.01)	0.03(9;0.02)
PORTUNUS GIBBESI(Megalopa)	-	-	-	-	0.01(1;.)	-
PORTUNUS GIBBESI(Juvenile)	-	-	-	0(2;0)	0(1;.)	-
XANTHIDAE(Zoea)	-	-	-	0.06(1;.)	0.7(1;.)	-
XANTHIDAE(Megalopa)	-	-	0.01(1;.)	0.01(1;.)	-	0.03(5;0.05)
EURYPANOPEUS(Zoea)	-	-	-	-	-	-
EURYPANOPEUS DEPRESSUS(Zoea)	-	0.04(1;.)	-	-	-	-
EURYPANOPEUS DEPRESSUS(Megalopa)	-	-	-	0.03(1;.)	0.02(1;.)	-
HEXAPANOPEUS(Megalopa)	-	-	-	0(1;.)	-	-
HEXAPANOPEUS ANGUSTIFRONS(Zoea)	-	0(1;.)	0.01(1;.)	0.42(3;0.41)	0.16(2;0.21)	-
HEXAPANOPEUS ANGUSTIFRONS(Megalopa)	-	-	-	0.43(1;.)	0.12(3;0.2)	0.01(2;0)
NEOPANOPE(Zoea)	-	-	-	0.04(1;.)	-	-
NEOPANOPE(Megalopa)	-	-	-	0.02(2;0.02)	-	-
PANOPEUS(Zoea)	-	-	-	0.82(2;0.67)	9.78(1;.)	-
EURYTIUM LIMOSUM(Megalopa)	-	-	-	-	-	-
MICROPANOPE(Zoea)	-	-	0(1;.)	-	-	-
MENIPPE(Zoea)	-	-	-	-	0.01(1;.)	-
MENIPPE MERCENARIA(Zoea)	-	-	-	-	-	-
PILUMNUS(Zoea)	-	-	0(1;.)	-	-	-
PINNOTHERIDAE(Zoea)	-	-	-	0.17(1;.)	-	-
PINNOTHERES(Zoea)	-	-	-	0.88(2;1.2)	5.42(2;6.17)	-
PINNIXA(Zoea)	-	-	0.01(2;0.01)	0.88(2;1.2)	1.96(1;.)	-
PINNIXA(Megalopa)	-	-	-	1.73(1;.)	-	-
PINNIXA(Postlarva)	-	-	-	-	0.03(1;.)	-
PINNIXA CHAETOPTERANA(Zoea)	-	0(1;.)	-	0.14(3;0.16)	-	-
PINNIXA SAYANA(Zoea)	-	0.01(2;0.01)	0(2;0)	8.22(4;14.15)	-	-
PARAPINNIXA BOUVIERI(Postlarva)	-	-	-	-	0.01(1;.)	-
SESARMA(Zoea)	-	-	-	-	-	-
SESARMA CINEREUM(Zoea)	-	-	-	-	-	-
SESARMA CINEREUM(Megalopa)	-	-	-	-	-	0(1;.)
SESARMA RETICULATUM(Zoea)	-	-	-	-	-	-
SESARMA RETICULATUM(Megalopa)	-	-	-	-	-	-
OCYPODE QUADRATA(Zoea)	-	-	-	-	-	-
UCA(Zoea)	-	-	-	0.1(2;0.06)	0.36(5;0.14)	2.28(2;1.87)

Table II-B continued

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
CALLINECTES SIMILIS(Juvenile)	0.06(13;0.12)	0.01(5;0.01)	0.01(2;0)	0.12(5;0.16)	0.01(6;0.01)	0.01(3;0)
OVALIPES(Megalopa)	-	-	0.02(1;.)	-	0.88(1;.)	0.01(3;0)
OVALIPES(Juvenile)	-	-	-	0(1;.)	0(1;.)	0.02(6;0.02)
OVALIPES FLORIDANUS(Juvenile)	-	-	-	-	0.01(1;.)	-
PORTUNUS(Zoea)	-	-	-	-	0.02(1;.)	-
PORTUNUS(Megalopa)	0.28(34;0.86)	0.05(18;0.09)	0.06(50;0.08)	0.04(28;0.04)	0.14(57;0.46)	0.04(22;0.08)
PORTUNUS(Juvenile)	0.03(4;0.03)	0.01(5;0.01)	0.01(6;0.01)	0.01(4;0.01)	0.01(3;0)	-
PORTUNUS GIBBESI(Megalopa)	-	-	-	-	-	-
PORTUNUS GIBBESI(Juvenile)	-	-	-	0.01(1;.)	-	-
XANTHIDAE(Zoea)	-	-	-	-	-	-
XANTHIDAE(Megalopa)	0.05(6;0.04)	-	-	0(1;.)	0(1;.)	-
EURYPANOPEUS(Zoea)	-	1.71(1;.)	-	-	-	-
EURYPANOPEUS DEPRESSUS(Zoea)	-	1.03(1;.)	-	-	-	-
EURYPANOPEUS DEPRESSUS(Megalopa)	-	-	-	-	-	-
HEXAPANOPEUS(Megalopa)	-	-	-	-	-	-
HEXAPANOPEUS ANGUSTIFRONS(Zoea)	-	4.13(1;.)	-	-	-	-
HEXAPANOPEUS ANGUSTIFRONS(Megalopa)	0.01(1;.)	-	-	-	-	-
NEOPANOPE(Zoea)	-	-	-	-	-	-
NEOPANOPE(Megalopa)	-	-	-	-	-	-
PANOPEUS(Zoea)	-	1.1(2;0.1)	-	-	-	-
EURYTIUM LIMOSUM(Megalopa)	-	-	0.01(1;.)	-	0.01(1;.)	-
MICROPANOPE(Zoea)	-	-	-	-	-	-
MENIPPE(Zoea)	-	-	-	-	-	-
MENIPPE MERCENARIA(Zoea)	-	1.44(2;0.38)	-	-	-	-
PILUMNUS(Zoea)	-	-	-	-	-	-
PINNOTHERIDAE(Zoea)	-	-	-	-	-	-
PINNOTHERES(Zoea)	-	-	-	-	-	-
PINNIXA(Zoea)	-	1.23(3;0.75)	-	-	-	-
PINNIXA(Megalopa)	-	-	-	-	-	-
PINNIXA(Postlarva)	-	-	-	-	-	-
PINNIXA CHAETOPTERANA(Zoea)	-	-	-	-	-	-
PINNIXA SAYANA(Zoea)	-	-	-	-	-	-
PARAPINNIXA BOUVIERI(Postlarva)	-	-	-	-	-	-
SESARMA(Zoea)	-	1.37(1;.)	-	-	-	-
SESARMA CINEREUM(Zoea)	-	6.54(2;0.96)	-	-	-	-
SESARMA CINEREUM(Megalopa)	-	-	-	-	-	-
SESARMA RETICULATUM(Zoea)	-	2.06(1;.)	-	-	-	-
SESARMA RETICULATUM(Megalopa)	0.01(1;.)	-	-	-	-	-
OCYPODE QUADRATA(Zoea)	-	0.59(1;.)	-	-	-	-
UCA(Zoea)	-	22.62(3;12.69)	-	-	-	-

Table II-B continued

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
UCA(Megalopa)	-	-	-	-	0.09(1;.)	1.02(3;0.66)
STOMATOPODA(Zoea)	-	-	-	0.68(3;0.91)	-	-
STOMATOPODA(Larva)	0.02(10;0.02)	0.03(7;0.02)	0.3(9;0.69)	0.04(9;0.07)	0.06(8;0.08)	0.06(8;0.07)
STOMATOPODA(Pseudozoea)	-	-	-	-	0.04(1;.)	-
STOMATOPODA(Antizoea)	-	-	-	-	-	0.05(1;.)
SQUILLIDAE(Zoea)	-	0(2;0)	0(1;.)	0.13(1;.)	0.15(1;.)	-
SQUILLIDAE(Larva)	-	-	-	-	-	0.15(1;.)
SQUILLIDAE(Juvenile)	-	-	0(1;.)	-	-	-
SQUILLIDAE(Pseudozoea)	-	-	0.01(2;0.01)	-	1.71(4;1.72)	-
SQUILLIDAE(Antizoea)	-	-	0(1;.)	-	-	0.64(1;.)
SQUILLA(Zoea)	-	0.01(1;.)	-	-	-	-
SQUILLA(Larva)	-	-	-	0(1;.)	-	-
SQUILLA(Protozoea)	-	-	-	-	-	-
SQUILLA(Pseudozoea)	-	-	-	-	0.27(1;.)	-
INSECTA	0.02(1;.)	-	-	3.38(1;.)	-	-
GERRIDAE(Larva)	-	-	-	-	-	-
CHIRONOMIDAE(Larva)	-	-	-	-	54.8(1;.)	-
SIPUNCULA(Larva)	-	0(1;.)	-	-	-	-
PHORONIDA(Actinotrocha)	-	0.03(2;0.02)	-	-	-	-
BRYOZOA(Cyphonautes larva)	-	0.02(1;.)	1.32(3;1.16)	0.44(5;0.5)	1.56(1;.)	-
BRACHIOPODA(Larva)	-	-	0(1;.)	-	-	-
ECHINODERMATA(Larva)	-	-	-	-	-	-
ASTEROIDEA(Juvenile)	-	-	-	0.01(1;.)	-	-
OPHIUROIDEA(Larva)	-	-	-	-	-	55.5(3;50.7)
OPHIUROIDEA(Postlarva)	-	-	-	-	0.31(1;.)	26.8(3;27.21)
CHAETOGNATHA(Juvenile)	-	-	0.07(1;.)	-	-	-
CHAETOGNATHA	6.44(1;.)	-	-	6.79(1;.)	-	8.93(3;9.04)
SAGITTA(Juvenile)	0.31(4;0.13)	1.04(4;0.7)	0.04(5;0.03)	18.27(6;12.66)	206.1(6;237.6)	30.84(3;44.12)
SAGITTA	2.31(4;2.43)	0.66(10;0.84)	2.33(7;4)	2.17(4;1.56)	42.05(7;31.49)	3.25(4;3.58)
SAGITTA BIPUNCTATA	-	-	1.84(1;.)	-	-	-
SAGITTA ENFLATA(Juvenile)	-	-	0.02(1;.)	-	-	-
SAGITTA ENFLATA	1.43(4;1.89)	2.83(7;4.81)	0.18(2;0.24)	0.09(1;.)	1.99(2;1.46)	1.98(2;0.69)
SAGITTA HEXAPTERA	1.41(1;.)	0.28(1;.)	1.84(1;.)	-	0(1;.)	-
SAGITTA HISPIDA	-	0.14(1;.)	-	4.75(1;.)	11.38(2;10.35)	-
SAGITTA TENUIS	-	0.62(1;.)	0.59(2;0.81)	-	2.85(3;2.94)	4.64(2;5.03)
SAGITTA FRIDERICI(Juvenile)	-	-	-	-	129.8(1;.)	-
SAGITTA FRIDERICI	0.36(1;.)	0.99(5;0.61)	0.66(7;1.35)	7.35(2;3.05)	9.24(3;8.5)	1.08(1;.)
SAGITTA HELENAE	0.19(2;0.13)	0.7(6;0.42)	0.73(3;0.97)	-	-	-
PTEROSAGITTA DRACO(Juvenile)	-	0.09(1;.)	-	-	-	-
PTEROSAGITTA DRACO	-	0.09(1;.)	-	-	-	-

Table II-B continued

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
UCA(Megalopa)	-	0.86(2;0.24)	-	-	-	-
STOMATOPODA(Zoea)	-	0.08(1;.)	-	-	-	-
STOMATOPODA(Larva)	0.1(1;.)	0.29(8;0.76)	-	0.08(1;.)	0.12(7;0.13)	0(1;.)
STOMATOPODA(Pseudozoea)	0.11(1;.)	-	-	0.09(2;0.1)	-	-
STOMATOPODA(Antizoea)	-	-	-	-	-	-
SQUILLIDAE(Zoea)	-	-	-	-	-	-
SQUILLIDAE(Larva)	-	-	-	-	-	-
SQUILLIDAE(Juvenile)	-	-	-	-	-	-
SQUILLIDAE(Pseudozoea)	-	-	-	-	-	-
SQUILLIDAE(Antizoea)	-	-	-	-	-	-
SQUILLA(Zoea)	-	-	-	-	-	-
SQUILLA(Larva)	-	-	-	-	-	0.01(1;.)
SQUILLA(Protozoea)	-	-	-	-	-	0.01(1;.)
SQUILLA(Pseudozoea)	-	0.42(1;.)	0.09(1;.)	0.02(2;0.02)	0.01(2;0.01)	0.02(1;.)
INSECTA	-	-	-	-	-	-
GERRIDAE(Larva)	0.01(1;.)	-	-	-	-	-
CHIRONOMIDAE(Larva)	-	12.81(1;.)	-	-	-	-
SIPUNCULA(Larva)	-	-	-	-	-	-
PHORONIDA(Actinotrocha)	-	-	-	-	-	-
BRYOZOA(Cyphonautes larva)	-	0.17(1;.)	-	-	-	-
BRACHIOPODA(Larva)	-	-	-	-	-	-
ECHINODERMATA(Larva)	0.74(1;.)	4.95(6;4.18)	-	0.71(1;.)	-	-
ASTEROIDEA(Juvenile)	-	-	-	-	-	-
OPHIUROIDEA(Larva)	-	4.41(6;3.6)	-	-	1.83(1;.)	-
OPHIUROIDEA(Postlarva)	-	0.17(1;.)	-	-	-	-
CHAETOGNATHA(Juvenile)	-	-	-	-	-	-
CHAETOGNATHA	-	6.44(7;6.41)	-	12.64(1;.)	-	15.33(3;21.1)
SAGITTA(Juvenile)	-	37.76(3;12.86)	-	-	-	-
SAGITTA	12.55(2;9.56)	10.04(12;7.07)	163.8(4;292.1)	21.96(7;34.09)	21.67(17;20.61)	10.86(7;14.18)
SAGITTA BIPUNCTATA	-	1.81(1;.)	-	-	2.34(2;1.37)	-
SAGITTA ENFLATA(Juvenile)	-	-	-	-	-	-
SAGITTA ENFLATA	-	2.28(8;1.55)	-	3.73(5;1.13)	16.51(12;25.71)	1.42(3;1.36)
SAGITTA HEXAPTERA	-	-	-	-	4.51(4;2.73)	0.19(1;.)
SAGITTA HISPIDA	0.53(1;.)	-	-	-	3.36(1;.)	-
SAGITTA TENUIS	0.63(2;0.15)	1.71(8;0.97)	-	2.64(1;.)	4.85(10;7.48)	1.28(3;1.52)
SAGITTA FRIDERICI(Juvenile)	-	-	-	-	-	-
SAGITTA FRIDERICI	-	7.22(3;9.22)	-	0.61(1;.)	8.77(8;7.53)	1.03(3;0.73)
SAGITTA HELENAE	-	0.87(2;0.47)	-	-	5.47(6;7.29)	0.31(3;0.36)
PTEROSAGITTA DRACO(Juvenile)	-	-	-	-	-	-
PTEROSAGITTA DRACO	-	-	-	-	-	-

Table II-B continued

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
KROHNITTA	-	0.05(1;.)	-	-	-	-
DOLIOLIDA	0.09(1;.)	0.33(6;0.38)	11.62(7;23.24)	5.99(6;6.23)	12.3(7;19.73)	7.02(2;2.69)
SALPIDA	-	-	-	-	-	12.55(2;10.54)
SALPIDAE	-	-	-	-	-	-
SALPA	0.09(1;.)	-	-	-	-	0.54(1;.)
APPENDICULARIA	0.16(4;0.07)	1.7(4;1.64)	0.02(1;.)	30.17(10;65.03)	-	3.15(1;.)
OIKOPLEURA(Larva)	-	-	-	-	-	-
OIKOPLEURA(Juvenile)	-	-	-	-	1.41(1;.)	-
OIKOPLEURA	0.35(3;0.26)	1.64(4;2.69)	35.02(3;53.95)	1.67(4;1.79)	33.11(10;50.65)	2.26(5;1.89)
BRANCHIOSTOMA(Juvenile)	-	-	-	-	0(1;.)	-
AMPHIOXUS(Juvenile)	-	-	-	-	-	-

Table II-B continued

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
KROHNITTA	-	-	-	-	-	-
DOLIOLIDA	-	6.36(2;1.23)	-	2.33(2;2.3)	2.68(8;0.94)	9.72(3;7.95)
SALPIDA	-	-	-	-	-	-
SALPIDAE	-	-	-	3.16(1;.)	1.33(3;0.71)	23.91(6;42.21)
SALPA	-	33.35(4;57.93)	-	-	-	1.36(2;0.3)
APPENDICULARIA	-	17.58(10;21.68)	-	-	-	-
OIKOPLEURA(Larva)	-	0.24(1;.)	-	-	-	-
OIKOPLEURA(Juvenile)	-	-	-	-	-	.(.;.)
OIKOPLEURA	2.01(2;1.36)	2.37(10;1.62)	3.31(3;2.55)	4.19(6;3.83)	17.45(12;24.58)	16.98(6;18.06)
BRANCHIOSTOMA(Juvenile)	-	-	-	-	-	-
AMPHIOXUS(Juvenile)	-	-	-	-	2.02(1;.)	-

Table II-C. Monthly mean densities (with the number of positive samples and standard deviation in parenthesis) for zooplankton biomass (ml/m^3; settled and displacement volumes) and for zooplankton taxa (no./m^3) collected with a 60-cm, 0.363-mm mesh, bongo net between February 1978 and December 1995 during the LOOP Environmental Monitoring Project. For stations where both sides of the bongo frame were analyzed or where stratified samples were taken, each sample analyzed was considered as a separate observation. Taxonomic order within table was determined by the National Oceanographic Data Center (NODC) code.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Settled Volume	0.87(110;0.86)	1.21(100;1.16)	1.75(78;1.64)	3.07(69;2.98)	3.68(109;8.6)	1.7(70;1.65)
Displacement Volume	0.4(172;0.49)	0.46(153;0.43)	0.79(138;0.9)	0.96(132;1.39)	1.18(171;2.57)	0.68(134;0.79)
NOCTILUCA SCINTILLANS	-	-	-	-	-	-
CERATIUM	-	-	-	-	-	-
RADIOLARIA	-	-	-	-	-	-
CNIDARIA(Larva)	-	-	-	-	-	-
CNIDARIA	-	-	-	-	-	-
CNIDARIA(Polyp)	0.4(3;0.17)	0.05(1;.)	-	-	-	-
CNIDARIA(Medusa)	0.25(3;0.2)	-	-	-	-	-
HYDROZOA(Larva)	0.28(1;.)	-	0.02(1;.)	-	13.93(6;10.74)	-
HYDROZOA(Juvenile)	6.15(5;6.38)	-	19.76(5;18.57)	35.66(2;45.17)	2.77(1;.)	-
HYDROZOA	6.91(1;.)	-	6.97(2;6.01)	22.39(5;24.03)	-	5.75(5;3.94)
HYDROZOA(Polyp)	-	-	6.42(1;.)	-	-	0.02(1;.)
HYDROZOA(Medusa)	1.19(6;1.73)	1.48(9;3.12)	0.04(1;.)	6.16(23;11.95)	9.17(36;17.74)	7.18(17;7.07)
HYDROZOA(Colony)	-	-	-	-	-	-
ANTHOMEDUSAE	-	-	-	-	-	-
EUPHYSORA GRACILIS	-	-	-	1.01(1;.)	3.1(2;1.29)	-
EUPHYSORA GRACILIS(Medusa)	-	0.76(6;1.29)	-	-	7.46(14;11.76)	-
LEPTOMEDUSAE	-	-	-	-	-	-
OBELIA(Medusa)	-	-	-	-	-	-
LIRIOPE TETRAPHYLLA	-	-	-	-	-	-
SIPHONOPHORA(Larva)	0.27(1;.)	-	-	-	-	-
SIPHONOPHORA	2.89(26;3.96)	1.82(23;1.65)	12.62(11;17.5)	6.35(16;6.76)	42.93(19;83.36)	4.4(13;4.05)
SIPHONOPHORA(Medusa)	-	-	-	-	-	-
MUGGIAEA(Medusa)	-	-	-	-	-	-
DIPHYES	-	-	-	-	-	-
DIPHYES(Medusa)	-	-	-	-	-	-
ABYLOPSIS	-	-	-	-	-	-
ABYLOPSIS(Medusa)	-	-	-	-	-	-
ANTHOZOA(Larva)	-	-	-	-	-	-
ANTHOZOA(Polyp)	-	-	-	-	-	-
ANTHOZOA(Medusa)	-	-	-	-	-	1.33(2;1.42)
CTENOPHORA(Larva)	-	1.46(1;.)	-	2.05(4;1.95)	16.23(7;19.66)	-

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Settled Volume	2.03(112;4.92)	2.38(127;4.18)	1.19(139;1.43)	2.28(138;3.96)	2.5(137;3.25)	1.16(144;1.05)
Displacement Volume	0.52(175;0.88)	0.83(196;4.17)	0.47(199;0.68)	0.66(193;0.74)	0.61(206;0.76)	0.45(195;0.43)
NOCTILUCA SCINTILLANS	-	5.5(1;.)	-	-	-	-
CERATIUM	-	-	1184(4;454)	-	-	-
RADIOLARIA	-	-	0.83(1;.)	-	-	-
CNIDARIA(Larva)	-	9.69(1;.)	-	-	-	-
CNIDARIA	-	17.24(4;10.09)	21.35(26;24.45)	111.8(31;133.3)	3.54(27;3.44)	0.54(1;.)
CNIDARIA(Polyp)	-	0.21(4;0.26)	-	-	-	-
CNIDARIA(Medusa)	-	2.72(1;.)	-	-	-	0.64(13;0.55)
HYDROZOA(Larva)	-	12.46(1;.)	2.92(13;3.02)	-	-	-
HYDROZOA(Juvenile)	-	21.27(3;14.86)	6.8(8;7.87)	5.58(2;4.03)	8.74(8;12.07)	8.34(9;8.96)
HYDROZOA	12.47(7;17.96)	13.27(8;17.99)	14.29(4;7.18)	6.99(7;13.45)	19.2(9;25.18)	2.42(3;2.39)
HYDROZOA(Polyp)	-	0.14(3;0.15)	-	-	-	0.87(1;.)
HYDROZOA(Medusa)	131.1(37;242.2)	28.54(83;42.33)	11.21(48;16)	9.43(49;9.33)	2.24(28;4)	2.85(9;3.34)
HYDROZOA(Colony)	-	-	-	-	-	0.43(1;.)
ANTHOMEDUSAE	-	1.35(2;1.41)	-	-	-	-
EUPHYSORA GRACILIS	-	-	-	-	-	-
EUPHYSORA GRACILIS(Medusa)	-	-	-	-	-	0.69(10;0.76)
LEPTOMEDUSAE	-	2.1(1;.)	-	-	-	-
OBELIA(Medusa)	-	-	1.45(1;.)	-	-	-
LIRIOPE TETRAPHYLLA	-	-	10.37(1;.)	-	-	-
SIPHONOPHORA(Larva)	-	-	-	4.21(1;.)	-	-
SIPHONOPHORA	4.82(8;3.82)	5.05(43;6.85)	1.28(31;1.88)	2.25(50;2.53)	14.35(54;24.69)	3.81(71;11.31)
SIPHONOPHORA(Medusa)	-	-	-	-	-	0.07(1;.)
MUGGIAEA(Medusa)	-	-	-	-	0.52(1;.)	-
DIPHYES	-	-	0.92(2;1.21)	-	-	-
DIPHYES(Medusa)	-	-	1.13(4;0.87)	3.76(15;4.88)	1.33(15;2.02)	-
ABYLOPSIS	-	-	-	-	-	0.83(1;.)
ABYLOPSIS(Medusa)	-	-	2.91(1;.)	-	0.72(11;0.74)	-
ANTHOZOA(Larva)	-	0.63(1;.)	-	-	-	-
ANTHOZOA(Polyp)	-	0.49(1;.)	-	0.08(1;.)	-	-
ANTHOZOA(Medusa)	-	-	-	-	-	-
CTENOPHORA(Larva)	3.36(17;10.07)	6.25(18;8.29)	0.76(18;0.94)	1.45(21;1.34)	0.71(11;1.43)	-

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
CTENOPHORA	0.06(1;.)	-	-	2.49(2;2.1)	3.04(3;0.83)	1.16(1;.)
NEMERTEA(Larva)	-	0.63(1;.)	-	-	-	-
NEMATODA	5.51(6;6.57)	0.2(4;0.25)	-	2.68(11;2.75)	13.26(4;15.39)	0.71(5;0.49)
POLYCHAETA(Juvenile)	-	0.08(2;0.06)	-	-	11.78(3;5.97)	1.3(8;1.48)
POLYCHAETA	-	-	-	-	36.64(1;.)	7.89(1;.)
POLYCHAETA(Copepodid)	-	-	-	-	-	-
POLYCHAETA(Postlarva)	-	-	-	-	-	-
POLYCHAETA(Trochophore larva)	1.11(17;2.65)	1.65(6;2.11)	10.66(4;11.72)	6.42(26;9.22)	7.47(19;9.46)	6.82(13;11.38)
PHYLLODOCIDAE(Larva)	-	-	-	-	-	-
PHYLLODOCIDAE	0.07(2;0.06)	0.04(1;.)	-	-	-	-
ALCIOPIDAE	0.27(3;0.22)	0.14(3;0.18)	-	-	-	-
TYPHLOSCOLECIDAE(Juvenile)	-	-	-	-	-	-
TYPHLOSCOLECIDAE	0.44(1;.)	0.16(2;0.06)	-	0.92(4;0.73)	3.96(2;5.03)	-
TOMOPTERIS(Larva)	-	-	-	-	-	-
TOMOPTERIS(Juvenile)	-	0.3(2;0.37)	-	-	-	-
TOMOPTERIS	-	-	-	0.74(4;0.62)	-	-
TOMOPTERIS(Trochophore larva)	-	-	-	-	-	-
TOMOPTERIS ELEGANS	-	0.04(1;.)	-	-	-	-
NEREIDAE(Larva)	-	-	-	-	-	-
NEREIDAE(Juvenile)	-	0.12(2;0)	-	-	-	0.33(1;.)
NEREIDAE	-	-	-	0.36(1;.)	-	-
SPIONIDAE(Larva)	-	-	-	-	-	-
SPIONIDAE(Juvenile)	-	-	-	-	-	-
SPIONIDAE(Trochophore larva)	-	-	-	-	-	-
CAPITELLIDAE(Larva)	-	-	-	-	-	-
OWENIIDAE(Larva)	-	-	-	-	-	-
OLIGOCHAETA	-	-	-	-	-	-
MYZOBDELLA	-	-	-	-	-	0.01(1;.)
MYZOBDELLA LUGUBRIS	-	-	-	-	-	0.01(1;.)
GASTROPODA(Veliger)	0.53(8;0.42)	0.12(5;0.19)	1.97(4;1.27)	8.83(22;15.62)	3.22(11;5.83)	5.33(22;8.42)
GASTROPODA(Juvenile)	-	-	-	-	-	-
MESOGASTROPODA(Veliger)	-	-	-	-	-	-
VELUTINIDAE(Veliger)	-	0.03(3;0.01)	-	-	-	-
PTEROTRACHEA	-	-	-	-	-	2.5(1;.)
THECOSOMATA(Veliger)	1.05(9;1.85)	0.13(4;0.13)	-	0.58(2;0.04)	21.19(5;35.78)	5.25(5;2.63)
THECOSOMATA(Juvenile)	-		-	-	-	-
THECOSOMATA	0.73(8;1.03)	-	4.29(4;2.96)	92(10;169.6)	19.18(10;22.58)	8.99(2;5.93)
LIMACINA(Veliger)	0.77(4;0.57)	0.18(8;0.19)	-	0.61(3;0.12)	-	1.83(1;.)
LIMACINA	0.24(1;.)	-	-	-	-	-
CAVOLINIA(Veliger)	-	-	-	-	-	-

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
CTENOPHORA	0.05(1;.)	4.19(9;3.52)	12.51(5;14.48)	0.83(7;0.54)	1.05(15;1.02)	2.98(8;3.84)
NEMERTEA(Larva)	-	-	-	-	-	-
NEMATODA	0.87(5;0.84)	1.65(2;0.18)	4270(13;15161)	9.03(9;18.81)	2.94(17;4.29)	0.53(8;0.77)
POLYCHAETA(Juvenile)	0.99(12;1.46)	1.3(19;2.61)	1.68(26;3.1)	0.8(19;1.17)	0.21(10;0.19)	0.15(10;0.18)
POLYCHAETA	0.27(1;.)	60(3;74.6)	1.5(4;1.3)	-	-	0.22(1;.)
POLYCHAETA(Copepodid)	-	-	-	0.31(1;.)	-	-
POLYCHAETA(Postlarva)	-	1.02(3;1)	-	0.12(1;.)	-	-
POLYCHAETA(Trochophore larva)	11.78(27;40.75)	25.58(67;50.99)	7.87(32;17.9)	3.21(48;5.08)	4.32(56;7.62)	1.22(46;1.7)
PHYLLODOCIDAE(Larva)	-	-	-	-	0.22(1;.)	-
PHYLLODOCIDAE	-	-	-	-	-	0.05(1;.)
ALCIOPIDAE	-	0.28(4;0.17)	-	0.16(5;0.14)	0.06(11;0.05)	-
TYPHLOSCOLECIDAE(Juvenile)	-	-	-	0.12(1;.)	-	-
TYPHLOSCOLECIDAE	-	-	0.44(4;0.44)	0.18(2;0.22)	-	0.08(10;0.05)
TOMOPTERIS(Larva)	0.09(2;0.06)	-	-	-	1.33(7;3.44)	-
TOMOPTERIS(Juvenile)	-	0.16(3;0.01)	-	-	0.17(9;0.21)	0.61(3;0.22)
TOMOPTERIS	-	0.27(6;0.16)	-	0.11(8;0.12)	0.16(9;0.14)	0.24(1;.)
TOMOPTERIS(Trochophore larva)	2.19(2;2.25)	-	-	-	-	-
TOMOPTERIS ELEGANS	-	-	-	-	-	-
NEREIDAE(Larva)	0.13(1;.)	0.12(2;0.13)	-	-	0.19(1;.)	0.33(12;0.26)
NEREIDAE(Juvenile)	-	0.22(6;0.22)	-	-	-	-
NEREIDAE	-	-	-	-	0.44(1;.)	-
SPIONIDAE(Larva)	-	0.32(1;.)	-	-	-	-
SPIONIDAE(Juvenile)	-	0.83(2;1)	-	-	-	-
SPIONIDAE(Trochophore larva)	1.89(1;.)	-	-	-	-	-
CAPITELLIDAE(Larva)	-	-	0.04(1;.)	-	-	-
OWENIIDAE(Larva)	-	0.36(1;.)	-	-	-	-
OLIGOCHAETA	0.02(1;.)	-	-	-	-	-
MYZOBDELLA	-	-	-	-	-	-
MYZOBDELLA LUGUBRIS	-	-	-	-	-	-
GASTROPODA(Veliger)	5.43(24;15.14)	9.51(61;32.13)	3.44(34;8.76)	0.78(35;0.69)	1.53(25;3.26)	1.01(31;1.91)
GASTROPODA(Juvenile)	-	-	-	-	2.22(1;.)	0.69(1;.)
MESOGASTROPODA(Veliger)	-	0.43(1;.)	-	-	-	-
VELUTINIDAE(Veliger)	-	-	-	-	-	0.09(6;0.08)
PTEROTRACHEA	-	-	-	-	-	-
THECOSOMATA(Veliger)	0.11(2;0.02)	1(3;0.45)	0.09(1;.)	0.9(26;0.74)	1.58(15;2.84)	0.63(15;0.9)
THECOSOMATA(Juvenile)	-	-	-	-	-	1.26(1;.)
THECOSOMATA	1.42(1;.)	1(6;0.78)	0.61(1;.)	1.55(6;1.38)	3.55(15;3.72)	15.27(22;24.29)
LIMACINA(Veliger)	-	-	0.51(2;0.24)	0.46(2;0.07)	0.35(4;0.28)	-
LIMACINA	-	0.22(3;0.31)	-	-	-	-
CAVOLINIA(Veliger)	-	-	-	-	0.6(1;.)	0.09(1;.)

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
CAVOLINIA	-	-	-	-	-	-
CRESEIS(Veliger)	0.04(1;.)	-	-	-	-	-
CRESEIS	-	-	-	-	-	-
CUVIERINA	-	-	-	-	-	-
BIVALVIA(Veliger)	0.18(2;0.16)	0.24(3;0.28)	-	0.84(5;0.84)	2.15(5;3.81)	1.25(2;0.82)
CRASSOSTREA VIRGINICA(Veliger)	-	-	-	-	-	-
CEPHALOPODA(Larva)	-	-	-	-	-	-
LOLIGINIDAE(Larva)	0.02(20;0.01)	0.03(25;0.02)	0.03(20;0.01)	0.11(15;0.33)	0.04(12;0.02)	0.05(13;0.07)
LOLIGINIDAE(Juvenile)	-	0.01(1;.)	-	-	-	2.4(1;.)
LOLIGINIDAE	-	0.02(1;.)	-	0.05(2;0.03)	0.12(3;0.12)	0.08(2;0.03)
LOLIGO(Larva)	0.01(1;.)	0.01(1;.)	-	0.04(4;0.04)	0.02(1;.)	0.02(5;0.01)
LOLLIGUNCULA(Larva)	0.02(1;.)	0.02(1;.)	-	0.02(1;.)	-	-
LOLLIGUNCULA(Postlarva)	-	-	-	-	-	-
LOLLIGUNCULA BREVIS(Larva)	0.02(1;.)	0.03(2;0)	0.05(1;.)	0.04(3;0.02)	0.04(1;.)	0.64(3;1.03)
LOLLIGUNCULA BREVIS(Juvenile)	-	-	-	-	-	-
LOLLIGUNCULA BREVIS	-	-	0.02(1;.)	-	-	-
ENOPLOTEUTHIS(Larva)	-	-	-	-	-	-
OMMASTREPHES(Larva)	0.02(1;.)	0.02(1;.)	-	0.03(1;.)	-	-
CRUSTACEA(Nauplius)	-	-	-	-	-	-
CLADOCERA(Larva)	-	-	-	-	-	-
CLADOCERA	0.47(2;0.58)	-	-	59.6(9;61.4)	1.16(2;0.3)	33.9(6;41.71)
PENILIA	-	-	-	4.95(9;2.77)	2.09(12;2.33)	-
PENILIA AVIROSTRIS	0.07(1;.)	-	-	-	-	-
POLYPHEMIDAE	-	-	-	-	-	-
EVADNE TERGESTINA	-	0.04(1;.)	-	1.58(13;1.42)	0.81(6;0.99)	1.57(13;2.83)
PODON POLYPHEMOIDES	0.24(1;.)	-	-	-	0.53(6;0.28)	-
OSTRACODA	3.68(39;6.65)	17.41(30;55.18)	30.87(9;65.86)	19.37(28;39.69)	8.84(19;14.21)	10.82(5;11.37)
COPEPODA(Nauplius)	0.52(11;0.61)	0.34(6;0.25)	1.3(2;1.82)	1.42(6;1.9)	2.35(9;2.37)	1.44(5;1.59)
COPEPODA	-	-	-	-	-	-
COPEPODA(Copepodid)	0.12(3;0.09)	-	-	-	5.87(1;.)	-
CALANOIDA(Nauplius)	-	-	-	-	-	-
CALANOIDA	3.01(14;4.24)	1.95(7;1.95)	12.32(15;22.85)	7.28(9;13.1)	5.28(6;10.42)	2.72(2;2.93)
CALANOIDA(Copepodid)	0.17(1;.)	0.04(1;.)	-	0.61(2;0.23)	0.28(2;0)	-
CALANIDAE	-	-	-	-	4.85(1;.)	-
CALANUS	0.23(2;0.23)	1.65(2;0.12)	8.64(7;8.53)	-	15.43(6;14.39)	-
CALANUS(Copepodid)	-	-	-	-	-	-
CALANUS TENUICORNIS	3.53(14;4.95)	17.59(23;28.03)	3.05(6;2.85)	11.41(4;13.93)	-	-
CALANUS MINOR	10.2(44;17.62)	20.69(40;29.56)	18.04(39;20.16)	16.89(25;24.91)	10.33(14;11.06)	7.74(16;10.93)
CALANUS MINOR(Copepodid)	0.53(7;0.64)	1.23(14;1.65)	-	1.9(8;2.4)	1.78(1;.)	0.44(2;0.6)
UNDINULA	-	-	-	-	-	-

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
CAVOLINIA	-	0.09(2;0.08)	-	-	-	-
CRESEIS(Veliger)	-	-	-	-	1.36(14;1.61)	-
CRESEIS	-	0.1(1;.)	-	-	-	-
CUVIERINA	-	0.27(1;.)	-	-	-	-
BIVALVIA(Veliger)	1.9(14;4)	0.88(43;1.33)	0.36(18;0.22)	0.62(15;0.6)	0.47(7;0.43)	0.17(5;0.14)
CRASSOSTREA VIRGINICA(Veliger)	-	0.16(1;.)	-	-	-	-
CEPHALOPODA(Larva)	-	-	0.02(1;.)	-	0.02(1;.)	-
LOLIGINIDAE(Larva)	0.21(13;0.62)	0.04(13;0.03)	0.04(11;0.02)	0.06(27;0.07)	0.03(34;0.03)	0.02(16;0.01)
LOLIGINIDAE(Juvenile)	-	-	-	-	0.01(1;.)	-
LOLIGINIDAE	-	0.02(1;.)	-	-	-	-
LOLIGO(Larva)	0.02(4;0.02)	-	0.06(3;0.04)	-	0.02(7;0.01)	-
LOLLIGUNCULA(Larva)	-	-	-	-	-	-
LOLLIGUNCULA(Postlarva)	-	0.07(1;.)	-	-	-	-
LOLLIGUNCULA BREVIS(Larva)	-	0.05(2;0.03)	0.04(7;0.03)	0.02(4;0)	0.05(6;0.03)	0.04(1;.)
LOLLIGUNCULA BREVIS(Juvenile)	-	-	0.01(1;.)	-	-	-
LOLLIGUNCULA BREVIS	-	0.02(5;0.01)	-	-	-	-
ENOPLOTEUTHIS(Larva)	-	-	0.01(1;.)	-	-	-
OMMASTREPHES(Larva)	-	-	0.01(1;.)	-	0.02(4;0.01)	-
CRUSTACEA(Nauplius)	-	-	-	1.07(1;.)	-	3.04(1;.)
CLADOCERA(Larva)	-	-	-	-	40.32(1;.)	-
CLADOCERA	18.83(6;13.85)	14.78(9;25.92)	78.9(5;157.2)	7.78(22;17.6)	12.03(38;15.22)	16.51(16;20.73)
PENILIA	2.17(28;4.04)	2.12(34;4.67)	0.27(12;0.45)	1.6(19;1.32)	0.22(2;0.26)	0.05(1;.)
PENILIA AVIROSTRIS	0.47(1;.)	0.47(15;0.53)	0.38(3;0.5)	10.77(19;8)	0.52(17;0.87)	3.12(21;4.54)
POLYPHEMIDAE	-	-	10.05(5;10.68)	1.09(1;.)	-	-
EVADNE TERGESTINA	24.88(38;47.19)	9.1(60;18.78)	7.07(45;7.46)	0.57(20;0.75)	0.56(6;0.62)	1.11(2;0.72)
PODON POLYPHEMOIDES	1.01(4;1.68)	-	0.03(1;.)	-	-	5.52(5;7.72)
OSTRACODA	4.36(9;7)	11.46(26;29.79)	3.38(34;4.27)	10.79(52;29.28)	20.67(60;64.54)	7.77(67;18.51)
COPEPODA(Nauplius)	1.14(4;1.14)	1.06(24;1.6)	1.02(15;1.16)	6.16(25;6.49)	3.25(18;3.57)	1.72(33;2.52)
COPEPODA	-	-	1.1(3;1.32)	0.54(1;.)	-	0.3(1;.)
COPEPODA(Copepodid)	-	-	0.44(2;0.04)	-	-	-
CALANOIDA(Nauplius)	-	-	-	0.15(1;.)	1.68(1;.)	-
CALANOIDA	-	0.81(5;0.78)	1.69(15;1.38)	2.25(17;1.98)	2.3(17;3.48)	1.31(11;1.23)
CALANOIDA(Copepodid)	-	-	1.47(12;0.72)	1.63(4;1.67)	6.67(1;.)	0.35(5;0.6)
CALANIDAE	-	-	-	-	-	-
CALANUS	-	-	-	2.59(1;.)	3.81(3;3.13)	1.71(8;1.24)
CALANUS(Copepodid)	-	-	-	5.55(1;.)	-	-
CALANUS TENUICORNIS	-	-	-	10.82(3;15.96)	3.05(4;1.84)	4.03(9;3.81)
CALANUS MINOR	7.02(10;8.85)	1.47(2;1.57)	0.98(8;0.39)	12.06(7;24.17)	3.53(33;3.85)	11.47(34;14.37)
CALANUS MINOR(Copepodid)	-	-	-	-	-	-
UNDINULA	-	-	-	5.68(1;.)	-	0.06(1;.)

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
UNDINULA(Copepodid)	-	-	-	-	-	-
UNDINULA VULGARIS	4.37(56;6.02)	4.38(42;6.33)	4.03(26;5.45)	5.93(13;12.44)	5.78(24;5.52)	12.13(10;18.38)
UNDINULA VULGARIS(Copepodid)	1.03(24;1.35)	0.62(9;0.93)	-	0.95(10;1.04)	5.84(9;14.74)	0.5(2;0.45)
NEOCALANUS GRACILIS	2.55(5;1.61)	0.88(7;0.78)	0.32(2;0.21)	-	-	1.57(3;1.05)
NEOCALANUS ROBUSTIOR	-	-	-	-	-	-
EUCALANIDAE	-	-	-	-	-	-
EUCALANIDAE(Copepodid)	-	0.01(1;.)	-	-	-	-
EUCALANUS	-	-	-	-	-	1.1(1;.)
EUCALANUS(Copepodid)	0.14(2;0.16)	-	-	-	-	0.12(1;.)
EUCALANUS ATTENUATUS	1.49(20;2.47)	3.18(31;7.65)	1.63(17;1.49)	0.37(1;.)	-	1.68(1;.)
EUCALANUS ATTENUATUS(Copepodid)	0.43(7;0.34)	0.57(14;0.48)	-	0.77(3;0.23)	-	-
EUCALANUS ELONGATUS	8.4(16;12.43)	3.69(23;5.94)	0.82(6;0.56)	-	1.26(1;.)	1.43(1;.)
EUCALANUS ELONGATUS(Copepodid)	-	-	0.29(1;.)	-	-	-
EUCALANUS PILEATUS	26.66(65;104.58)	43.83(57;81.32)	56.6(44;136.9)	50.3(54;91.3)	89.4(60;178.6)	200.2(49;525.7)
EUCALANUS PILEATUS(Copepodid)	0.41(20;0.39)	0.34(11;0.37)	-	13.78(27;33.68)	171.9(29;433.6)	26.29(28;44.1)
EUCALANUS MONACHUS	0.53(1;.)	-	-	-	-	34.39(3;31.71)
EUCALANUS MONACHUS(Copepodid)	-	-	-	-	-	1.09(1;.)
EUCALANUS CRASSUS	-	0.1(1;.)	-	1.29(1;.)	-	1.62(2;0.88)
EUCALANUS MUCRONATUS	-	0.29(3;0.31)	1.5(4;1.38)	-	5.48(3;1.6)	-
RHINCALANUS(Copepodid)	0.58(1;.)	-	-	-	-	-
RHINCALANUS CORNUTUS	16.02(42;44.86)	16.34(48;36.45)	10.05(33;13.07)	2.74(14;3.5)	5.6(9;3.92)	2.98(5;2.47)
RHINCALANUS CORNUTUS(Copepodid)	0.28(5;0.17)	0.21(6;0.17)	-	1.29(1;.)	0.8(1;.)	-
RHINCALANUS NASUTUS	13.37(12;21.99)	12.7(10;11.85)	1.67(17;1.64)	-	2.69(3;2.49)	-
PARACALANIDAE	-	-	-	-	-	-
PARACALANIDAE(Copepodid)	-	-	-	-	-	-
PARACALANUS	69.8(14;132.9)	-	-	-	12.13(5;9.41)	25.56(1;.)
PARACALANUS(Copepodid)	0.2(1;.)	-	-	-	0.8(1;.)	-
PARACALANUS PARVUS	16.1(58;29.7)	32.51(59;163.3)	32.81(40;56.75)	25.53(49;28.38)	14.57(42;25.09)	4(18;6.85)
PARACALANUS PARVUS(Copepodid)	0.25(8;0.24)	1.26(20;1.89)	-	3.87(15;4.16)	13.99(11;42.77)	0.78(3;1.27)
PARACALANUS CRASSIROSTRIS	0.33(2;0.13)	-	-	-	12.71(12;27.14)	3.27(6;3.3)
PARACALANUS CRASSIROSTRIS(Copepodid)	-	0.05(3;0.07)	-	-	14.03(14;50.89)	0.87(8;0.85)
PARACALANUS QUASIMODO	3.23(4;1.32)	4.98(1;.)	4.87(3;2.36)	7.34(2;8.45)	-	0.89(2;0.35)
PARACALANUS ACULEATUS	2.04(5;1.89)	-	-	-	-	0.16(1;.)
PARACALANUS ACULEATUS(Copepodid)	0.22(1;.)	-	-	-	-	-
CALOCALANUS	-	0.83(2;1.07)	-	-	-	-
CALOCALANUS(Copepodid)	-	0.5(6;0.65)	-	0.61(1;.)	-	-
CALOCALANUS PAVO	0.96(7;0.63)	1.2(29;1.39)	1.5(11;1.04)	2.91(7;3.09)	2.8(8;2.96)	1.43(1;.)
CALOCALANUS PAVO(Copepodid)	-	0.4(9;0.49)	-	-	-	-
ACROCALANUS	2.55(8;5.29)	4.08(13;3.65)	37.62(19;76.88)	9.36(7;22.79)	0.36(1;.)	13.18(1;.)
ACROCALANUS(Copepodid)	-	-	-	2.5(1;.)	0.36(2;0)	-

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
UNDINULA(Copepodid)	-	-	-	7.86(3;10.88)	3.32(2;2.19)	-
UNDINULA VULGARIS	4.66(7;7.33)	3.97(23;5.32)	4.8(55;6.58)	11.25(66;18.07)	17.6(99;30.66)	6.27(82;12.08)
UNDINULA VULGARIS(Copepodid)	-	1.09(5;0.51)	0.36(16;0.31)	2.96(20;8.55)	2.24(21;4.16)	0.38(24;0.41)
NEOCALANUS GRACILIS	-	-	6.49(5;6.95)	-	0.75(1;.)	2.27(7;1.56)
NEOCALANUS ROBUSTIOR	-	-	-	1.98(1;.)	-	-
EUCALANIDAE	-	-	-	0.33(1;.)	0.11(1;.)	-
EUCALANIDAE(Copepodid)	-	-	-	-	-	-
EUCALANUS	-	3.11(2;1.32)	13.7(29;22.75)	218.4(27;545)	49.38(25;78.11)	-
EUCALANUS(Copepodid)	-	-	2.11(8;1.76)	34.5(27;22.2)	11.28(20;11.28)	-
EUCALANUS ATTENUATUS	0.56(3;0.14)	0.88(3;0.65)	0.47(1;.)	5.9(5;8.78)	3.24(8;2.79)	1.62(9;1.68)
EUCALANUS ATTENUATUS(Copepodid)	-	-	-	-	-	-
EUCALANUS ELONGATUS	-	-	-	22.57(1;.)	1.68(1;.)	2.81(5;3.58)
EUCALANUS ELONGATUS(Copepodid)	-	-	-	-	-	-
EUCALANUS PILEATUS	49.6(61;146.38)	46.29(120;180.9)	78.3(84;185.6)	108(80;303)	132.9(81;220.6)	24.37(112;43.59)
EUCALANUS PILEATUS(Copepodid)	3.3(28;6.97)	5.81(77;7.39)	39.4(34;62.01)	5.48(34;8.56)	5.38(33;7)	6.97(46;11.02)
EUCALANUS MONACHUS	-	-	-	-	0.43(2;0.4)	0.25(1;.)
EUCALANUS MONACHUS(Copepodid)	-	-	-	-	-	-
EUCALANUS CRASSUS	0.04(1;.)	-	-	0.66(2;0)	0.52(5;0.45)	0.57(1;.)
EUCALANUS MUCRONATUS	-	-	-	-	-	-
RHINCALANUS(Copepodid)	-	-	-	-	-	-
RHINCALANUS CORNUTUS	0.39(6;0.11)	0.64(8;0.43)	2.85(3;3.65)	2.28(11;2.32)	2.95(25;4.17)	2.2(29;2.39)
RHINCALANUS CORNUTUS(Copepodid)	-	-	-	-	-	-
RHINCALANUS NASUTUS	-	-	-	0.38(1;.)	5.23(2;5.01)	2.86(6;4.23)
PARACALANIDAE	-	-	0.18(1;.)	-	-	1.45(3;2.35)
PARACALANIDAE(Copepodid)	-	-	0.11(1;.)	-	-	-
PARACALANUS	1.26(3;1.38)	-	0.46(1;.)	0.32(1;.)	4.17(21;4.12)	0.18(3;0.21)
PARACALANUS(Copepodid)	-	0.07(1;.)	0.47(1;.)	2.11(1;.)	-	0.07(1;.)
PARACALANUS PARVUS	1.19(18;1.07)	1.16(46;1.7)	1.56(41;2.14)	2.95(34;4.89)	12.05(60;16.25)	10.32(107;25.56)
PARACALANUS PARVUS(Copepodid)	0.1(1;.)	0.34(6;0.23)	0.25(6;0.28)	0.79(1;.)	0.26(3;0.21)	0.53(18;0.59)
PARACALANUS CRASSIROSTRIS	1.72(4;2.64)	1.21(33;1.71)	0.65(5;0.76)	2.38(2;3.31)	3.75(12;6.52)	2.96(11;6.81)
PARACALANUS CRASSIROSTRIS(Copepodid)	1.1(13;2.1)	0.87(7;0.72)	0.28(1;.)	-	-	0.06(2;0.02)
PARACALANUS QUASIMODO	-	-	-	-	-	1.04(6;0.62)
PARACALANUS ACULEATUS	-	-	-	-	-	0.04(4;0.01)
PARACALANUS ACULEATUS(Copepodid)	-	-	-	-	-	-
CALOCALANUS	-	1.02(4;0.89)	-	-	-	-
CALOCALANUS(Copepodid)	-	-	-	-	-	-
CALOCALANUS PAVO	1.08(1;.)	0.98(5;0.9)	1.75(7;1.21)	3.61(14;7.49)	4(17;2.63)	2.18(21;2.12)
CALOCALANUS PAVO(Copepodid)	-	-	-	-	-	-
ACROCALANUS	0.21(3;0.13)	1.05(10;1.07)	4.79(21;5.62)	9.06(9;7.45)	16.86(13;11.95)	4.71(23;4.48)
ACROCALANUS(Copepodid)	-	0.17(1;.)	-	-	-	-

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
ACROCALANUS LONGICORNIS	3.86(13;2.99)	9.27(10;9.7)	8.08(16;15.4)	5.9(8;7.16)	13.98(6;22.43)	1.66(5;1.44)
ACROCALANUS LONGICORNIS(Copepodid)	-	-	-	-	-	-
ACROCALANUS ANDERSONI	-	-	-	-	-	-
ISCHNOCALANUS	-	0.25(1;.)	-	-	-	-
ISCHNOCALANUS PLUMULOSUS	2.87(3;2.08)	0.04(1;.)	-	5.61(2;1.68)	0.63(2;0.79)	-
PSEUDOCALANIDAE	-	-	-	-	-	-
CLAUSOCALANUS	-	-	-	-	-	0.47(1;.)
CLAUSOCALANUS ARCUICORNIS	13.91(21;19.44)	16.27(16;22.77)	39.18(25;65.33)	15.05(12;18.75)	19.4(8;21.99)	6.97(17;9.59)
CLAUSOCALANUS ARCUICORNIS(Copepodid)	-	-	-	-	-	0.16(1;.)
CLAUSOCALANUS FURCATUS	10.72(19;11.97)	8.12(12;6.56)	9.8(17;12.15)	4.99(26;4.37)	7.48(15;7.53)	66.3(11;209.7)
CLAUSOCALANUS FURCATUS(Copepodid)	-	-	-	0.7(4;0.9)	-	0.38(3;0.55)
AETIDEUS GIESBRECHTI	-	-	-	-	-	-
EUCHIRELLA(Copepodid)	-	1.29(1;.)	-	-	-	-
EUCHIRELLA ROSTRATA	0.07(1;.)	2.77(13;4.15)	1.23(8;2.14)	-	-	-
EUCHIRELLA VENUSTA	1.3(1;.)	-	-	-	-	-
EUCHAETA	-	-	-	-	-	-
EUCHAETA(Copepodid)	-	-	-	-	-	-
EUCHAETA MARINA	6.34(63;11.72)	13.71(54;22.25)	8.51(34;10.44)	3.64(16;3.57)	2.96(9;3.17)	3.46(15;3.82)
EUCHAETA MARINA(Copepodid)	1.35(18;1.95)	1.68(18;1.9)	-	3.51(7;2.62)	2.31(2;0.74)	1.14(6;0.93)
EUCHAETA TONSA	-	0.05(1;.)	-	-	-	-
VALDIVIELLA	9.93(5;14.63)	5.04(6;4.46)	58.8(2;51.4)	4.44(1;.)	0.64(2;0.77)	-
SCOLECITHRICELLA CTENOPUS	-	-	-	-	-	-
SCOLECITHRIX	-	-	0.24(2;0.1)	-	-	-
SCOLECITHRIX(Copepodid)	-	1.29(1;.)	-	-	-	-
SCOLECITHRIX DANAE	3.66(15;4.84)	2.88(33;4.01)	3.68(26;6.16)	2.95(7;3.51)	2.03(6;1.57)	2.82(4;1.75)
SCOLECITHRIX DANAE(Copepodid)	-	0.17(4;0.3)	-	-	-	-
SCOLECITHRIX BRADYI	0.02(1;.)	-	2.03(2;2.77)	-	-	-
SCOTTOCALANUS	-	0.77(2;0.71)	-	-	5.68(1;.)	8.03(1;.)
SCOTTOCALANUS HELENAE	-	0.05(1;.)	-	-	-	-
PLEUROMAMMA ABDOMINALIS	2.51(1;.)	0.04(1;.)	-	-	-	-
PLEUROMAMMA GRACILIS	1.17(2;1.31)	0.56(4;0.51)	-	-	-	-
PLEUROMAMMA ROBUSTA	-	0.47(1;.)	-	-	-	-
PLEUROMAMMA PISEKI	1.05(1;.)	0.27(1;.)	1.85(2;0.33)	0.37(1;.)	-	-
CENTROPAGES	-	-	-	-	-	-
CENTROPAGES(Copepodid)	-	-	-	-	-	-
CENTROPAGES FURCATUS	15.99(26;23.34)	10.23(19;14.5)	28.33(27;58.62)	67.1(51;180.1)	285.5(66;578.5)	193.1(57;435.9)
CENTROPAGES FURCATUS(Copepodid)	0.08(1;.)	0.42(4;0.55)	-	2.12(15;2.32)	20(28;17.51)	9.58(32;13.94)
CENTROPAGES HAMATUS	7.87(54;15.09)	9.44(48;10.92)	14.78(29;22.46)	4.08(1;.)	2.05(2;0.71)	-
CENTROPAGES HAMATUS(Copepodid)	0.44(17;0.39)	20.09(26;35.96)	-	-	-	-
CENTROPAGES VIOLACEUS	0.86(20;1.04)	1.42(5;0.85)	2.82(3;1.61)	6.54(1;.)	-	2.08(1;.)

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
ACROCALANUS LONGICORNIS	4.57(4;3.48)	1.33(9;0.88)	4.08(8;3.26)	2.72(27;3.77)	3.58(24;3.91)	3.05(19;2.99)
ACROCALANUS LONGICORNIS(Copepodid)	-	-	-	-	-	0.05(1;.)
ACROCALANUS ANDERSONI	-	-	1.36(1;.)	-	-	-
ISCHNOCALANUS	-	-	-	-	-	0.45(3;0.08)
ISCHNOCALANUS PLUMULOSUS	-	0.09(1;.)	0.84(1;.)	3.95(1;.)	4.02(1;.)	2.02(6;2.07)
PSEUDOCALANIDAE	-	-	-	-	-	0.3(3;0.22)
CLAUSOCALANUS	0.67(1;.)	-	-	-	-	0.58(2;0.44)
CLAUSOCALANUS ARCUICORNIS	14.34(7;28.91)	2.07(4;1.7)	1.54(3;1.54)	6.5(10;7.7)	5.45(18;7.29)	5.27(29;5.24)
CLAUSOCALANUS ARCUICORNIS(Copepodid)	-	-	-	-	-	-
CLAUSOCALANUS FURCATUS	19.92(2;24.76)	3.66(5;3.54)	2.06(10;2.01)	1.02(6;1.26)	9.2(19;12.2)	9.04(23;8.16)
CLAUSOCALANUS FURCATUS(Copepodid)	-	-	-	-	-	-
AETIDEUS GIESBRECHTI	-	-	-	-	-	0.86(1;.)
EUCHIRELLA(Copepodid)	-	-	-	-	-	-
EUCHIRELLA ROSTRATA	-	9.35(1;.)	-	29.74(2;40.66)	3.69(3;2.81)	4.34(1;.)
EUCHIRELLA VENUSTA	-	-	-	-	-	-
EUCHAETA	-	-	2.23(1;.)	-	-	-
EUCHAETA(Copepodid)	-	-	0.45(1;.)	-	-	-
EUCHAETA MARINA	10.94(11;17.28)	3.88(9;7.65)	4.66(9;5.12)	10.11(17;26.21)	7.26(49;10.17)	15.36(67;27.4)
EUCHAETA MARINA(Copepodid)	-	0.14(1;.)	-	0.99(1;.)	1.09(2;0.57)	0.28(18;0.39)
EUCHAETA TONSA	-	-	-	-	-	-
VALDIVIELLA	-	-	-	-	9.43(1;.)	1.77(2;0.95)
SCOLECITHRICELLA CTENOPUS	-	-	-	-	-	4.34(1;.)
SCOLECITHRIX	-	-	-	-	-	-
SCOLECITHRIX(Copepodid)	-	-	-	-	-	-
SCOLECITHRIX DANAE	0.63(3;0.38)	3.61(5;6.77)	-	3.51(6;1.87)	3.53(12;6.7)	3.65(24;2.88)
SCOLECITHRIX DANAE(Copepodid)	-	-	-	-	-	-
SCOLECITHRIX BRADYI	-	-	-	-	-	-
SCOTTOCALANUS	-	-	-	-	-	1.33(2;0.66)
SCOTTOCALANUS HELENAE	-	-	-	-	-	-
PLEUROMAMMA ABDOMINALIS	-	-	-	-	-	1.22(1;.)
PLEUROMAMMA GRACILIS	-	-	-	-	-	1.6(4;1.16)
PLEUROMAMMA ROBUSTA	-	-	-	-	-	-
PLEUROMAMMA PISEKI	-	-	-	-	-	-
CENTROPAGES	-	-	-	5.47(4;4.49)	0.22(1;.)	-
CENTROPAGES(Copepodid)	-	0.58(1;.)	5.43(16;7.62)	14.68(25;40.08)	16.93(19;21.12)	-
CENTROPAGES FURCATUS	179.4(64;316.6)	135.4(126;261.9)	168.9(117;245.1)	277(109;652.7)	78.5(107;118.7)	23.41(86;43.65)
CENTROPAGES FURCATUS(Copepodid)	68.5(35;118.7)	21.6(89;25.08)	14.62(42;21.35)	4.56(40;5.26)	4.7(32;5.01)	17.19(44;34.41)
CENTROPAGES HAMATUS	0.1(2;0.02)	-	-	-	4.73(4;3.43)	2.53(10;2.46)
CENTROPAGES HAMATUS(Copepodid)	-	-	-	-	-	-
CENTROPAGES VIOLACEUS	-	-	2.18(1;.)	-	-	0.71(2;0.56)

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
CENTROPAGES VIOLACEUS(Copepodid)	0.35(4;0.17)	-	-	-	-	-
CENTROPAGES VELIFICATUS	0.42(11;0.27)	2.62(2;3.34)	-	-	-	-
CENTROPAGES VELIFICATUS(Copepodid)	-	-	-	-	-	-
PSEUDODIAPTOMUS	0.06(1;.)	-	-	-	-	-
PSEUDODIAPTOMUS(Copepodid)	0.03(1;.)	-	-	-	-	-
PSEUDODIAPTOMUS CORONATUS	0.43(3;0.11)	-	-	0.3(3;0.29)	-	1.06(5;0.88)
PSEUDODIAPTOMUS CORONATUS(Copepodid)	-	-	-	-	-	0.59(3;0.62)
EURYTEMORA(Copepodid)	-	-	-	-	0.28(1;.)	-
EURYTEMORA AMERICANA	-	0.12(1;.)	-	-	-	-
EURYTEMORA HIRUNDOIDES	-	-	-	-	-	-
EURYTEMORA HIRUNDOIDES(Copepodid)	-	-	-	-	-	-
TEMORA	-	-	-	-	-	-
TEMORA(Copepodid)	-	-	-	0.45(1;.)	-	-
TEMORA STYLIFERA	5.59(63;8.68)	7.33(38;13.47)	9.36(31;16.24)	34.35(48;96.25)	33.39(50;49.6)	17.74(35;18.11)
TEMORA STYLIFERA(Copepodid)	2.61(25;4.74)	0.94(16;0.97)	-	2.6(22;1.99)	7.63(18;18.08)	4.32(20;4.94)
TEMORA TURBINATA	38.04(66;121.46)	38.2(56;75.12)	60(41;136.6)	71.6(57;132.3)	43.19(40;92.29)	45.57(32;84.18)
TEMORA TURBINATA(Copepodid)	1.96(26;2.87)	1.08(15;1.72)	-	5.88(30;13.05)	6.43(15;15.14)	3.04(8;5.57)
TEMOROPIA	-	-	0.09(1;.)	-	-	-
LUCICUTIA FLAVICORNIS	4.32(21;8.64)	4.38(28;7.41)	10.77(24;20.79)	7.05(7;8.29)	2.48(7;2.05)	14.54(4;12.69)
LUCICUTIA FLAVICORNIS(Copepodid)	-	0.53(7;0.57)	-	-	-	-
HALOPTILUS OXYCEPHALUS	-	0.67(2;0.89)	-	-	-	-
HALOPTILUS MUCRONATUS	-	-	-	-	-	-
CANDACIIDAE	3.56(2;1.72)	-	4.83(2;3.77)	4.61(1;.)	2.21(1;.)	1.02(2;1.42)
CANDACIIDAE(Copepodid)	3.15(1;.)	-	31.65(1;.)	1.57(3;0.73)	-	-
CANDACIA	3.2(6;3.47)	1.21(3;0.38)	2.43(2;3.34)	2.18(1;.)	1.89(1;.)	-
CANDACIA(Copepodid)	1.16(4;2.16)	0.22(1;.)	6.67(13;10.19)	1.29(1;.)	-	-
CANDACIA BIPINNATA	0.14(2;0.14)	-	-	-	-	-
CANDACIA BIPINNATA(Copepodid)	0.58(1;.)	-	-	-	-	-
CANDACIA PACHYDACTYLA	0.96(11;1.39)	0.57(2;0.29)	4.89(16;6.22)	0.37(1;.)	-	-
CANDACIA PACHYDACTYLA(Copepodid)	0.49(3;0.22)	-	-	-	-	-
CANDACIA SIMPLEX	-	-	-	-	-	-
CANDACIA CURTA	1.53(8;1.48)	1.22(21;2.05)	2(14;1.86)	1.83(7;1.45)	0.49(4;0.49)	5.44(2;3.66)
CANDACIA LONGIMANA	2.34(3;1.78)	1.77(3;1.67)	1.5(2;0.05)	-	2.21(1;.)	-
CANDACIA PAENELONGIMANA	4.39(1;.)	-	0.16(1;.)	2.53(2;2.94)	-	2.85(1;.)
CANDACIA VARICANS	1.31(1;.)	6.08(4;4.22)	1.85(4;1.87)	2.31(2;3)	4.42(1;.)	-
PARACANDACIA	4.37(2;4.33)	-	0.17(1;.)	-	-	-
PARACANDACIA BISPINOSA	-	0.65(2;0.74)	4.76(2;5.2)	-	-	-
PARACANDACIA SIMPLEX	1.21(11;1.89)	0.54(1;.)	0.02(1;.)	-	-	-
PONTELLIDAE	-	-	-	-	-	0.33(1;.)
PONTELLIDAE(Copepodid)	0.48(1;.)	0.37(1;.)	-	-	-	0.21(2;0.18)

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
CENTROPAGES VIOLACEUS(Copepodid)	-	-	-	-	-	-
CENTROPAGES VELIFICATUS	-	-	-	-	-	2.2(20;2.65)
CENTROPAGES VELIFICATUS(Copepodid)	-	-	-	-	-	0.93(18;1.15)
PSEUDODIAPTOMUS	-	-	-	-	-	-
PSEUDODIAPTOMUS(Copepodid)	-	-	-	-	-	-
PSEUDODIAPTOMUS CORONATUS	0.76(5;1.42)	0.32(12;0.38)	0.13(1;.)	-	-	0.04(1;.)
PSEUDODIAPTOMUS CORONATUS(Copepodid)	-	1.09(1;.)	-	-	-	-
EURYTEMORA(Copepodid)	-	-	-	-	-	0.07(1;.)
EURYTEMORA AMERICANA	-	-	-	-	-	-
EURYTEMORA HIRUNDOIDES	-	-	-	-	-	0.74(2;0.28)
EURYTEMORA HIRUNDOIDES(Copepodid)	-	-	-	-	-	0.13(1;.)
TEMORA	-	-	-	34.39(1;.)	-	0.06(1;.)
TEMORA(Copepodid)	-	-	0.41(1;.)	9(13;16.96)	7(24;6.88)	-
TEMORA STYLIFERA	16.37(38;26.18)	4.1(90;5.84)	7.24(90;12.03)	38.79(106;101.57)	11.88(89;15.71)	4.22(98;6.68)
TEMORA STYLIFERA(Copepodid)	2.2(16;5.3)	2.96(33;5.14)	0.58(16;0.47)	3.5(37;3.92)	0.2(1;.)	0.54(44;0.72)
TEMORA TURBINATA	94.2(43;286.1)	47.43(95;154.82)	35.82(79;89.24)	189.3(100;526.9)	196(107;397.2)	67.6(117;154.9)
TEMORA TURBINATA(Copepodid)	4.18(16;10.32)	3.25(59;4.64)	0.7(15;0.77)	7.47(37;10.63)	30.58(34;71.38)	6.17(59;11.29)
TEMOROPIA	-	-	-	-	-	-
LUCICUTIA FLAVICORNIS	10.43(5;9.58)	17.28(7;23.45)	3.62(6;2.72)	52.5(2;73.9)	7.4(10;7)	6.36(21;10.22)
LUCICUTIA FLAVICORNIS(Copepodid)	-	-	-	-	-	-
HALOPTILUS OXYCEPHALUS	-	-	-	-	-	-
HALOPTILUS MUCRONATUS	-	-	-	-	-	0.36(1;.)
CANDACIIDAE	5.22(3;1.91)	-	0.3(2;0.01)	2.79(2;0.6)	2.01(1;.)	4.59(6;4.99)
CANDACIIDAE(Copepodid)	-	0.68(4;0.28)	-	1.42(2;0.79)	-	-
CANDACIA	-	0.2(2;0.22)	2.39(1;.)	0.04(1;.)	0.48(4;0.14)	1.06(3;0.75)
CANDACIA(Copepodid)	-	1.14(7;0.65)	-	0.99(1;.)	-	0.94(1;.)
CANDACIA BIPINNATA	-	-	-	3.22(4;3.66)	0.5(6;0.68)	-
CANDACIA BIPINNATA(Copepodid)	-	-	-	-	-	-
CANDACIA PACHYDACTYLA	-	1.4(2;1.88)	-	0.52(2;0.38)	5.5(20;8.46)	1.18(11;1.03)
CANDACIA PACHYDACTYLA(Copepodid)	-	-	-	-	-	-
CANDACIA SIMPLEX	-	-	-	-	-	1.36(1;.)
CANDACIA CURTA	4.87(1;.)	0.97(8;0.91)	0.71(2;0.58)	0.85(12;1.3)	1.79(7;1.27)	3.48(7;2.74)
CANDACIA LONGIMANA	7.74(1;.)	0.38(1;.)	0.47(1;.)	1.98(1;.)	0.62(1;.)	2.58(3;1.02)
CANDACIA PAENELONGIMANA	2.45(2;0.05)	-	1.12(2;0.39)	-	0.75(1;.)	1.84(7;1.55)
CANDACIA VARICANS	4.96(1;.)	-	-	-	-	1.68(4;1.22)
PARACANDACIA	-	-	-	-	2.61(1;.)	1.1(1;.)
PARACANDACIA BISPINOSA	-	-	-	-	-	0.18(1;.)
PARACANDACIA SIMPLEX	-	-	0.47(1;.)	1.24(3;0.97)	-	1.22(1;.)
PONTELLIDAE	-	3.11(2;2.35)	0.14(1;.)	0.32(1;.)	-	0.14(1;.)
PONTELLIDAE(Copepodid)	0.06(2;0.03)	-	-	-	-	0.24(9;0.13)

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
LABIDOCERA	5.23(6;6.26)	-	30.73(1;.)	-	38.7(4;54.93)	-
LABIDOCERA(Copepodid)	-	-	16.19(9;19.26)	-	-	-
LABIDOCERA AESTIVA	7.02(64;9.58)	41.99(51;52.72)	27.8(35;39.92)	72.2(53;131.9)	47.08(62;60.39)	39.03(54;62.22)
LABIDOCERA AESTIVA(Copepodid)	3.96(29;5.65)	8.31(20;17.16)	-	113.5(34;178.9)	51(26;65.8)	28.64(34;41.51)
LABIDOCERA ACUTIFRONS	0.29(1;.)	0.03(1;.)	-	2.67(1;.)	-	-
LABIDOCERA NERII	81.8(1;.)	0.57(2;0.78)	5.87(9;7.04)	216.9(7;209)	24.99(13;33.44)	171.3(6;202.6)
PONTELLA	-	-	-	-	-	-
PONTELLA(Copepodid)	0.42(4;0.31)	-	-	1.25(1;.)	0.4(1;.)	0.82(1;.)
PONTELLA PENNATA	-	-	-	-	-	-
PONTELLA MEADII	-	-	-	-	-	0.51(1;.)
PONTELLA MEADII(Copepodid)	-	-	-	-	-	-
PONTELLA SECURIFER	-	0.78(1;.)	2.17(1;.)	-	-	-
PONTELLA SPINIPES	-	-	-	-	-	-
PONTELLA ATLANTICA	0.28(1;.)	-	0.21(1;.)	-	-	-
PONTELLA ATLANTICA(Copepodid)	-	-	-	-	-	-
PONTELLA MIMOCERAMI	-	-	0.59(2;0.34)	-	-	-
PONTELLINA PLUMATA	0.66(5;0.26)	2.54(1;.)	0.3(3;0.11)	-	0.32(1;.)	2.08(1;.)
PONTELLINA PLUMATA(Copepodid)	0.73(2;0.35)	-	-	-	-	-
ANOMALOCERA	-	-	-	-	-	-
ANOMALOCERA(Copepodid)	-	-	-	-	-	-
ANOMALOCERA PATERSONI	-	-	-	-	-	-
ANOMALOCERA ORNATA	7.94(9;9.93)	0.56(2;0.27)	0.4(1;.)	10.02(1;.)	-	-
ANOMALOCERA ORNATA(Copepodid)	0.63(4;0.42)	-	-	-	-	-
CALANOPIA AMERICANA	3.97(8;6.05)	5.62(6;4.46)	6.53(11;7.78)	8.88(1;.)	5.68(3;5.27)	-
CALANOPIA AMERICANA(Copepodid)	-	-	-	-	-	-
PONTELLOPSIS	-	0.86(1;.)	-	-	-	-
PONTELLOPSIS(Copepodid)	-	-	-	-	-	-
PONTELLOPSIS VILLOSA	-	-	-	-	-	-
PONTELLOPSIS VILLOSA(Copepodid)	-	-	-	-	-	-
PONTELLOPSIS REGALIS	-	-	-	-	-	-
PONTELLOPSIS PERSPICAX	-	-	-	-	-	-
PONTELLOPSIS PERSPICAX(Copepodid)	-	-	-	-	-	-
BATHYPONTIA	-	-	1.86(1;.)	-	-	-
ACARTIA	-	-	0.36(1;.)	-	0.65(1;.)	-
ACARTIA(Copepodid)	-	-	3.78(1;.)	-	-	-
ACARTIA DANAE	1.11(6;1.08)	4.53(4;4.04)	1.41(4;1.6)	6.34(4;9.35)	2.19(4;1.64)	4.23(4;4.4)
ACARTIA TONSA	72.9(67;156.8)	59(61;163.5)	92.3(42;105.7)	265(54;544.7)	451.1(72;1126.5)	264.1(55;704)
ACARTIA TONSA(Copepodid)	1.84(24;3.31)	36.09(29;125.5)	-	6.58(24;10.01)	19.19(25;65.9)	80.5(32;157.3)
ACARTIA BERMUDENSIS	0.91(1;.)	-	-	-	-	-
ACARTIA SPINATA	-	-	-	-	-	-

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
LABIDOCERA	0.15(1;.)	0.72(1;.)	93.3(3;78.5)	21.98(3;33.09)	-	0.6(2;0.79)
LABIDOCERA(Copepodid)	-	-	5.17(21;4.33)	26.84(25;29.55)	5.5(24;7.34)	-
LABIDOCERA AESTIVA	63.4(48;248.6)	15.94(84;28.16)	55.5(105;154)	134(98;221.1)	18.69(88;38.67)	13.36(105;27.03)
LABIDOCERA AESTIVA(Copepodid)	2.96(27;3.58)	21.54(70;46.01)	4.42(43;4.87)	5.86(41;6.88)	1.56(22;1.93)	3.79(67;8.46)
LABIDOCERA ACUTIFRONS	0.15(1;.)	0.89(1;.)	-	1.05(1;.)	-	3.21(3;4.41)
LABIDOCERA NERII	11.96(10;21.32)	5.51(4;5.24)	15.2(11;12.55)	15.42(11;13.2)	5.89(3;5.67)	9.37(10;11.26)
PONTELLA	-	-	0.29(2;0.27)	0.54(3;0.63)	0.64(4;0.73)	0.2(4;0.24)
PONTELLA(Copepodid)	0.52(3;0.07)	-	0.18(4;0.12)	0.1(2;0.09)	-	0.34(4;0.2)
PONTELLA PENNATA	0.82(2;0.58)	2.1(3;2.97)	-	-	-	-
PONTELLA MEADII	-	34.11(1;.)	0.7(6;0.62)	0.8(2;0.23)	0.27(1;.)	0.9(2;1.24)
PONTELLA MEADII(Copepodid)	-	-	0.08(1;.)	-	-	-
PONTELLA SECURIFER	-	-	-	0.14(1;.)	0.27(1;.)	0.05(1;.)
PONTELLA SPINIPES	-	-	0.08(1;.)	-	0.76(1;.)	0.02(2;0.01)
PONTELLA ATLANTICA	-	1.85(1;.)	-	-	-	0.06(4;0.07)
PONTELLA ATLANTICA(Copepodid)	-	-	-	-	-	0.13(1;.)
PONTELLA MIMOCERAMI	-	-	0.13(2;0.14)	-	3.28(1;.)	-
PONTELLINA PLUMATA	-	0.03(1;.)	0.29(3;0.18)	3.4(5;5.47)	2.06(2;0.08)	0.32(13;0.55)
PONTELLINA PLUMATA(Copepodid)	-	1.1(1;.)	0.08(1;.)	-	-	0.05(7;0.02)
ANOMALOCERA	-	-	-	-	-	1.78(1;.)
ANOMALOCERA(Copepodid)	-	-	-	-	-	0.85(2;0.5)
ANOMALOCERA PATERSONI	-	-	-	-	-	0.89(1;.)
ANOMALOCERA ORNATA	-	-	-	-	-	0.22(3;0.3)
ANOMALOCERA ORNATA(Copepodid)	-	-	-	-	-	-
CALANOPIA AMERICANA	1.73(19;3.41)	3.12(40;8.59)	3.11(58;4)	4.06(68;6.15)	4.38(41;6.75)	2.01(37;3.01)
CALANOPIA AMERICANA(Copepodid)	-	0.69(3;0.65)	-	0.49(7;0.31)	0.19(1;.)	0.13(10;0.09)
PONTELLOPSIS	-	-	-	-	3.28(1;.)	-
PONTELLOPSIS(Copepodid)	-	-	-	-	-	0.02(1;.)
PONTELLOPSIS VILLOSA	0.15(2;0.01)	0.04(1;.)	0.23(2;0.11)	0.28(3;0.1)	0.08(1;.)	0.04(3;0.02)
PONTELLOPSIS VILLOSA(Copepodid)	-	-	-	-	-	0.05(1;.)
PONTELLOPSIS REGALIS	-	-	-	-	-	0.56(2;0.77)
PONTELLOPSIS PERSPICAX	-	-	-	-	-	0.05(2;0.01)
PONTELLOPSIS PERSPICAX(Copepodid)	-	-	-	-	-	0.05(1;.)
BATHYPONTIA	-	-	-	-	-	-
ACARTIA	-	-	-	0.45(1;.)	0.2(1;.)	0.21(2;0.18)
ACARTIA(Copepodid)	-	-	3.63(15;3.12)	2.89(11;2.51)	0.56(3;0.68)	-
ACARTIA DANAE	5.36(5;4.01)	4.42(3;4.76)	2.88(2;1.73)	0.99(1;.)	1(2;0.91)	1.19(11;1.16)
ACARTIA TONSA	100.1(72;233.3)	44.06(123;85.61)	19.49(100;47.98)	47.01(94;99.9)	39.16(98;111.59)	34.44(116;75.45)
ACARTIA TONSA(Copepodid)	7.39(35;10.55)	2.91(61;4.37)	1.72(16;2.52)	1.8(15;2.93)	1.42(27;1.44)	4.99(46;11.6)
ACARTIA BERMUDENSIS	-	-	-	-	-	-
ACARTIA SPINATA	-	-	5.39(1;.)	-	-	-

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
ACARTIA DISCAUDATA	1.3(1;.)	-	-	-	-	-
TORTANUS	-	-	-	-	-	-
TORTANUS SETACAUDATUS	-	-	-	-	-	-
HARPACTICOIDA(Nauplius)	-	0.03(1;.)	-	-	1.39(2;0.63)	-
HARPACTICOIDA	-	-	-	0.17(3;0.07)	0.13(1;.)	0.59(3;0.61)
HARPACTICOIDA(Copepodid)	-	-	-	-	-	1.23(2;1.53)
LONGIPEDIA	-	-	-	-	-	-
SCOTTOLANA CANADENSIS	-	-	-	-	-	-
MICROSETELLA	-	-	-	-	-	-
EUTERPINA ACUTIFRONS	0.05(2;0.03)	-	-	0.93(4;0.72)	2.23(15;3.35)	1.67(2;1.2)
EUTERPINA ACUTIFRONS(Copepodid)	-	-	-	2.22(1;.)	1.31(5;1.55)	-
AEGISTHUS	-	-	3.75(1;.)	-	8.85(2;5.65)	1.95(2;0.48)
MACROSETELLA GRACILIS	0.19(7;0.13)	0.13(3;0.11)	1.11(2;1.01)	1.14(2;1.53)	1.26(1;.)	-
MACROSETELLA GRACILIS(Copepodid)	-	-	-	-	-	-
OCULOSETELLA GRACILIS	-	-	-	-	-	-
MIRACIA EFFERATA	-	0.11(1;.)	-	-	-	-
CYCLOPOIDA(Nauplius)	-	-	-	-	-	-
CYCLOPOIDA	-	-	0.66(1;.)	14.03(5;19.07)	4.42(1;.)	15.91(2;22.11)
CYCLOPOIDA(Copepodid)	-	-	-	0.95(3;0.94)	-	0.07(1;.)
ONCAEIDAE	-	-	-	0.95(1;.)	-	1.48(2;0.77)
CONAEA	0.24(1;.)	1.1(3;0.46)	3.5(4;3.21)	-	-	-
ONCAEA	0.04(2;0.02)	-	1.06(1;.)	-	2.08(2;0.19)	-
ONCAEA(Copepodid)	-	-	-	-	0.02(1;.)	-
ONCAEA MEDITERRANEA	1.89(50;3.57)	2.42(36;2.67)	2.46(22;2.96)	7.8(30;13.57)	7.28(25;10.33)	4.66(20;7.58)
ONCAEA MEDITERRANEA(Copepodid)	-	-	-	-	-	-
ONCAEA VENUSTA	0.27(1;.)	1.25(4;1.18)	-	2.87(2;2.13)	-	0.62(2;0.53)
CORYCAEUS	5.37(49;8.42)	4.52(51;7.9)	12.29(19;23)	12.06(32;23.11)	30.5(49;52.13)	21.59(23;19.97)
CORYCAEUS(Copepodid)	0.4(5;0.41)	0.58(8;0.68)	-	1.43(7;2.25)	1.23(7;1.66)	-
CORYCAEUS AMAZONICUS	1.24(10;1.17)	0.47(16;0.54)	-	-	-	-
CORYCAEUS AMAZONICUS(Copepodid)	0.33(3;0.16)	-	-	-	-	-
CORYCAEUS ELONGATUS	0.56(1;.)	0.11(1;.)	-	-	-	-
CORYCAEUS LAUTUS	0.87(4;0.71)	-	-	-	-	-
CORYCAEUS SPECIOSUS	0.91(3;0.9)	-	-	-	9.33(1;.)	-
CORYCAEUS SPECIOSUS(Copepodid)	-	-	-	-	-	-
CORYCAEUS CLAUSI	-	-	-	-	-	-
CORYCAEUS FLACCUS	0.73(1;.)	0.36(5;0.39)	-	-	-	-
CORYCAEUS FLACCUS(Copepodid)	-	0.32(2;0.43)	-	-	-	-
CORYCAEUS LATUS	0.48(5;0.46)	0.12(4;0.09)	-	-	-	-
CORYCAEUS LIMBATUS	1.3(1;.)	-	-	-	-	-
CORYCAEUS SUBLATUS	1.12(15;1.24)	0.6(15;1.28)	1.36(7;0.89)	50.7(13;67)	7.54(25;15.59)	9.17(34;14.28)

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
ACARTIA DISCAUDATA	-	-	-	-	-	-
TORTANUS	-	1.1(1;.)	-	-	-	-
TORTANUS SETACAUDATUS	-	1.22(1;.)	-	-	-	-
HARPACTICOIDA(Nauplius)	-	-	0.07(4;0.05)	0.34(1;.)	-	-
HARPACTICOIDA	-	-	0.25(4;0.13)	0.54(1;.)	0.41(3;0.34)	-
HARPACTICOIDA(Copepodid)	-	-	-	0.34(1;.)	-	-
LONGIPEDIA	-	-	-	-	0.08(1;.)	-
SCOTTOLANA CANADENSIS	0.54(1;.)	-	-	-	-	-
MICROSETELLA	-	-	-	-	1.68(1;.)	-
EUTERPINA ACUTIFRONS	-	0.79(19;1.06)	0.55(5;0.68)	3.34(10;6.09)	0.31(5;0.25)	-
EUTERPINA ACUTIFRONS(Copepodid)	-	1.17(3;1.55)	0.28(1;.)	-	-	0.03(1;.)
AEGISTHUS	-	-	-	11.28(1;.)	0.12(1;.)	-
MACROSETELLA GRACILIS	-	0.36(3;0.34)	0.36(4;0.19)	1.18(10;1.21)	2.38(12;1.96)	0.62(22;1.14)
MACROSETELLA GRACILIS(Copepodid)	-	-	-	-	-	0.18(1;.)
OCULOSETELLA GRACILIS	-	-	0.04(1;.)	1.92(1;.)	-	-
MIRACIA EFFERATA	-	-	-	-	-	-
CYCLOPOIDA(Nauplius)	0.48(2;0.21)	-	-	-	-	-
CYCLOPOIDA	-	0.58(18;0.62)	0.21(1;.)	-	1.44(5;2.61)	1.22(1;.)
CYCLOPOIDA(Copepodid)	-	-	0.03(1;.)	-	-	1.41(1;.)
ONCAEIDAE	-	-	-	-	-	-
CONAEA	-	-	-	1.42(2;0.79)	1.12(1;.)	2.46(2;0.36)
ONCAEA	0.75(2;0.05)	-	-	-	0.17(1;.)	-
ONCAEA(Copepodid)	-	-	-	-	-	-
ONCAEA MEDITERRANEA	1.71(7;2.18)	1.88(14;4.39)	2.19(5;1.31)	3.42(28;6.16)	4.42(54;9.94)	1.53(50;2.94)
ONCAEA MEDITERRANEA(Copepodid)	-	-	-	-	0.61(3;0.6)	0.43(1;.)
ONCAEA VENUSTA	0.05(1;.)	0.02(1;.)	0.03(1;.)	4.77(1;.)	3.28(2;2.75)	0.02(1;.)
CORYCAEUS	20.13(19;24.89)	11.51(36;24.61)	15.68(68;22.78)	8.2(62;11.16)	9.7(83;9.66)	11.33(65;14.42)
CORYCAEUS(Copepodid)	-	1.96(1;.)	1.17(7;0.89)	-	0.7(9;0.53)	0.92(13;1.33)
CORYCAEUS AMAZONICUS	-	-	-	-	-	6.32(4;5.64)
CORYCAEUS AMAZONICUS(Copepodid)	-	-	-	-	-	1.66(2;1.05)
CORYCAEUS ELONGATUS	-	-	-	-	-	-
CORYCAEUS LAUTUS	-	1.1(1;.)	-	-	-	0.08(2;0.05)
CORYCAEUS SPECIOSUS	-	0.17(1;.)	0.46(1;.)	1.08(22;1.58)	0.25(8;0.1)	0.11(4;0.16)
CORYCAEUS SPECIOSUS(Copepodid)	-	-	-	0.99(1;.)	-	-
CORYCAEUS CLAUSI	-	-	5.38(5;7.29)	2.55(4;1.41)	-	-
CORYCAEUS FLACCUS	-	-	-	-	-	-
CORYCAEUS FLACCUS(Copepodid)	-	-	-	-	-	-
CORYCAEUS LATUS	-	0.93(5;0.83)	0.37(2;0.28)	2.35(3;1.66)	-	0.08(6;0.04)
CORYCAEUS LIMBATUS	-	0.34(1;.)	-	0.99(1;.)	-	-
CORYCAEUS SUBLATUS	10.94(35;15.59)	5.05(82;6.5)	4.72(37;6.79)	6.48(48;12.59)	5.24(18;9.18)	4.46(30;13.15)

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
CORYCAEUS SUBLATUS(Copepodid)	-	0.28(9;0.43)	-	1.6(13;1.9)	6.74(20;12.97)	5.6(26;8.98)
CORYCAEUS OVALIS	0.14(1;.)	-	-	-	-	-
FARRANULA	1.3(1;.)	-	-	-	-	-
FARRANULA(Copepodid)	0.65(1;.)	-	-	-	-	-
FARRANULA GRACILIS	0.34(7;0.22)	0.16(6;0.23)	-	0.06(1;.)	-	-
FARRANULA GRACILIS(Copepodid)	0.88(1;.)	0.04(1;.)	-	-	-	-
FARRANULA ROSTRATA	-	0.12(2;0.01)	-	-	-	-
ERGASILUS(Copepodid)	-	-	-	-	-	-
SAPHIRELLA	0.91(1;.)	-	-	-	-	-
SAPHIRELLA TROPICA	-	-	-	-	-	-
OITHONA	3.64(20;6.62)	2(31;2.71)	25.99(8;24.54)	7.06(23;10.79)	8.07(15;8.72)	4.61(16;5.32)
OITHONA(Copepodid)	0.48(1;.)	0.13(6;0.08)	-	1.1(3;0.97)	11.36(5;24.56)	0.07(2;0.07)
OITHONA PLUMIFERA	1.36(20;3.25)	1.28(11;1.1)	2.06(12;4.5)	19.86(5;14.77)	-	1.83(3;1.66)
OITHONA PLUMIFERA(Copepodid)	-	-	-	-	-	-
OITHONA SIMILIS	-	-	-	-	-	-
OITHONA BREVICORNIS	-	2.67(2;3.27)	1.2(1;.)	-	7.26(3;8.33)	-
OITHONA BREVICORNIS(Copepodid)	-	-	-	-	0.87(1;.)	-
OITHONA COLCARVA	0.22(2;0.09)	-	-	-	-	4.1(7;7.62)
OITHONA COLCARVA(Copepodid)	-	-	-	-	0.34(1;.)	6.37(9;9.84)
SAPPHIRINA	2.03(5;3.18)	0.2(4;0.08)	6.56(1;.)	0.56(1;.)	-	-
SAPPHIRINA(Copepodid)	0.09(3;0.04)	0.27(8;0.37)	-	3.58(6;3.25)	0.25(2;0.27)	-
SAPPHIRINA NIGROMACULATA	1.4(11;1.4)	1.34(30;2.22)	3.71(17;4.02)	5.98(12;5.62)	8.12(13;9.34)	6.54(15;5.93)
SAPPHIRINA NIGROMACULATA(Copepodid)	0.19(2;0.07)	0.12(2;0.06)	-	9.4(1;.)	7.52(1;.)	1.26(1;.)
COPILIA	1.32(3;0.51)	-	-	-	-	-
COPILIA MIRABILIS	0.35(3;0.36)	0.36(8;0.55)	-	1.31(2;0.8)	1.84(1;.)	-
COPILIA MIRABILIS(Copepodid)	-	-	-	-	-	-
COPILIA QUADRATA	-	-	-	-	-	-
CALIGOIDA	-	0.01(1;.)	-	0.53(7;0.43)	-	0.07(1;.)
CALIGOIDA(Copepodid)	-	0.03(1;.)	-	-	-	-
CALIGUS	-	0.03(2;0.01)	-	-	-	-
ARGULUS	-	-	-	-	-	-
CIRRIPEDIA(Nauplius)	3.08(36;7.88)	2.39(31;3.2)	27.92(8;35.01)	151.9(30;524.3)	27.93(33;75.89)	9.58(27;17.8)
CIRRIPEDIA(Larva)	14(3;20.95)	-	75.9(3;55.5)	152(2;88.7)	-	-
CIRRIPEDIA	-	-	-	-	-	-
CIRRIPEDIA(Cypris)	0.55(4;0.91)	0.14(5;0.09)	-	1.11(4;1.64)	0.13(1;.)	0.65(3;0.41)
MYSIDACEA	0.07(1;.)	-	-	-	-	-
MYSIDACEA(Mysis)	-	2.19(1;.)	-	-	-	-
MYSIDAE	-	-	-	-	-	0.18(1;.)
MYSIDAE(Mysis)	-	-	-	-	-	-
MYSIDOPSIS(Juvenile)	-	1.19(7;2.55)	-	0.14(4;0.08)	0.73(1;.)	0.18(3;0.02)

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
CORYCAEUS SUBLATUS(Copepodid)	3.12(30;6.54)	2.39(20;3.82)	0.34(11;0.23)	0.4(5;0.33)	-	-
CORYCAEUS OVALIS	-	0.61(2;0.72)	-	0.35(6;0.25)	-	0.05(1;.)
FARRANULA	-	-	-	-	0.62(1;.)	-
FARRANULA(Copepodid)	-	-	-	-	-	-
FARRANULA GRACILIS	-	0.84(5;0.63)	0.24(2;0.1)	-	-	-
FARRANULA GRACILIS(Copepodid)	-	-	-	-	-	-
FARRANULA ROSTRATA	-	-	0.18(1;.)	-	-	-
ERGASILUS(Copepodid)	-	-	0.04(1;.)	-	-	-
SAPHIRELLA	-	-	-	-	-	4.07(1;.)
SAPHIRELLA TROPICA	-	-	-	2.78(1;.)	-	-
OITHONA	6.89(13;5.12)	11.48(26;13.62)	3.78(26;4.24)	9.02(16;9.5)	5.8(34;7.97)	7.9(34;13.79)
OITHONA(Copepodid)	-	3.55(1;.)	3.26(20;2.07)	2.13(2;2.18)	-	7.45(1;.)
OITHONA PLUMIFERA	1.05(3;1.53)	0.5(12;0.65)	1.54(8;1.17)	5.85(6;11.57)	0.6(25;0.86)	1.15(15;1.86)
OITHONA PLUMIFERA(Copepodid)	-	-	-	-	-	0.09(1;.)
OITHONA SIMILIS	-	-	0.88(3;0.4)	-	-	-
OITHONA BREVICORNIS	-	0.52(1;.)	5.79(13;7.43)	1.02(3;1.03)	-	3.52(2;4.77)
OITHONA BREVICORNIS(Copepodid)	-	-	-	-	-	0.14(1;.)
OITHONA COLCARVA	1.41(17;2.11)	16.84(46;28.19)	0.73(7;0.59)	1.67(2;0.44)	3.04(4;4.29)	1.94(3;3.24)
OITHONA COLCARVA(Copepodid)	0.79(14;1.16)	3.5(11;5.89)	0.84(1;.)	-	-	-
SAPPHIRINA	-	0.58(1;.)	-	1.58(1;.)	0.33(1;.)	-
SAPPHIRINA(Copepodid)	-	-	-	1.16(1;.)	-	-
SAPPHIRINA NIGROMACULATA	6.96(8;7.07)	1.88(38;3.53)	2.6(21;2.16)	3.49(49;6.39)	3.2(38;4.63)	0.69(8;0.64)
SAPPHIRINA NIGROMACULATA(Copepodid)	-	0.3(1;.)	-	0.41(2;0.12)	0.13(4;0.11)	0.06(1;.)
COPILIA	-	-	0.63(1;.)	3.87(1;.)	0.47(3;0.08)	0.86(1;.)
COPILIA MIRABILIS	-	0.65(18;0.7)	3.01(1;.)	1.7(12;3.89)	1.84(8;4.01)	-
COPILIA MIRABILIS(Copepodid)	-	0.71(2;0.26)	-	-	0.58(1;.)	-
COPILIA QUADRATA	-	-	-	-	2.11(4;0.93)	-
CALIGOIDA	-	-	-	-	0.06(3;0.01)	0.05(3;0.03)
CALIGOIDA(Copepodid)	-	0.26(1;.)	-	-	-	0.34(1;.)
CALIGUS	-	-	0.05(1;.)	-	-	-
ARGULUS	-	-	-	-	0.1(1;.)	-
CIRRIPEDIA(Nauplius)	1.44(28;3.94)	3.4(81;5.21)	2.61(44;3.4)	2.27(30;2.43)	0.7(18;0.66)	30.63(37;54.01)
CIRRIPEDIA(Larva)	-	3.6(3;4.11)	19.14(1;.)	1.15(5;1.43)	14.03(8;12.34)	1.47(2;1.07)
CIRRIPEDIA	-	-	0.41(1;.)	-	-	-
CIRRIPEDIA(Cypris)	0.18(1;.)	0.5(22;0.56)	2.85(14;3.72)	1.63(13;1.03)	0.44(7;0.43)	-
MYSIDACEA	-	-	0.46(2;0.61)	-	-	0.59(2;0.8)
MYSIDACEA(Mysis)	-	-	-	-	-	-
MYSIDAE	0.39(1;.)	-	-	-	-	-
MYSIDAE(Mysis)	-	0.34(1;.)	-	-	-	-
MYSIDOPSIS(Juvenile)	-	-	-	0.25(1;.)	0.08(3;0.09)	0.09(1;.)

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
MYSIDOPSIS	-	0.03(2;0.03)	-	-	-	-
MYSIDOPSIS BIGELOWI(Juvenile)	-	-	-	-	-	-
MYSIDOPSIS BIGELOWI	0.14(3;0.08)	0.55(5;0.61)	0.02(1;.)	-	-	0.54(6;0.62)
MYSIDOPSIS BIGELOWI(Mysis)	-	-	-	-	-	0.01(1;.)
MYSIDOPSIS BAHIA(Juvenile)	-	0.69(1;.)	-	-	-	-
MYSIDOPSIS BAHIA	0.04(1;.)	4.5(8;10.33)	-	0.15(3;0.08)	-	-
PROMYSIS ATLANTICA(Juvenile)	0.65(3;0.6)	-	-	10.28(2;3.2)	0.32(1;.)	5.4(1;.)
PROMYSIS ATLANTICA	0.28(5;0.38)	0.71(9;0.97)	0.15(4;0.08)	13.76(16;20.28)	2.62(4;3.92)	2.3(7;3.84)
PROMYSIS ATLANTICA(Protozoea)	-	-	-	-	-	-
PROMYSIS ATLANTICA(Mysis)	-	-	-	-	-	63.5(1;.)
SIRIELLA THOMPSONI	-	-	-	-	-	-
BOWMANIELLA(Juvenile)	-	0.69(1;.)	-	-	-	-
BRASILOMYSIS CASTROI(Juvenile)	-	-	-	-	-	-
BRASILOMYSIS CASTROI	-	0.55(5;0.52)	0.08(4;0.04)	0.06(2;0.02)	-	-
METAMYSIDOPSIS(Juvenile)	-	-	-	-	-	-
METAMYSIDOPSIS	-	-	-	-	-	-
METAMYSIDOPSIS SWIFTI(Juvenile)	-	-	-	-	-	-
CUMACEA(Juvenile)	-	-	-	-	1.55(1;.)	-
OXYUROSTYLIS SMITHI(Juvenile)	-	-	-	-	-	-
OXYUROSTYLIS SMITHI	-	0.67(4;0.57)	-	1.91(7;1.51)	10.14(5;19)	0.19(4;0.06)
TANAIDACEA	-	-	-	-	-	-
ISOPODA(Juvenile)	-	0.02(1;.)	0.02(1;.)	-	-	-
ISOPODA	-	-	6.42(1;.)	3.98(1;.)	-	-
FLABELLIFERA(ISOPODA)(Juvenile)	-	-	-	-	-	-
SPHAEROMATIDAE(Juvenile)	-	-	-	0.29(1;.)	-	-
CYMOTHOIDAE(Juvenile)	-	-	-	-	-	0.02(1;.)
AEGATHOA	-	-	-	-	-	-
MUNNA	-	-	-	-	0.61(1;.)	-
EPICARIDEA(Juvenile)	-	-	-	-	-	-
AMPHIPODA(Juvenile)	-	-	-	-	-	-
AMPHIPODA	0.93(7;0.82)	-	21.3(7;44.52)	12.83(7;10.02)	2.31(3;2.36)	42.96(8;51.97)
GAMMARIDEA	-	-	-	-	1.55(1;.)	-
ATYLUS UROCARINATUS	-	-	-	-	-	-
BATEA CATHARINENSIS	-	0.33(3;0.32)	-	-	-	-
COROPHIIDAE	0.07(1;.)	0.73(1;.)	-	-	-	-
CERAPUS	0.1(1;.)	-	-	-	-	-
CERAPUS TUBULARIS	-	-	-	-	-	-
COROPHIUM(Juvenile)	0.05(1;.)	0.04(5;0.02)	-	0.05(1;.)	1.66(2;1.78)	0.01(1;.)
COROPHIUM	0.05(1;.)	0.08(1;.)	-	-	-	-
COROPHIUM ACHERUSICUM	0.11(3;0.07)	0.36(2;0.47)	0.02(1;.)	-	-	-

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
MYSIDOPSIS	-	-	-	-	-	-
MYSIDOPSIS BIGELOWI(Juvenile)	-	-	-	-	-	0.17(1;.)
MYSIDOPSIS BIGELOWI	-	-	0.02(1;.)	0.06(1;.)	0.35(7;0.55)	0.2(3;0.11)
MYSIDOPSIS BIGELOWI(Mysis)	-	-	-	-	-	-
MYSIDOPSIS BAHIA(Juvenile)	-	-	-	-	-	-
MYSIDOPSIS BAHIA	-	-	-	-	0.56(3;0.56)	0.56(3;0.55)
PROMYSIS ATLANTICA(Juvenile)	9.01(1;.)	-	0.03(1;.)	-	49.58(6;50.36)	0.17(1;.)
PROMYSIS ATLANTICA	1.31(5;0.51)	0.03(1;.)	0.13(3;0.14)	2.3(13;3.2)	5.18(38;22.14)	2.42(48;3.8)
PROMYSIS ATLANTICA(Protozoea)	-	-	0.9(1;.)	-	-	-
PROMYSIS ATLANTICA(Mysis)	-	-	-	-	-	-
SIRIELLA THOMPSONI	-	-	-	1.53(1;.)	-	0.01(1;.)
BOWMANIELLA(Juvenile)	-	-	-	-	-	-
BRASILOMYSIS CASTROI(Juvenile)	-	-	-	-	-	2.32(1;.)
BRASILOMYSIS CASTROI	-	-	-	0.06(1;.)	0.05(1;.)	0.25(1;.)
METAMYSIDOPSIS(Juvenile)	-	-	-	0.17(1;.)	-	-
METAMYSIDOPSIS	-	-	-	-	0.03(3;0.01)	-
METAMYSIDOPSIS SWIFTI(Juvenile)	-	-	-	-	-	0.09(1;.)
CUMACEA(Juvenile)	-	-	-	-	-	0.02(1;.)
OXYUROSTYLIS SMITHI(Juvenile)	-	-	-	-	-	0.34(1;.)
OXYUROSTYLIS SMITHI	1.75(1;.)	-	-	-	-	0.16(4;0.15)
TANAIDACEA	-	-	-	-	0.09(1;.)	-
ISOPODA(Juvenile)	-	-	-	-	-	-
ISOPODA	-	-	-	-	-	-
FLABELLIFERA(ISOPODA)(Juvenile)	-	-	-	-	0.03(1;.)	-
SPHAEROMATIDAE(Juvenile)	-	-	-	-	-	-
CYMOTHOIDAE(Juvenile)	-	-	-	-	-	-
AEGATHOA	0.01(1;.)	-	-	-	-	-
MUNNA	-	-	-	-	-	-
EPICARIDEA(Juvenile)	-	0.05(1;.)	-	-	-	-
AMPHIPODA(Juvenile)	-	-	-	-	-	1.26(1;.)
AMPHIPODA	9.78(6;8.87)	9.65(9;10.96)	18.35(10;22.29)	7.74(12;16.29)	5.86(22;6.04)	1.83(17;1.34)
GAMMARIDEA	-	-	0.59(1;.)	-	-	0.54(1;.)
ATYLUS UROCARINATUS	-	-	-	-	0.02(1;.)	0.03(1;.)
BATEA CATHARINENSIS	-	-	-	-	-	-
COROPHIIDAE	-	-	0.05(1;.)	-	0.1(2;0.01)	0.29(3;0.25)
CERAPUS	-	-	-	-	-	0.14(2;0.16)
CERAPUS TUBULARIS	-	-	-	-	-	0.02(1;.)
COROPHIUM(Juvenile)	-	0.09(1;.)	0.08(1;.)	-	0.15(11;0.17)	0.06(4;0.05)
COROPHIUM	0.07(1;.)	-	0.15(1;.)	-	0.22(6;0.18)	0.2(8;0.21)
COROPHIUM ACHERUSICUM	-	-	-	-	0.28(8;0.36)	0.14(12;0.11)

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
GAMMARIDAE	-	0.73(1;.)	-	-	-	-
MICROPROTOPUS	-	-	-	-	-	0.07(1;.)
MICROPROTOPUS RANEYI(Juvenile)	-	-	-	0.24(2;0)	-	-
MICROPROTOPUS RANEYI	-	-	-	0.14(3;0.01)	8.02(2;9.28)	-
MONOCULODES(Juvenile)	0.03(1;.)	-	-	-	-	-
MONOCULODES	-	0.04(1;.)	-	-	-	-
MONOCULODES NYEI	-	-	-	-	-	0.14(1;.)
SYNCHELIDIUM AMERICANUM	-	0.48(4;0.51)	0.07(1;.)	-	-	-
PODOCERUS(Juvenile)	-	-	-	0.24(1;.)	-	-
PODOCERUS	-	-	-	-	-	0.08(1;.)
PARAMETOPELLA CYPRIS	-	-	-	-	-	-
STENOTHOE(Juvenile)	-	-	0.05(1;.)	-	-	-
STENOTHOE	-	0.02(1;.)	0.05(2;0.05)	-	-	-
STENOTHOE GALLENSIS(Juvenile)	-	-	-	-	-	-
HYPERIIDEA(Juvenile)	0.07(1;.)	-	0.04(1;.)	0.11(1;.)	7.71(1;.)	-
HYPERIIDEA	0.05(1;.)	0.39(2;0.49)	-	-	2.4(3;2.84)	-
HYPERIIDAE	-	-	-	-	-	-
HYPERIETTA VOSSELERI	0.05(11;0.04)	0.05(7;0.03)	0.08(7;0.09)	-	-	-
HYPERIOIDES LONGIPES	0.08(1;.)	0.01(1;.)	0.04(1;.)	-	-	-
HYPEROCHE	-	-	0.02(1;.)	-	-	-
IULOPIS LOVENI	-	-	0.04(3;0.03)	-	-	-
LESTRIGONUS BENGALENSIS(Juvenile)	-	-	-	3.04(1;.)	4.21(1;.)	-
LESTRIGONUS BENGALENSIS	0.25(32;0.41)	0.12(23;0.13)	0.06(8;0.02)	2.28(27;3.73)	16.86(29;48.36)	0.62(10;0.82)
LESTRIGONUS SHIZOGENEOSIS	0.03(3;0)	0.04(3;0.04)	0.04(5;0.03)	-	-	-
LESTRIGONUS MACROPTHALMUS	-	0.03(4;0.03)	0.03(2;0.01)	0.02(1;.)	-	0.11(1;.)
THEMISTELLA FUSCA(Juvenile)	-	-	0.04(1;.)	-	-	-
THEMISTELLA FUSCA	0.08(4;0.07)	0.09(12;0.09)	0.05(4;0.03)	-	0.56(1;.)	-
PHRONIMA(Juvenile)	-	0.02(1;.)	-	-	-	-
PHRONIMA	0.02(1;.)	-	-	-	-	-
PHRONIMA ATLANTICA	-	0.03(4;0.01)	0.1(4;0.14)	-	-	-
PHRONIMA PACIFICA	0.06(3;0.02)	0.02(2;0)	0.05(1;.)	-	-	-
PHRONIMELLA ELONGATA	-	0.02(1;.)	0.02(1;.)	-	-	-
PHROSINA SEMILUNATA	0.07(2;0.01)	0.06(8;0.08)	0.14(7;0.18)	-	-	-
ANCHYLOMERA BLOSSEVILLEI	0.01(1;.)	0.04(4;0.03)	-	-	-	-
PRIMNO(Juvenile)	0.03(1;.)	0.12(9;0.13)	0.07(8;0.06)	-	-	-
PRIMNO LATREILLEI	0.09(10;0.12)	0.07(13;0.08)	-	0.07(1;.)	-	-
PRIMNO BREVIDENS	0.02(1;.)	-	-	-	-	-
PRIMNO JOHNSONI	0.03(4;0.01)	0.08(6;0.11)	-	-	-	-
LYCAEOPSIS(Juvenile)	-	0.02(1;.)	-	-	-	-
LYCAEOPSIS	-	0.04(3;0.03)	0.06(1;.)	-	-	-

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
GAMMARIDAE	-	-	-	-	-	-
MICROPROTOPUS	-	-	-	-	-	-
MICROPROTOPUS RANEYI(Juvenile)	-	-	-	-	-	-
MICROPROTOPUS RANEYI	-	-	-	-	-	-
MONOCULODES(Juvenile)	-	-	-	-	-	-
MONOCULODES	-	-	-	-	-	-
MONOCULODES NYEI	-	-	-	-	-	-
SYNCHELIDIUM AMERICANUM	-	-	-	-	-	-
PODOCERUS(Juvenile)	-	-	-	-	-	-
PODOCERUS	-	-	-	-	-	-
PARAMETOPELLA CYPRIS	-	0.23(5;0.13)	-	-	-	-
STENOTHOE(Juvenile)	-	-	-	-	-	-
STENOTHOE	-	-	-	-	-	-
STENOTHOE GALLENSIS(Juvenile)	-	-	-	-	0.02(1;.)	-
HYPERIIDEA(Juvenile)	-	-	-	-	-	1.13(7;1.45)
HYPERIIDEA	0.95(4;1.71)	4.62(3;3.65)	0.49(7;0.69)	4.21(8;3.22)	0.13(2;0.11)	0.11(4;0.08)
HYPERIIDAE	-	0.36(1;.)	-	-	-	-
HYPERIETTA VOSSELERI	-	-	-	-	-	-
HYPERIOIDES LONGIPES	-	-	0.07(1;.)	-	-	-
HYPEROCHE	-	-	-	-	-	-
IULOPIS LOVENI	-	-	-	-	-	-
LESTRIGONUS BENGALENSIS(Juvenile)	-	0.56(13;0.67)	0.34(3;0.29)	0.18(1;.)	-	-
LESTRIGONUS BENGALENSIS	0.09(11;0.08)	1.24(61;1.46)	0.31(35;0.43)	1.43(62;1.31)	0.51(53;1.12)	0.72(55;1.75)
LESTRIGONUS SHIZOGENEOSIS	-	-	-	0.17(3;0.13)	0.08(1;.)	-
LESTRIGONUS MACROPTHALMUS	-	-	-	-	0.06(1;.)	0.09(1;.)
THEMISTELLA FUSCA(Juvenile)	-	-	-	-	-	-
THEMISTELLA FUSCA	-	-	-	-	0.05(1;.)	-
PHRONIMA(Juvenile)	-	-	-	-	-	-
PHRONIMA	-	-	-	-	-	-
PHRONIMA ATLANTICA	-	-	-	-	-	-
PHRONIMA PACIFICA	-	-	-	-	-	-
PHRONIMELLA ELONGATA	-	0.17(1;.)	-	-	-	-
PHROSINA SEMILUNATA	-	-	-	-	-	-
ANCHYLOMERA BLOSSEVILLEI	-	-	-	-	-	0.02(1;.)
PRIMNO(Juvenile)	-	0.14(1;.)	-	-	-	-
PRIMNO LATREILLEI	-	-	-	-	0.05(1;.)	-
PRIMNO BREVIDENS	-	-	-	-	-	-
PRIMNO JOHNSONI	-	-	-	-	-	-
LYCAEOPSIS(Juvenile)	-	-	-	-	0.04(1;.)	0.07(1;.)
LYCAEOPSIS	-	-	-	-	-	-

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
EUPRONOE MINUTA	0.03(8;0.02)	-	-	-	-	-
PARAPRONOE	0.06(1;.)	-	-	-	-	-
LYCAEA(Juvenile)	-	-	-	-	-	-
LYCAEA	-	0.06(1;.)	-	-	-	-
LYCAEA PULEX	-	-	-	-	-	-
LYCAEA BOVALLIOIDES	-	-	-	-	-	-
LYCAEA VINCENTII	-	-	-	-	-	-
BRACHYSCELUS(Juvenile)	0.06(3;0.06)	0.04(3;0.03)	0.04(2;0.03)	-	-	-
BRACHYSCELUS	0.04(4;0.03)	0.04(1;.)	-	-	-	-
BRACHYSCELUS RAPAX	-	0.03(1;.)	-	-	-	-
CRANOECEPHALUS SCHEROTICUS	0.02(1;.)	0.17(5;0.29)	0.02(1;.)	-	-	-
GLOSSOCEPHALUS MILNE-EDWARDSI	-	-	-	-	-	-
LEPTOCOTIS(Juvenile)	-	0.01(1;.)	-	-	-	-
LEPTOCOTIS TENUIROSTRIS	0.06(1;.)	0.02(1;.)	-	-	-	-
RHABDOSOMA(Juvenile)	0.02(1;.)	-	-	-	-	-
RHABDOSOMA BREVICAUDATUM	0.03(1;.)	-	-	-	-	-
SIMORHYNCHOTUS ANTENNARIUS(Juvenile)	-	-	-	-	-	0.17(1;.)
SIMORHYNCHOTUS ANTENNARIUS	0.08(1;.)	0.09(4;0.08)	0.07(8;0.05)	0.13(8;0.08)	2.92(19;7.07)	0.24(4;0.18)
STREETSIA(Juvenile)	-	0.03(3;0.01)	-	-	-	-
PLATYSCELIDAE	-	-	-	-	-	-
PLATYSCELUS	-	0.03(1;.)	-	-	-	-
HEMITYPHIS RAPAX	0.06(1;.)	-	-	-	-	-
PARATYPHIS MACULATUS	0.03(2;0)	-	-	-	-	-
TETRATHYRUS FORCIPATUS(Juvenile)	-	-	-	-	-	-
TETRATHYRUS FORCIPATUS	0.03(2;0.01)	0.03(2;0)	-	0.13(1;.)	1.92(1;.)	-
THYROPUS(Juvenile)	-	0.03(1;.)	-	-	-	-
THYROPUS	0.06(3;0.04)	0.03(2;0.01)	-	-	-	-
THYROPUS EDWARDSI	0.1(1;.)	-	-	-	-	-
SCHIZOSCELUS ORNATUS	0.03(3;0.01)	-	-	-	-	-
SCINA BOREALIS	-	-	0.01(1;.)	-	-	-
VIBILIA	-	-	0.04(1;.)	-	-	-
VIBILIA VIATRIX	-	-	0.01(1;.)	-	-	-
PARAPHRONIMA GRACILIS	-	-	0.04(3;0.02)	-	-	-
CAPRELLIDAE	-	-	-	-	-	-
CAPRELLA	-	-	-	-	-	-
PARACAPRELLA(Juvenile)	-	-	-	0.24(1;.)	-	-
PARACAPRELLA	-	-	-	-	-	-
EUPHAUSIACEA(Larva)	0.22(1;.)	0.09(1;.)	-	-	-	-
EUPHAUSIACEA(Juvenile)	0.24(1;.)	-	-	-	-	-
EUPHAUSIACEA	-	-	-	-	-	-

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
EUPRONOE MINUTA	-	-	-	-	-	-
PARAPRONOE	-	-	-	-	-	-
LYCAEA(Juvenile)	-	-	-	-	0.05(6;0.06)	0.05(3;0.05)
LYCAEA	-	-	-	-	0.06(1;.)	-
LYCAEA PULEX	-	0.03(1;.)	-	-	-	-
LYCAEA BOVALLIOIDES	-	-	-	0.33(2;0.42)	0.11(11;0.24)	0.02(2;0.02)
LYCAEA VINCENTII	-	-	-	-	0.04(1;.)	-
BRACHYSCELUS(Juvenile)	-	-	-	-	-	0.02(4;0.01)
BRACHYSCELUS	-	-	-	0.06(6;0.04)	0.12(26;0.21)	0.1(1;.)
BRACHYSCELUS RAPAX	-	0.18(1;.)	-	0.31(1;.)	0.05(7;0.02)	-
CRANOECEPHALUS SCHEROTICUS	-	-	-	-	0.03(4;0.03)	-
GLOSSOCEPHALUS MILNE-EDWARDSI	-	-	-	0.04(1;.)	-	-
LEPTOCOTIS(Juvenile)	-	-	-	-	-	-
LEPTOCOTIS TENUIROSTRIS	-	-	-	-	-	-
RHABDOSOMA(Juvenile)	-	-	-	-	-	-
RHABDOSOMA BREVICAUDATUM	-	-	-	-	-	-
SIMORHYNCHOTUS ANTENNARIUS(Juvenile)	-	0.12(2;0.08)	0.02(1;.)	0.08(1;.)	-	-
SIMORHYNCHOTUS ANTENNARIUS	0.92(2;1.19)	0.17(7;0.14)	0.14(14;0.08)	1.56(59;2.4)	0.12(27;0.16)	0.12(5;0.07)
STREETSIA(Juvenile)	-	-	-	-	-	-
PLATYSCELIDAE	-	0.07(1;.)	-	-	-	-
PLATYSCELUS	-	-	-	-	-	-
HEMITYPHIS RAPAX	-	-	-	-	-	-
PARATYPHIS MACULATUS	-	0.07(1;.)	-	-	0.04(1;.)	-
TETRATHYRUS FORCIPATUS(Juvenile)	-	0.72(1;.)	-	-	-	-
TETRATHYRUS FORCIPATUS	-	0.18(10;0.13)	0.06(3;0.04)	1(15;3.04)	0.13(14;0.12)	0.08(4;0.04)
THYROPUS(Juvenile)	-	-	-	-	-	-
THYROPUS	-	0.44(1;.)	-	0.31(1;.)	0.12(4;0.17)	0.04(6;0.03)
THYROPUS EDWARDSI	-	-	-	-	0.17(1;.)	-
SCHIZOSCELUS ORNATUS	-	-	-	-	-	-
SCINA BOREALIS	-	-	-	-	-	-
VIBILIA	-	-	-	-	-	-
VIBILIA VIATRIX	-	-	-	-	-	-
PARAPHRONIMA GRACILIS	-	0.49(1;.)	-	-	-	-
CAPRELLIDAE	-	0.02(1;.)	-	-	-	-
CAPRELLA	-	-	-	-	-	0.06(1;.)
PARACAPRELLA(Juvenile)	-	-	-	-	-	0.01(1;.)
PARACAPRELLA	-	-	-	-	0.27(1;.)	-
EUPHAUSIACEA(Larva)	-	-	-	0.17(1;.)	0.82(3;1.22)	-
EUPHAUSIACEA(Juvenile)	-	-	-	-	0.05(12;0.04)	-
EUPHAUSIACEA	-	-	-	-	-	0.13(1;.)

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
EUPHAUSIACEA(Furcila)	0.17(29;0.24)	0.37(24;0.36)	1.25(18;1.21)	0.34(7;0.34)	-	-
EUPHAUSIACEA(Calyptera)	0.12(22;0.17)	0.12(19;0.17)	2.36(16;2.25)	0.19(1;.)	0.04(1;.)	-
EUPHAUSIIDAE(Zoea)	-	-	-	-	-	-
EUPHAUSIIDAE	-	-	-	-	-	-
EUPHAUSIA(Zoea)	-	0.02(1;.)	-	-	-	-
EUPHAUSIA(Larva)	0.09(2;0.04)	0.06(2;0.04)	-	-	-	-
EUPHAUSIA(Juvenile)	0.14(15;0.14)	0.06(9;0.04)	0.14(4;0.11)	-	-	-
EUPHAUSIA	0.06(2;0.04)	0.25(10;0.24)	0.24(10;0.15)	-	-	-
EUPHAUSIA(Furcila)	-	0.17(3;0.24)	-	-	-	-
EUPHAUSIA(Calyptera)	-	0.02(1;.)	-	-	0.08(1;.)	-
DECAPODA(Zoea)	0.03(1;.)	-	-	-	-	-
DECAPODA(Larva)	-	-	-	-	-	-
DECAPODA(Protozoea)	-	-	-	-	-	-
DECAPODA(Mysis)	-	-	-	-	-	-
PENAEIDEA(Postlarva)	-	-	-	-	-	-
PENAEIDEA(Protozoea)	-	-	-	-	-	-
PENAEIDEA(Mysis)	0.06(1;.)	-	-	-	-	0.03(1;.)
PENAEIDAE(Nauplius)	-	-	-	0.46(1;.)	-	-
PENAEIDAE(Postlarva)	-	0.01(1;.)	-	-	-	-
PENAEIDAE(Protozoea)	0.33(1;.)	-	-	-	1.36(1;.)	4(2;1.84)
PENAEIDAE(Mysis)	0.07(1;.)	-	0.02(3;0)	-	-	0.02(1;.)
PENAEUS(Nauplius)	-	-	-	-	-	-
PENAEUS(Postlarva)	0.02(1;.)	-	-	-	-	-
PENAEUS(Protozoea)	-	-	-	-	-	-
PENAEUS(Mysis)	-	-	0.42(1;.)	7.67(2;7.53)	0.42(3;0.33)	0.03(4;0.03)
PENAEUS AZTECUS	-	0.02(1;.)	-	-	-	-
PENAEUS AZTECUS(Postlarva)	0.06(49;0.09)	0.09(55;0.14)	0.06(33;0.06)	0.06(23;0.06)	0.03(7;0.03)	0.03(12;0.02)
PENAEUS AZTECUS(Protozoea)	-	-	-	-	-	-
PENAEUS AZTECUS(Mysis)	-	-	-	1(1;.)	0.39(1;.)	-
PENAEUS DUORARUM(Postlarva)	0.01(3;0.01)	-	-	-	-	0.02(2;0)
PENAEUS SETIFERUS(Larva)	-	-	-	-	-	-
PENAEUS SETIFERUS(Postlarva)	0.01(3;0)	0.06(1;.)	-	0.02(5;0.01)	0.02(1;.)	0.03(10;0.03)
PENAEUS SETIFERUS(Mysis)	-	-	-	-	-	0.01(1;.)
TRACHYPENAEUS(Zoea)	-	-	-	-	-	-
TRACHYPENAEUS(Postlarva)	-	-	-	-	-	-
TRACHYPENAEUS(Protozoea)	-	-	-	1.45(2;0.58)	-	-
TRACHYPENAEUS(Mysis)	-	-	-	-	2.78(1;.)	0.31(6;0.31)
TRACHYPENAEUS CONSTRICTUS(Protozoea)	-	-	-	-	-	-
TRACHYPENAEUS CONSTRICTUS(Mysis)	-	-	-	-	-	-
TRACHYPENAEUS SIMILIS(Postlarva)	-	-	-	-	-	-

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
EUPHAUSIACEA(Furcila)	-	-	0.25(1;.)	0.3(10;0.22)	0.96(2;1.32)	-
EUPHAUSIACEA(Calyptera)	-	-	0.13(3;0.05)	0.08(1;.)	-	-
EUPHAUSIIDAE(Zoea)	-	0.14(1;.)	-	-	-	-
EUPHAUSIIDAE	-	0.21(1;.)	-	-	-	-
EUPHAUSIA(Zoea)	-	-	-	-	-	-
EUPHAUSIA(Larva)	-	-	-	0.17(2;0.21)	0.1(3;0.08)	-
EUPHAUSIA(Juvenile)	-	-	-	0.12(2;0.05)	-	0.02(1;.)
EUPHAUSIA	-	-	-	-	0.1(1;.)	0.23(2;0.21)
EUPHAUSIA(Furcila)	-	-	-	0.17(5;0.09)	0.07(1;.)	-
EUPHAUSIA(Calyptera)	-	-	-	-	-	-
DECAPODA(Zoea)	-	-	0.5(14;0.4)	0.31(5;0.43)	0.02(1;.)	-
DECAPODA(Larva)	-	-	1.54(3;1.15)	-	-	-
DECAPODA(Protozoea)	-	-	-	-	5.7(3;9.65)	0.74(1;.)
DECAPODA(Mysis)	-	0.49(1;.)	-	-	-	-
PENAEIDEA(Postlarva)	-	-	-	-	0.02(1;.)	-
PENAEIDEA(Protozoea)	-	13.61(1;.)	-	7.03(1;.)	-	1.19(1;.)
PENAEIDEA(Mysis)	-	-	0.02(1;.)	-	2.17(1;.)	-
PENAEIDAE(Nauplius)	-	0.07(1;.)	-	-	-	-
PENAEIDAE(Postlarva)	-	-	-	0.02(1;.)	-	-
PENAEIDAE(Protozoea)	0.17(1;.)	0.16(1;.)	-	3.42(3;3.73)	-	-
PENAEIDAE(Mysis)	1.04(4;1.68)	0.03(1;.)	0.15(4;0.09)	0.56(2;0.6)	-	-
PENAEUS(Nauplius)	-	-	0.56(1;.)	-	-	-
PENAEUS(Postlarva)	0.04(6;0.02)	0.08(6;0.11)	0.02(3;0.01)	-	-	-
PENAEUS(Protozoea)	0.8(5;1.54)	0.37(26;0.42)	1.09(4;1.79)	4.31(5;8.56)	4.33(1;.)	-
PENAEUS(Mysis)	0.03(1;.)	0.12(2;0.03)	0.17(3;0.12)	1.68(6;1.85)	4.07(5;3.42)	-
PENAEUS AZTECUS	-	-	-	-	-	-
PENAEUS AZTECUS(Postlarva)	0.06(25;0.14)	0.12(9;0.17)	0.04(35;0.05)	0.05(34;0.04)	0.04(43;0.05)	0.04(21;0.03)
PENAEUS AZTECUS(Protozoea)	0.13(1;.)	-	-	-	-	-
PENAEUS AZTECUS(Mysis)	0.04(1;.)	-	-	10.92(1;.)	-	-
PENAEUS DUORARUM(Postlarva)	0.05(1;.)	0.06(9;0.06)	0.02(14;0.02)	0.02(7;0.01)	0.04(4;0.04)	0.02(3;0)
PENAEUS SETIFERUS(Larva)	-	1.63(1;.)	-	-	-	-
PENAEUS SETIFERUS(Postlarva)	0.09(16;0.13)	0.14(24;0.42)	0.04(30;0.07)	0.05(19;0.09)	0.02(10;0.01)	0.01(3;0.01)
PENAEUS SETIFERUS(Mysis)	0.06(1;.)	-	0.06(2;0.05)	-	-	-
TRACHYPENAEUS(Zoea)	-	-	-	0.22(1;.)	-	-
TRACHYPENAEUS(Postlarva)	0.14(5;0.07)	0.22(10;0.13)	0.31(12;0.3)	0.05(4;0.04)	0.06(2;0.07)	-
TRACHYPENAEUS(Protozoea)	-	0.3(8;0.61)	0.23(3;0.11)	0.27(5;0.24)	-	-
TRACHYPENAEUS(Mysis)	0.06(2;0.01)	0.73(19;2.33)	0.94(15;2.9)	0.35(35;0.39)	0.08(5;0.05)	-
TRACHYPENAEUS CONSTRICTUS(Protozoea)	-	-	0.54(1;.)	-	-	-
TRACHYPENAEUS CONSTRICTUS(Mysis)	-	0.17(1;.)	-	-	-	-
TRACHYPENAEUS SIMILIS(Postlarva)	-	0.08(1;.)	-	-	-	-

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
PARAPENAEUS(Protozoea)	-	-	-	-	-	-
XIPHOPENAEUS(Protozoea)	-	-	-	-	-	-
XIPHOPENAEUS(Mysis)	-	-	-	-	-	-
XIPHOPENAEUS KROYERI	-	-	-	-	-	-
XIPHOPENAEUS KROYERI(Postlarva)	-	-	-	-	-	-
XIPHOPENAEUS KROYERI(Protozoea)	0.24(1;.)	-	-	0.33(4;0.21)	0.12(1;.)	-
XIPHOPENAEUS KROYERI(Mysis)	-	-	-	0.25(2;0.1)	0.32(7;0.3)	1.46(7;1.72)
SERGESTIDAE(Zoea)	0.03(2;0.01)	0.07(4;0.04)	-	-	-	-
SERGESTIDAE(Protozoea)	-	-	-	-	-	-
ACETES(Larva)	-	-	-	-	-	-
ACETES(Juvenile)	-	-	-	-	-	-
ACETES	-	-	-	-	-	-
ACETES(Postlarva)	-	-	-	-	-	-
ACETES(Protozoea)	-	0.45(1;.)	-	-	-	-
ACETES(Mysis)	-	-	-	-	-	-
ACETES AMERICANUS(Nauplius)	-	-	-	-	12.53(6;16.46)	-
ACETES AMERICANUS(Zoea)	-	-	-	-	-	3.09(1;.)
ACETES AMERICANUS(Larva)	0.59(16;1.22)	0.07(22;0.07)	0.24(10;0.15)	13.91(25;21.61)	28.17(27;34.89)	1.85(20;2.38)
ACETES AMERICANUS(Juvenile)	-	-	-	-	-	-
ACETES AMERICANUS	0.33(1;.)	0.07(5;0.04)	0.02(1;.)	0.52(4;0.39)	1.45(6;1.24)	3.12(3;0.78)
ACETES AMERICANUS(Postlarva)	0.29(2;0.04)	-	-	2.23(3;2.26)	23.53(17;27.44)	27.6(9;21.29)
ACETES AMERICANUS(Protozoea)	0.2(4;0.15)	0.08(1;.)	8.36(9;7.72)	11.98(9;13.68)	68(23;96.4)	321.8(8;674.7)
ACETES AMERICANUS(Mysis)	0.3(3;0.03)	-	3.62(3;2.45)	7.86(6;4.13)	42.58(23;52.75)	26.9(11;38.57)
LUCIFER(Larva)	-	-	-	-	-	-
LUCIFER(Juvenile)	-	-	-	-	-	0.09(1;.)
LUCIFER	-	0.73(1;.)	-	-	-	-
LUCIFER(Protozoea)	0.07(1;.)	0.73(1;.)	0.45(2;0.57)	-	-	0.05(1;.)
LUCIFER(Mysis)	-	-	-	-	-	0.32(2;0.07)
LUCIFER FAXONI(Nauplius)	-	-	-	-	-	-
LUCIFER FAXONI(Zoea)	-	-	-	-	-	-
LUCIFER FAXONI(Larva)	4.05(49;14.09)	0.44(37;0.67)	0.46(15;0.32)	19.3(30;27.28)	41.38(30;53.44)	4.09(27;5.75)
LUCIFER FAXONI(Juvenile)	-	-	0.04(1;.)	1.32(3;2.11)	7.71(1;.)	4.01(2;5.61)
LUCIFER FAXONI	0.12(27;0.13)	0.09(20;0.16)	0.22(10;0.15)	1.52(9;1.63)	10.69(22;12.95)	10.8(6;13.89)
LUCIFER FAXONI(Cypris)	-	-	-	-	18.66(1;.)	-
LUCIFER FAXONI(Postlarva)	0.64(6;0.4)	-	2.48(1;.)	9.08(5;7.14)	12.89(26;11.9)	29.47(9;11.5)
LUCIFER FAXONI(Protozoea)	0.02(1;.)	-	3.85(3;2.28)	10.97(8;12.16)	34.84(26;43.89)	932(6;1172)
LUCIFER FAXONI(Mysis)	0.82(4;0.56)	-	2.17(8;1.93)	10.39(12;9.73)	48.31(28;56.12)	80.1(9;106.7)
LUCIFER TYPUS(Larva)	1.15(2;1.42)	0.06(1;.)	-	-	-	-
LUCIFER TYPUS(Juvenile)	-	0.73(1;.)	0.1(1;.)	-	-	-
LUCIFER TYPUS	0.04(2;0.01)	0.08(1;.)	0.07(3;0.01)	-	0.08(1;.)	-

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
PARAPENAEUS(Protozoea)	0.17(1;.)	-	-	0.16(1;.)	-	-
XIPHOPENAEUS(Protozoea)	-	-	-	0.55(5;0.85)	-	-
XIPHOPENAEUS(Mysis)	-	0.14(1;.)	-	0.24(2;0.13)	-	-
XIPHOPENAEUS KROYERI	-	-	-	-	6.96(1;.)	-
XIPHOPENAEUS KROYERI(Postlarva)	0.38(1;.)	-	0.37(3;0.23)	0.22(3;0.23)	0.4(1;.)	-
XIPHOPENAEUS KROYERI(Protozoea)	1.57(8;2.54)	0.89(5;0.89)	-	1.06(24;1.99)	3.17(4;5.33)	0.1(12;0.08)
XIPHOPENAEUS KROYERI(Mysis)	1.73(25;3.93)	0.4(32;0.7)	0.39(12;0.29)	1.12(51;1.38)	1.24(40;3.36)	0.12(5;0.17)
SERGESTIDAE(Zoea)	-	93.7(1;.)	4.76(2;4.46)	-	5.48(1;.)	0.07(2;0.06)
SERGESTIDAE(Protozoea)	-	20.54(1;.)	-	-	-	-
ACETES(Larva)	-	4.11(1;.)	-	-	-	0.19(1;.)
ACETES(Juvenile)	-	-	-	0.18(1;.)	-	-
ACETES	-	-	0.75(1;.)	0.22(1;.)	-	-
ACETES(Postlarva)	-	-	-	0.09(1;.)	-	0.34(1;.)
ACETES(Protozoea)	-	10.31(4;19.59)	0.48(1;.)	1.13(4;0.53)	-	0.42(2;0.35)
ACETES(Mysis)	-	0.73(2;0.2)	-	0.04(1;.)	-	-
ACETES AMERICANUS(Nauplius)	-	-	11.65(9;21.36)	21.33(3;18.92)	-	-
ACETES AMERICANUS(Zoea)	3.4(1;.)	-	0.29(1;.)	10.19(2;10.63)	-	-
ACETES AMERICANUS(Larva)	15.01(37;33.07)	2.49(34;3.31)	0.6(25;0.81)	27.1(36;32.09)	14.95(32;32.41)	0.82(31;1.9)
ACETES AMERICANUS(Juvenile)	-	0.59(7;0.38)	0.35(2;0.38)	1.31(4;0.89)	0.06(1;.)	-
ACETES AMERICANUS	0.59(2;0.28)	2.72(16;4.39)	3.51(28;9.08)	17.86(35;19.82)	12.75(37;42.53)	5.7(36;7.62)
ACETES AMERICANUS(Postlarva)	0.48(2;0.12)	9.08(42;9.23)	7.35(7;15.56)	5.28(17;7.33)	5.23(13;7.93)	1.21(9;0.66)
ACETES AMERICANUS(Protozoea)	2.14(3;2.11)	13.61(56;33.83)	68.6(27;153.8)	50.2(25;104.6)	72(18;121.3)	6.79(14;5.87)
ACETES AMERICANUS(Mysis)	-	3.77(46;6.16)	3.94(17;7.6)	32.05(19;56.53)	6.91(15;9.67)	3.92(14;4.56)
LUCIFER(Larva)	-	-	-	-	-	1.25(1;.)
LUCIFER(Juvenile)	-	-	-	-	-	2.76(1;.)
LUCIFER	-	0.04(1;.)	-	-	-	-
LUCIFER(Protozoea)	-	0.28(4;0.19)	0.29(3;0.17)	0.32(4;0.19)	-	0.99(4;0.97)
LUCIFER(Mysis)	-	-	-	-	-	-
LUCIFER FAXONI(Nauplius)	-	-	7.42(1;.)	-	-	-
LUCIFER FAXONI(Zoea)	0.23(1;.)	-	-	12.01(1;.)	-	-
LUCIFER FAXONI(Larva)	2.3(37;4.31)	3.68(33;5.43)	3.11(36;4.28)	5.86(36;14.26)	2.81(31;11.48)	1.96(34;3.61)
LUCIFER FAXONI(Juvenile)	-	1.02(12;1.51)	0.27(3;0.3)	-	0.27(1;.)	0.32(2;0.27)
LUCIFER FAXONI	0.04(2;0)	2.1(9;2.59)	2.5(34;3.32)	25.45(35;63.94)	0.75(37;1.04)	1.5(39;1.9)
LUCIFER FAXONI(Cypris)	-	-	-	-	-	-
LUCIFER FAXONI(Postlarva)	3.81(3;4.01)	7.5(6;8.92)	1.08(5;0.97)	3.52(15;4.92)	4.99(5;0.89)	1.41(12;0.78)
LUCIFER FAXONI(Protozoea)	0.19(8;0.23)	0.69(6;0.66)	1.79(10;1.82)	16.1(19;25.31)	2.42(6;1.9)	15.57(9;28.25)
LUCIFER FAXONI(Mysis)	0.87(8;1.42)	1.44(20;2.08)	4.52(20;6.77)	12.26(25;17.8)	5.94(20;6.94)	5.91(22;9.82)
LUCIFER TYPUS(Larva)	-	-	-	-	-	0.03(2;0.01)
LUCIFER TYPUS(Juvenile)	-	-	-	-	-	0.05(1;.)
LUCIFER TYPUS	-	-	-	-	-	-

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
LUCIFER TYPUS(Postlarva)	0.93(1;.)	-	-	-	-	-
SERGESTES(Nauplius)	-	-	-	-	0.43(1;.)	-
SERGESTES(Zoea)	0.07(7;0.08)	0.05(8;0.04)	0.05(8;0.04)	0.17(2;0.03)	-	-
SERGESTES(Larva)	-	0.06(1;.)	-	-	-	-
SERGESTES(Juvenile)	0.05(3;0.04)	-	0.1(6;0.09)	-	0.4(1;.)	-
SERGESTES	-	-	0.03(1;.)	-	-	-
SERGESTES(Postlarva)	2.79(1;.)	0.04(1;.)	-	-	-	-
SERGESTES(Protozoea)	0.08(5;0.05)	0.03(2;0.02)	0.07(5;0.06)	-	2.55(1;.)	-
SERGESTES(Mysis)	0.18(2;0.18)	-	0.02(1;.)	-	0.39(1;.)	-
SERGESTES ARCTICUS(Postlarva)	0.93(1;.)	-	-	-	-	-
SOLENOCERA(Postlarva)	-	-	-	-	-	-
SOLENOCERA(Protozoea)	0.02(1;.)	-	-	-	-	-
SOLENOCERA(Mysis)	0.03(1;.)	0.03(2;0.03)	-	-	-	-
SICYONIA(Juvenile)	-	-	-	-	-	-
SICYONIA(Postlarva)	0.03(1;.)	-	-	-	-	-
SICYONIA(Protozoea)	-	-	-	-	-	-
SICYONIA(Mysis)	-	-	-	-	-	-
CARIDEA(Zoea)	0.03(3;0.01)	0.05(1;.)	-	-	1.03(2;1.14)	-
CARIDEA(Larva)	-	-	-	-	-	-
CARIDEA	-	-	-	-	-	1.2(1;.)
CARIDEA(Postlarva)	-	-	-	0.52(1;.)	-	-
CARIDEA(Protozoea)	-	-	-	-	-	-
CARIDEA(Mysis)	-	-	-	-	-	-
OPLOPHORIDAE(Zoea)	-	-	-	-	0.02(2;0)	0.05(2;0.01)
OPLOPHORIDAE(Postlarva)	-	-	-	-	-	-
LEPTOCHELA(Zoea)	0.03(2;0.01)	-	-	-	-	-
LEPTOCHELA(Postlarva)	-	-	-	-	-	-
LEPTOCHELA SERRATORBITA(Zoea)	0.02(1;.)	-	-	-	-	-
LEPTOCHELA SERRATORBITA(Larva)	-	0.31(2;0.29)	-	-	-	-
LEPTOCHELA SERRATORBITA(Juvenile)	-	0.04(2;0)	-	-	-	-
LEPTOCHELA SERRATORBITA(Postlarva)	-	-	-	-	-	1.2(1;.)
PALAEMONIDAE(Zoea)	-	-	-	0.22(4;0.11)	0.58(6;0.69)	0.2(6;0.22)
PALAEMONIDAE(Larva)	-	-	-	-	-	-
PALAEMONIDAE(Postlarva)	-	-	-	-	-	-
LEANDER(Juvenile)	-	-	-	-	-	0.08(1;.)
LEANDER(Mysis)	-	-	0.85(1;.)	-	0.14(1;.)	-
LEANDER TENUICORNIS(Zoea)	-	-	-	-	-	-
LEANDER TENUICORNIS(Larva)	-	-	-	-	7.71(1;.)	-
LEANDER TENUICORNIS(Juvenile)	-	-	-	-	-	0.07(4;0.04)
LEANDER TENUICORNIS	-	-	-	-	-	0.04(1;.)

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
LUCIFER TYPUS(Postlarva)	-	-	-	-	-	-
SERGESTES(Nauplius)	-	-	-	-	-	-
SERGESTES(Zoea)	-	4.09(4;2.77)	-	0.21(5;0.14)	-	-
SERGESTES(Larva)	-	5.45(1;.)	-	-	-	0.03(1;.)
SERGESTES(Juvenile)	-	-	-	0.02(1;.)	-	0.07(3;0.03)
SERGESTES	-	-	-	-	-	-
SERGESTES(Postlarva)	-	-	-	-	-	-
SERGESTES(Protozoea)	-	-	-	-	-	0.03(1;.)
SERGESTES(Mysis)	-	-	-	-	-	-
SERGESTES ARCTICUS(Postlarva)	-	-	-	-	-	-
SOLENOCERA(Postlarva)	-	-	-	0.08(1;.)	-	-
SOLENOCERA(Protozoea)	-	-	-	-	-	-
SOLENOCERA(Mysis)	-	0.31(4;0.17)	-	0.03(2;0.02)	0.05(1;.)	-
SICYONIA(Juvenile)	-	-	-	0.08(1;.)	-	- .
SICYONIA(Postlarva)	0.05(3;0.02)	0.04(1;.)	-	0.23(2;0.17)	0.11(3;0.11)	-
SICYONIA(Protozoea)	-	-	-	0.48(17;0.61)	-	-
SICYONIA(Mysis)	0.18(11;0.1)	0.09(8;0.06)	0.08(1;.)	0.24(8;0.19)	0.33(3;0.5)	0.06(1;.)
CARIDEA(Zoea)	2.65(5;3.57)	0.79(7;0.73)	0.08(2;0)	1.05(4;1.26)	0.34(2;0.46)	0.47(4;0.88)
CARIDEA(Larva)	-	-	0.18(2;0.1)	1.79(1;.)	0.11(1;.)	0.34((1;.)
CARIDEA	-	-	-	-	2.61(1;.)	-
CARIDEA(Postlarva)	0.06(2;0.03)	-	0.76(1;.)	-	-	-
CARIDEA(Protozoea)	-	-	-	0.46(1;.)	10.31(3;0.72)	0.61(1;.)
CARIDEA(Mysis)	-	-	-	-	-	0.74(1;.)
OPLOPHORIDAE(Zoea)	0.65(6;1.42)	0.16(1;.)	0.08(5;0.12)	0.03(3;0.01)	-	0.06(2;0.07)
OPLOPHORIDAE(Postlarva)	-	-	-	0.02(3;0.01)	-	-
LEPTOCHELA(Zoea)	-	-	-	0.27(10;0.22)	0.61(10;0.75)	-
LEPTOCHELA(Postlarva)	-	-	-	0.17(1;.)	-	-
LEPTOCHELA SERRATORBITA(Zoea)	-	0.62(1;.)	-	2.76(2;3.85)	-	-
LEPTOCHELA SERRATORBITA(Larva)	0.02(1;.)	-	-	-	-	-
LEPTOCHELA SERRATORBITA(Juvenile)	-	-	-	-	0.09(4;0.08)	0.14(2;0.08)
LEPTOCHELA SERRATORBITA(Postlarva)	-	0.03(1;.)	-	-	-	-
PALAEMONIDAE(Zoea)	-	-	3.99(1;.)	0.24(1;.)	0.1(1;.)	-
PALAEMONIDAE(Larva)	-	-	-	0.08(2;0.09)	-	-
PALAEMONIDAE(Postlarva)	-	1.49(1;.)	-	-	2.61(1;.)	0.22(1;.)
LEANDER(Juvenile)	-	-	-	-	-	-
LEANDER(Mysis)	-	-	-	-	-	-
LEANDER TENUICORNIS(Zoea)	0.25(2;0.29)	0.46(4;0.68)	-	3.16(1;.)	-	-
LEANDER TENUICORNIS(Larva)	0.02(1;.)	-	0.2(1;.)	-	-	-
LEANDER TENUICORNIS(Juvenile)	-	-	-	-	-	-
LEANDER TENUICORNIS	-	-	-	-	-	-

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
LEANDER TENUICORNIS(Postlarva)	-	-	-	-	0.06(1;.)	6.59(1;.)
LEANDER TENUICORNIS(Mysis)	-	-	-	-	0.21(2;0.19)	-
MACROBRACHIUM ACANTHURUS(Zoea)	-	-	-	-	0.96(1;.)	-
PALAEMONETES(Zoea)	-	-	0.07(1;.)	2.24(10;3.94)	0.4(11;0.81)	0.93(18;1.48)
PALAEMONETES(Megalopa)	-	-	-	-	-	-
PALAEMONETES(Larva)	-	-	-	-	-	-
PALAEMONETES(Postlarva)	-	-	-	-	-	-
PALAEMONETES(Mysis)	0.05(1;.)	1.46(1;.)	-	-	-	-
PALAEMONETES PUGIO(Zoea)	-	-	-	-	-	1.35(2;1.85)
PALAEMONETES PUGIO(Mysis)	-	-	-	0.02(1;.)	-	-
PALAEMONETES VULGARIS(Zoea)	-	-	-	-	-	10.6(1;.)
PALAEMONETES VULGARIS(Larva)	-	-	-	-	0.15(1;.)	-
PALAEMONETES VULGARIS(Postlarva)	-	-	-	-	-	-
PALAEMONETES VULGARIS(Mysis)	-	-	-	-	-	-
PERICLIMENES(Zoea)	-	-	-	-	-	-
PERICLIMENES AMERICANUS(Zoea)	-	-	-	-	4.24(1;.)	-
PALAEMON FLORIDANUS(Zoea)	-	-	-	-	-	-
ALPHEIDAE(Zoea)	-	-	-	-	-	5.3(1;.)
ALPHEIDAE(Larva)	-	-	-	-	-	-
ALPHEIDAE(Postlarva)	-	-	-	-	-	-
ALPHEUS(Zoea)	0.04(1;.)	0.04(8;0.03)	0.09(1;.)	3.78(7;4.62)	0.74(11;0.96)	0.53(12;0.43)
ALPHEUS(Larva)	-	-	-	-	-	-
ALPHEUS(Juvenile)	-	-	-	-	-	-
ALPHEUS(Postlarva)	-	-	-	-	0.56(1;.)	-
ALPHEUS(Mysis)	-	-	-	-	-	-
ALPHEUS HETEROCHAELIS(Zoea)	-	-	-	-	2.18(1;.)	-
ALPHEUS HETEROCHAELIS(Juvenile)	-	-	-	-	1.87(2;0.44)	-
ALPHEUS HETEROCHAELIS(Mysis)	-	-	-	-	2.78(1;.)	-
ALPHEUS NORMANNI(Zoea)	-	-	-	-	-	-
ALPHEUS NORMANNI(Larva)	-	-	-	-	-	-
ALPHEUS NORMANNI(Mysis)	-	-	-	0.07(1;.)	-	-
AUTOMATE(Postlarva)	-	-	-	-	-	-
OGYRIDES LIMICOLA(Zoea)	0.06(1;.)	0.06(13;0.06)	0.05(2;0.01)	4.19(31;6.34)	0.42(20;0.53)	1.6(20;1.22)
OGYRIDES LIMICOLA(Larva)	-	0.04(1;.)	-	4.7(1;.)	-	-
OGYRIDES LIMICOLA(Juvenile)	-	-	-	-	-	0.12(4;0.09)
OGYRIDES LIMICOLA	-	-	-	-	-	-
OGYRIDES LIMICOLA(Postlarva)	-	-	-	-	-	0.58(2;0.59)
OGYRIDES LIMICOLA(Mysis)	-	-	0.04(1;.)	1.01(1;.)	0.51(4;0.28)	-
HIPPOLYTIDAE(Zoea)	0.06(4;0.03)	0.07(6;0.05)	0.06(7;0.04)	0.29(1;.)	-	-
HIPPOLYTIDAE(Larva)	-	-	-	-	-	-

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
LEANDER TENUICORNIS(Postlarva)	-	-	-	-	-	-
LEANDER TENUICORNIS(Mysis)	-	-	-	-	-	-
MACROBRACHIUM ACANTHURUS(Zoea)	-	-	-	-	-	-
PALAEMONETES(Zoea)	0.08(4;0.03)	1.1(5;1.77)	0.53(16;0.58)	0.34(13;0.73)	0.02(1;.)	0.34(1;.)
PALAEMONETES(Megalopa)	-	-	0.02(1;.)	0.02(1;.)	-	-
PALAEMONETES(Larva)	-	-	-	0.65(1;.)	-	-
PALAEMONETES(Postlarva)	2.13(2;2.96)	-	-	-	-	-
PALAEMONETES(Mysis)	0.04(2;0.03)	-	-	22.32(1;.)	-	-
PALAEMONETES PUGIO(Zoea)	-	0.32(5;0.21)	0.04(2;0.02)	-	-	-
PALAEMONETES PUGIO(Mysis)	0.33(2;0.35)	-	-	-	-	-
PALAEMONETES VULGARIS(Zoea)	0.56(1;.)	-	-	-	-	-
PALAEMONETES VULGARIS(Larva)	-	-	-	-	-	-
PALAEMONETES VULGARIS(Postlarva)	-	-	0.1(1;.)	-	-	-
PALAEMONETES VULGARIS(Mysis)	0.04(1;.)	-	0.82(1;.)	-	-	-
PERICLIMENES(Zoea)	-	0.13(2;0.08)	-	-	-	-
PERICLIMENES AMERICANUS(Zoea)	-	-	-	2.78(1;.)	0.15(1;.)	-
PALAEMON FLORIDANUS(Zoea)	-	0.07(1;.)	-	-	-	-
ALPHEIDAE(Zoea)	-	0.96(19;1.38)	5.21(4;10.05)	0.22(1;.)	-	0.34(2;0.39)
ALPHEIDAE(Larva)	-	-	23.95(1;.)	-	-	-
ALPHEIDAE(Postlarva)	-	0.05(1;.)	40.54(1;.)	-	-	-
ALPHEUS(Zoea)	0.2(12;0.31)	0.2(12;0.15)	0.2(12;0.17)	0.14(8;0.1)	3.23(3;4.5)	0.06(8;0.05)
ALPHEUS(Larva)	-	-	-	3.66(1;.)	-	-
ALPHEUS(Juvenile)	-	-	-	0.02(1;.)	-	-
ALPHEUS(Postlarva)	-	-	0.04(3;0.05)	0.08(3;0.12)	-	-
ALPHEUS(Mysis)	-	-	0.09(1;.)	-	-	-
ALPHEUS HETEROCHAELIS(Zoea)	-	-	-	0.38(1;.)	2.08(2;1.67)	-
ALPHEUS HETEROCHAELIS(Juvenile)	-	-	-	-	-	-
ALPHEUS HETEROCHAELIS(Mysis)	-	-	-	-	-	-
ALPHEUS NORMANNI(Zoea)	-	-	0.98(1;.)	-	-	-
ALPHEUS NORMANNI(Larva)	0.23(1;.)	-	-	-	-	-
ALPHEUS NORMANNI(Mysis)	-	-	-	-	-	-
AUTOMATE(Postlarva)	-	0.28(3;0.17)	-	-	-	-
OGYRIDES LIMICOLA(Zoea)	0.3(7;0.62)	0.13(8;0.06)	1.32(47;1.96)	2.01(49;3.89)	0.69(55;1.06)	0.29(28;0.49)
OGYRIDES LIMICOLA(Larva)	-	-	-	4.85(5;5.28)	-	1.24(3;1.05)
OGYRIDES LIMICOLA(Juvenile)	-	-	0.03(1;.)	-	-	-
OGYRIDES LIMICOLA	-	-	-	-	0.71(4;0.81)	-
OGYRIDES LIMICOLA(Postlarva)	0.02(1;.)	-	-	-	1.87(2;1.75)	0.55(1;.)
OGYRIDES LIMICOLA(Mysis)	0.08(4;0.07)	10.32(1;.)	1.91(2;2.44)	3.85(1;.)	2.33(1;.)	0.34(2;0.47)
HIPPOLYTIDAE(Zoea)	0.28(8;0.34)	0.07(1;.)	0.1(3;0.03)	0.17(12;0.12)	0.14(8;0.09)	0.17(4;0.2)
HIPPOLYTIDAE(Larva)	-	-	-	0.16(1;.)	1.83(1;.)	-

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
HIPPOLYTIDAE(Postlarva)	0.03(1;.)	-	-	-	-	-
HIPPOLYTE(Zoea)	-	-	-	-	-	-
LATREUTES(Zoea)	0.07(8;0.07)	0.02(1;.)	-	-	0.24(1;.)	0.03(1;.)
LATREUTES(Juvenile)	-	-	-	0.12(1;.)	-	-
LATREUTES(Postlarva)	-	-	-	-	-	-
LATREUTES FUCORUM(Zoea)	-	-	-	10.57(2;7.86)	-	0.07(3;0.05)
LATREUTES FUCORUM(Larva)	-	-	-	-	-	-
LATREUTES FUCORUM(Juvenile)	0.02(1;.)	-	-	-	-	-
LATREUTES PARVULUS(Zoea)	0.06(2;0.07)	-	-	-	-	-
LATREUTES PARVULUS(Juvenile)	0.04(1;.)	0.16(2;0.14)	-	-	-	-
LATREUTES PARVULUS(Postlarva)	-	-	-	-	-	-
HIPPOLYSMATA WURDEMANNI(Zoea)	0.06(1;.)	-	-	-	-	-
TOZEUMA CAROLINENSE(Zoea)	-	-	-	-	-	-
TOZEUMA CAROLINENSE(Postlarva)	-	-	-	-	-	-
TOZEUMA CAROLINENSE(Protozoea)	-	-	-	-	-	-
THOR(Zoea)	-	-	-	-	-	-
THOR FLORIDANUS(Zoea)	-	-	-	1.78(1;.)	-	-
THOR FLORIDANUS(Megalopa)	-	-	-	0.22(1;.)	-	-
THOR FLORIDANUS(Mysis)	-	-	-	-	0.39(1;.)	-
PROCESSA(Zoea)	-	-	-	-	-	-
PROCESSA(Larva)	-	0.01(1;.)	-	-	-	-
PROCESSA(Juvenile)	-	-	-	-	-	-
PROCESSA(Postlarva)	-	-	-	-	-	-
PROCESSA HEMPHILLI(Zoea)	-	-	-	-	-	-
PROCESSA HEMPHILLI(Larva)	-	0.1(2;0.11)	-	-	-	-
PROCESSA HEMPHILLI(Juvenile)	-	-	-	-	-	0.16(1;.)
PROCESSA HEMPHILLI(Postlarva)	-	-	-	-	-	-
PARAPANDALUS(Juvenile)	-	-	-	-	-	0.05(1;.)
STENOPUS HISPIDUS(Zoea)	-	0.02(1;.)	-	-	-	-
PALINURA(Zoea)	-	-	-	-	-	-
PALINURA(Phyllosoma)	-	-	-	-	2.44(1;.)	-
PANULIRUS ARGUS(Larva)	-	-	-	-	-	-
SCYLLARUS(Phyllosoma)	0.02(1;.)	-	-	-	-	0.01(1;.)
ANOMURA(Zoea)	-	-	-	3.76(1;.)	-	-
ANOMURA(Megalopa)	-	-	-	-	-	-
ANOMURA(Larva)	-	-	-	-	-	-
ANOMURA(Glaucothoe)	-	-	-	0.05(2;0.06)	-	-
THALASSINIDAE(Zoea)	0.08(1;.)	0.03(2;0.02)	-	-	-	-
AXIIDAE(Megalopa)	-	-	-	-	-	-
AXIIDAE(Juvenile)	-	-	-	-	-	-

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
HIPPOLYTIDAE(Postlarva)	-	-	-	-	-	-
HIPPOLYTE(Zoea)	0.02(1;.)	0.14(2;0.09)	0.15(1;.)	-	-	0.02(1;.)
LATREUTES(Zoea)	0.13(4;0.12)	0.07(2;0)	0.14(12;0.07)	0.45(14;0.79)	0.2(17;0.28)	0.2(17;0.24)
LATREUTES(Juvenile)	-	-	-	-	0.02(1;.)	-
LATREUTES(Postlarva)	-	-	-	-	-	0.02(1;.)
LATREUTES FUCORUM(Zoea)	-	-	0.05(1;.)	0.12(4;0.13)	1.48(3;1.64)	0.02(1;.)
LATREUTES FUCORUM(Larva)	-	-	-	0.21(3;0.26)	-	-
LATREUTES FUCORUM(Juvenile)	-	-	-	-	-	-
LATREUTES PARVULUS(Zoea)	-	0.05(1;.)	-	0.69(2;0.73)	-	-
LATREUTES PARVULUS(Juvenile)	-	-	-	-	0.29(4;0.33)	-
LATREUTES PARVULUS(Postlarva)	-	-	-	0.16(1;.)	-	-
HIPPOLYSMATA WURDEMANNI(Zoea)	-	0.17(1;.)	-	-	-	-
TOZEUMA CAROLINENSE(Zoea)	-	-	-	-	0.05(1;.)	-
TOZEUMA CAROLINENSE(Postlarva)	-	-	0.07(1;.)	-	-	-
TOZEUMA CAROLINENSE(Protozoea)	-	-	-	0.04(1;.)	-	-
THOR(Zoea)	-	-	-	2.73(1;.)	2.08(1;.)	-
THOR FLORIDANUS(Zoea)	-	-	-	-	13.02(1;.)	-
THOR FLORIDANUS(Megalopa)	-	-	-	-	-	-
THOR FLORIDANUS(Mysis)	-	-	-	-	-	-
PROCESSA(Zoea)	-	0.23(6;0.18)	0.1(3;0.05)	0.16(1;.)	0.01(1;.)	-
PROCESSA(Larva)	-	-	-	-	-	-
PROCESSA(Juvenile)	-	-	-	-	-	0.09(1;.)
PROCESSA(Postlarva)	-	0.04(1;.)	-	-	-	-
PROCESSA HEMPHILLI(Zoea)	0.04(1;.)	-	-	0.08(1;.)	-	-
PROCESSA HEMPHILLI(Larva)	-	-	-	-	-	-
PROCESSA HEMPHILLI(Juvenile)	-	0.06(1;.)	-	-	-	-
PROCESSA HEMPHILLI(Postlarva)	-	-	-	0.02(2;0)	-	-
PARAPANDALUS(Juvenile)	-	-	-	-	-	-
STENOPUS HISPIDUS(Zoea)	-	-	-	-	-	-
PALINURA(Zoea)	-	0.17(1;.)	-	-	-	-
PALINURA(Phyllosoma)	-	-	-	-	-	-
PANULIRUS ARGUS(Larva)	-	0.01(1;.)	-	-	-	-
SCYLLARUS(Phyllosoma)	-	-	-	-	-	0.02(1;.)
ANOMURA(Zoea)	-	0.28(17;0.27)	9.76(2;12.54)	0.69(2;0.95)	0.03(1;.)	0.02(1;.)
ANOMURA(Megalopa)	-	-	-	-	-	0.06(1;.)
ANOMURA(Larva)	0.11(1;.)	-	-	-	-	-
ANOMURA(Glaucothoe)	-	-	-	-	-	-
THALASSINIDAE(Zoea)	0.14(3;0.06)	0.25(10;0.42)	0.34(1;.)	0.38(5;0.37)	0.07(1;.)	-
AXIIDAE(Megalopa)	-	0.12(2;0.15)	-	-	-	-
AXIIDAE(Juvenile)	1.19(3;2.01)	-	-	0.18(1;.)	-	-

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
AXIOPSIS HIRSUTIMANA(Zoea)	-	-	-	-	-	-
AXIOPSIS HIRSUTIMANA(Juvenile)	-	-	-	-	-	-
LAOMEDIIDAE(Zoea)	-	-	-	-	-	0.13(1;.)
NAUSHONIA(Zoea)	-	-	-	-	-	-
NAUSHONIA CRANGONOIDES(Zoea)	-	-	-	-	-	-
CALLIANASSIDAE(Zoea)	-	-	-	-	-	-
CALLIANASSIDAE	-	-	-	-	-	-
CALLIANASSA(Zoea)	0.02(1;.)	-	-	0.1(1;.)	0.26(2;0.2)	0.2(2;0.07)
CALLIANASSA(Megalopa)	-	-	-	-	-	-
CALLIANASSA(Larva)	-	-	-	-	-	-
CALLIANASSA(Juvenile)	-	-	-	-	-	-
CALLIANASSA(Postlarva)	-	-	-	-	-	-
CALLIANASSA MAJOR(Zoea)	-	-	-	1.43(25;1.95)	1.14(13;1.58)	1.5(17;1.9)
PAGURIDAE(Zoea)	0.04(3;0.01)	-	-	0.13(1;.)	-	7.98(1;.)
PAGURIDAE(Megalopa)	-	-	-	-	-	-
PAGURIDAE(Larva)	-	-	-	-	-	-
PAGURIDAE(Postlarva)	-	-	-	-	-	-
PAGURIDAE(Glaucothoe)	-	-	-	-	-	-
PAGURUS(Zoea)	0.06(1;.)	-	-	-	-	-
PAGURUS(Megalopa)	0.04(5;0.03)	0.26(7;0.28)	-	0.19(2;0.18)	-	-
PAGURUS ANNULIPES(Zoea)	0.13(2;0.16)	0.07(7;0.06)	0.07(6;0.03)	1.9(17;3.49)	2.28(20;3.74)	3.98(7;7.36)
PAGURUS ANNULIPES(Megalopa)	-	-	-	-	-	-
PAGURUS ANNULIPES(Glaucothoe)	-	-	-	2.34(1;.)	-	-
PAGURUS LONGICARPUS(Zoea)	0.24(12;0.31)	0.09(19;0.07)	0.69(9;0.66)	0.45(6;0.32)	0.56(1;.)	-
PAGURUS LONGICARPUS(Megalopa)	-	0.03(1;.)	-	-	-	-
PAGURUS POLLICARIS(Zoea)	0.06(13;0.02)	0.08(13;0.06)	0.03(1;.)	0.48(4;0.12)	-	-
GALATHEA(Zoea)	-	-	-	-	-	-
GALATHEA(Postlarva)	-	-	-	-	-	-
PORCELLANIDAE(Zoea)	-	-	-	-	-	-
PETROLISTHES ARMATUS(Zoea)	-	-	-	-	-	-
EUCERAMUS PRAELONGUS(Zoea)	-	0.22(4;0.34)	0.1(3;0.06)	1.49(2;0.63)	1.03(3;1.03)	1.2(1;.)
EUCERAMUS PRAELONGUS(Megalopa)	-	-	-	0.08(1;.)	-	-
EUCERAMUS PRAELONGUS(Postlarva)	-	-	-	-	-	-
POLYONYX GIBBESI(Zoea)	-	-	-	1.79(1;.)	0.72(7;0.76)	-
POLYONYX GIBBESI(Megalopa)	-	-	-	0.05(2;0.01)	-	-
ALBUNEIDAE(Zoea)	-	-	-	-	-	6.59(1;.)
ALBUNEIDAE(Megalopa)	-	-	-	-	-	-
LEPIDOPA(Zoea)	-	-	-	0.17(2;0.03)	0.09(3;0.12)	0.11(1;.)
LEPIDOPA(Megalopa)	-	-	0.01(1;.)	-	-	-
LEPIDOPA WEBSTERI(Zoea)	-	-	-	-	0.02(1;.)	-

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
AXIOPSIS HIRSUTIMANA(Zoea)	0.01(1;.)	-	-	-	-	-
AXIOPSIS HIRSUTIMANA(Juvenile)	0.02(1;.)	-	-	-	-	-
LAOMEDIIDAE(Zoea)	0.03(4;0.02)	0.06(1;.)	-	-	-	-
NAUSHONIA(Zoea)	-	0.21(2;0.01)	-	-	-	-
NAUSHONIA CRANGONOIDES(Zoea)	-	-	0.73(3;0.22)	-	-	-
CALLIANASSIDAE(Zoea)	-	1.28(7;2.88)	0.21(2;0.03)	0.07(1;.)	-	-
CALLIANASSIDAE	-	0.07(1;.)	-	-	-	-
CALLIANASSA(Zoea)	0.69(6;0.63)	0.65(20;1.02)	0.15(9;0.11)	0.48(15;0.78)	0.09(8;0.05)	0.07(8;0.04)
CALLIANASSA(Megalopa)	0.07(3;0.04)	-	-	0.85(3;1.01)	0.06(2;0.02)	-
CALLIANASSA(Larva)	-	0.06(2;0.02)	-	-	-	-
CALLIANASSA(Juvenile)	-	-	0.14(1;.)	-	-	-
CALLIANASSA(Postlarva)	-	0.05(2;0.01)	-	-	-	-
CALLIANASSA MAJOR(Zoea)	0.45(15;0.89)	0.5(46;0.63)	1.51(19;2.17)	0.16(3;0.17)	-	-
PAGURIDAE(Zoea)	-	0.4(15;0.55)	0.39(10;0.36)	3.1(3;4.99)	0.08(1;.)	0.93(5;0.86)
PAGURIDAE(Megalopa)	-	0.09(3;0.05)	-	0.34(1;.)	0.06(4;0.04)	0.09(1;.)
PAGURIDAE(Larva)	1.46(1;.)	-	0.68(2;0.29)	-	-	-
PAGURIDAE(Postlarva)	-	0.35(1;.)	-	-	-	-
PAGURIDAE(Glaucothoe)	-	0.1(1;.)	-	-	-	-
PAGURUS(Zoea)	-	0.21(1;.)	-	-	0.03(1;.)	0.38(1;.)
PAGURUS(Megalopa)	-	-	0.15(9;0.08)	0.64(11;0.86)	0.13(15;0.13)	0.12(2;0.06)
PAGURUS ANNULIPES(Zoea)	0.36(2;0.04)	0.07(5;0.09)	0.35(29;0.33)	5.16(29;11.14)	0.68(37;1.34)	0.27(19;0.32)
PAGURUS ANNULIPES(Megalopa)	-	0.02(1;.)	-	-	0.08(1;.)	-
PAGURUS ANNULIPES(Glaucothoe)	-	-	-	-	0.01(1;.)	-
PAGURUS LONGICARPUS(Zoea)	-	-	-	-	0.12(3;0.02)	0.15(18;0.14)
PAGURUS LONGICARPUS(Megalopa)	-	-	-	-	0.12(3;0.06)	-
PAGURUS POLLICARIS(Zoea)	-	-	-	-	0.15(10;0.19)	0.18(10;0.34)
GALATHEA(Zoea)	-	0.03(1;.)	-	-	-	-
GALATHEA(Postlarva)	-	0.07(1;.)	-	-	-	-
PORCELLANIDAE(Zoea)	0.56(1;.)	-	-	0.04(1;.)	0.03(1;.)	-
PETROLISTHES ARMATUS(Zoea)	-	-	-	-	0.05(1;.)	-
EUCERAMUS PRAELONGUS(Zoea)	1.82(2;2.39)	0.16(1;.)	0.09(1;.)	0.57(14;0.84)	0.07(2;0.03)	0.23(2;0.21)
EUCERAMUS PRAELONGUS(Megalopa)	-	-	-	-	-	0.05(2;0)
EUCERAMUS PRAELONGUS(Postlarva)	-	-	-	-	0.07(2;0.01)	-
POLYONYX GIBBESI(Zoea)	-	-	0.07(2;0.02)	0.17(3;0.11)	0.03(2;0)	-
POLYONYX GIBBESI(Megalopa)	-	-	-	0.07(2;0.07)	0.07(6;0.06)	0.04(12;0.05)
ALBUNEIDAE(Zoea)	0.36(1;.)	-	-	-	-	-
ALBUNEIDAE(Megalopa)	-	-	6.42(3;3.07)	0.25(1;.)	-	-
LEPIDOPA(Zoea)	3.56(1;.)	0.02(1;.)	0.2(1;.)	0.36(1;.)	-	-
LEPIDOPA(Megalopa)	-	-	-	-	-	-
LEPIDOPA WEBSTERI(Zoea)	-	-	-	-	-	-

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
LEPIDOPA BENEDICTI(Zoea)	-	-	-	-	0.15(1;.)	-
ALBUNEA(Zoea)	-	-	-	-	-	-
ALBUNEA(Megalopa)	-	-	-	-	-	-
ALBUNEA PARETII(Zoea)	-	-	-	-	1.14(5;1.31)	0.86(6;1.1)
ALBUNEA PARETII(Megalopa)	-	-	-	-	-	-
ALBUNEA PARETII(Larva)	-	-	-	-	-	-
ALBUNEA PARETII	-	-	-	-	-	-
ALBUNEA GIBBESI(Zoea)	-	-	-	-	-	-
HIPPIDAE(Megalopa)	-	-	-	-	-	-
EMERITA(Postlarva)	-	-	-	-	-	-
EMERITA TALPOIDA(Zoea)	-	-	-	-	0.23(1;.)	0.07(1;.)
EMERITA TALPOIDA(Megalopa)	-	-	-	-	0.02(1;.)	-
CLIBANARIS(Zoea)	-	-	-	-	-	-
CLIBANARIS VITTATUS(Zoea)	-	-	-	0.55(10;0.69)	0.75(10;0.93)	0.3(6;0.33)
CLIBANARIS VITTATUS(Megalopa)	-	-	-	0.01(1;.)	-	0.14(1;.)
UPOGEBIA AFFINIS(Zoea)	0.11(2;0)	-	-	1.19(18;1.37)	0.19(8;0.18)	2.86(4;5.2)
UPOGEBIA AFFINIS(Megalopa)	-	-	-	-	-	-
UPOGEBIA AFFINIS(Larva)	-	-	-	-	-	-
UPOGEBIA AFFINIS(Mysis)	-	-	-	-	0.78(1;.)	-
BRACHYURA(Zoea)	0.05(4;0.03)	0.05(1;.)	-	4.33(1;.)	2.55(2;3.55)	13.29(1;.)
BRACHYURA(Megalopa)	0.1(10;0.18)	0.03(2;0)	0.04(3;0.01)	0.09(6;0.11)	0.04(4;0.04)	1.18(5;2.31)
BRACHYURA	-	-	-	-	-	-
DORIPPIDAE(Zoea)	0.03(1;.)	0.01(1;.)	-	-	0.04(1;.)	6.59(1;.)
CALAPPIDAE(Zoea)	-	-	-	-	0.08(1;.)	-
CALAPPIDAE(Megalopa)	-	-	-	0.01(1;.)	-	-
CALAPPA(Zoea)	-	0.04(1;.)	-	-	0.77(1;.)	-
CALAPPA(Megalopa)	-	0.01(2;0)	-	0.02(2;0.02)	0.05(4;0.03)	0.02(2;0.01)
CALAPPA FLAMMEA(Megalopa)	-	-	-	-	-	0.02(2;0.01)
CALAPPA SULCATA(Megalopa)	-	-	-	-	-	-
HEPATUS EPHELITICUS(Megalopa)	-	-	-	0.01(2;0.01)	-	-
LEUCOSIIDAE(Zoea)	0.03(1;.)	0.05(1;.)	-	0.67(2;0.53)	1.47(9;2.36)	0.06(3;0.06)
LEUCOSIIDAE(Megalopa)	-	0.02(1;.)	-	-	0.16(3;0.2)	0.2(12;0.29)
PERSEPHONA(Zoea)	-	-	-	-	1.81(3;1.55)	-
PERSEPHONA PUNCTATA(Zoea)	-	-	-	-	-	-
RANINIDAE(Zoea)	-	-	-	0.01(1;.)	-	-
RANINIDAE(Megalopa)	-	-	-	-	-	-
MAJIDAE(Zoea)	-	-	-	-	-	-
MAJIDAE(Megalopa)	-	-	-	-	-	0.03(1;.)
LIBINIA(Zoea)	-	0.08(1;.)	-	3.98(1;.)	-	-
LIBINIA(Megalopa)	-	-	-	-	-	0.16(1;.)

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
LEPIDOPA BENEDICTI(Zoea)	-	-	-	-	-	-
ALBUNEA(Zoea)	-	0.21(3;0.24)	0.05(4;0.06)	0.02(6;0)	-	-
ALBUNEA(Megalopa)	-	-	0.01(3;0)	-	-	-
ALBUNEA PARETII(Zoea)	1.78(2;2.45)	0.33(10;0.3)	0.08(2;0.09)	0.11(4;0.08)	0.08(2;0.1)	0.03(1;.)
ALBUNEA PARETII(Megalopa)	4.22(1;.)	-	-	-	-	-
ALBUNEA PARETII(Larva)	-	0.14(1;.)	-	-	-	-
ALBUNEA PARETII	-	0.54(1;.)	-	-	-	-
ALBUNEA GIBBESI(Zoea)	-	0.51(1;.)	-	-	-	-
HIPPIDAE(Megalopa)	-	-	-	-	0.06(1;.)	-
EMERITA(Postlarva)	-	-	-	-	-	0.02(1;.)
EMERITA TALPOIDA(Zoea)	0.08(2;0.05)	0.05(1;.)	0.09(1;.)	0.08(1;.)	-	-
EMERITA TALPOIDA(Megalopa)	-	-	-	-	-	-
CLIBANARIS(Zoea)	-	-	1.44(1;.)	-	-	-
CLIBANARIS VITTATUS(Zoea)	0.12(3;0.08)	0.74(18;0.84)	0.36(23;0.39)	0.3(3;0.22)	-	-
CLIBANARIS VITTATUS(Megalopa)	0.02(1;.)	-	0.19(7;0.11)	0.16(4;0.11)	0.02(1;.)	-
UPOGEBIA AFFINIS(Zoea)	0.07(5;0.03)	0.21(22;0.2)	0.31(17;0.41)	0.44(15;0.51)	0.04(3;0.03)	0.06(2;0.06)
UPOGEBIA AFFINIS(Megalopa)	-	-	-	0.31(1;.)	-	-
UPOGEBIA AFFINIS(Larva)	0.07(1;.)	0.03(1;.)	-	-	-	-
UPOGEBIA AFFINIS(Mysis)	-	-	-	-	-	-
BRACHYURA(Zoea)	0.96(2;1.04)	1.24(13;2.63)	0.82(12;0.74)	0.04(1;.)	0.08(5;0.07)	0.36(5;0.62)
BRACHYURA(Megalopa)	2.91(1;.)	0.06(2;0.03)	1.29(22;3.67)	0.17(31;0.15)	0.07(16;0.06)	0.05(8;0.04)
BRACHYURA	-	-	5.3(1;.)	-	-	-
DORIPPIDAE(Zoea)	-	0.14(2;0)	-	0.19(3;0.19)	0.06(1;.)	0.05(3;0.06)
CALAPPIDAE(Zoea)	-	0.15(1;.)	0.21(13;0.2)	0.18(6;0.09)	-	-
CALAPPIDAE(Megalopa)	-	0.21(3;0.25)	-	-	-	-
CALAPPA(Zoea)	-	-	-	-	-	-
CALAPPA(Megalopa)	0.01(1;.)	0.01(2;0.01)	0.03(2;0.01)	-	1.73(1;.)	0.01(1;.)
CALAPPA FLAMMEA(Megalopa)	-	0.02(1;.)	0.04(1;.)	-	-	-
CALAPPA SULCATA(Megalopa)	-	-	-	-	0.01(2;0)	-
HEPATUS EPHELITICUS(Megalopa)	-	-	-	-	-	-
LEUCOSIIDAE(Zoea)	0.21(1;.)	0.39(8;0.64)	0.27(15;0.26)	0.28(23;0.19)	0.16(4;0.17)	0.04(1;.)
LEUCOSIIDAE(Megalopa)	-	0.09(3;0.04)	0.13(8;0.18)	1.38(7;2.33)	0.11(5;0.17)	-
PERSEPHONA(Zoea)	-	0.08(2;0.09)	0.23(2;0.2)	-	0.02(1;.)	-
PERSEPHONA PUNCTATA(Zoea)	-	0.09(1;.)	-	-	-	-
RANINIDAE(Zoea)	-	-	-	-	0.04(1;.)	-
RANINIDAE(Megalopa)	-	-	-	-	0.06(1;.)	-
MAJIDAE(Zoea)	-	-	-	-	-	0.03(1;.)
MAJIDAE(Megalopa)	0.03(2;0.01)	1.04(1;.)	-	0.14(1;.)	-	-
LIBINIA(Zoea)	-	-	-	0.34(1;.)	0.05(1;.)	-
LIBINIA(Megalopa)	-	0.08(1;.)	-	1.53(1;.)	0.1(8;0.1)	0.01(1;.)

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
LIBINIA DUBIA(Zoea)	-	-	-	0.15(1;.)	1(2;0.77)	-
LIBINIA DUBIA(Megalopa)	-	-	-	0.24(4;0.28)	0.2(5;0.32)	-
LIBINIA EMARGINATA(Zoea)	-	-	-	-	0.39(1;.)	-
LIBINIA EMARGINATA(Megalopa)	-	-	-	0.02(1;.)	0.1(5;0.16)	-
MITHRAX(Megalopa)	-	-	-	-	-	0.08(2;0.01)
PARTHENOPIDAE(Zoea)	-	0.03(2;0)	-	-	-	-
PARTHENOPIDAE(Megalopa)	-	0.04(2;0.04)	-	0.17(1;.)	0.05(1;.)	0.04(5;0.04)
PARTHENOPE(Megalopa)	-	-	0.02(3;0.01)	0.02(1;.)	0.01(1;.)	-
LEIOLAMBRUS NITIDUS(Megalopa)	0.01(1;.)	-	-	-	0.03(2;0.02)	0.01(1;.)
CANCRIDAE(Zoea)	-	0.06(3;0.08)	-	-	-	-
CANCER IRRORATUS(Zoea)	-	-	-	-	0.35(1;.)	-
PORTUNIDAE(Zoea)	0.08(1;.)	0.16(4;0.14)	-	-	-	0.09(1;.)
PORTUNIDAE(Megalopa)	0.03(2;0.02)	0.01(1;.)	-	0.07(1;.)	-	0.03(2;0.02)
PORTUNIDAE(Juvenile)	-	-	-	-	-	-
ARENAEUS CRIBRARIUS(Zoea)	-	-	-	0.06(1;.)	-	-
ARENAEUS CRIBRARIUS(Megalopa)	0.14(1;.)	0.01(2;0.01)	0.04(2;0.03)	-	-	0.01(1;.)
BATHYNECTES(Megalopa)	-	0.02(1;.)	-	-	-	-
CALLINECTES(Zoea)	0.08(8;0.05)	0.31(12;0.39)	0.02(1;.)	3.76(1;.)	-	4.83(2;6.65)
CALLINECTES(Megalopa)	-	-	-	-	-	0.06(1;.)
CALLINECTES SAPIDUS(Zoea)	0.3(15;0.36)	0.18(14;0.21)	0.07(2;0.06)	3.24(24;4.46)	3.96(24;7.48)	2.11(24;2.93)
CALLINECTES SAPIDUS(Megalopa)	0.03(17;0.03)	0.07(6;0.06)	0.09(13;0.11)	0.04(22;0.04)	0.2(42;0.24)	0.95(84;2.96)
CALLINECTES SAPIDUS(Juvenile)	-	-	-	0.03(2;0.02)	0.01(3;0)	-
CALLINECTES SIMILIS(Zoea)	0.86(31;1.31)	0.29(18;0.26)	0.02(1;.)	6.36(5;12.19)	0.38(3;0.5)	1.58(4;1.63)
CALLINECTES SIMILIS(Megalopa)	0.26(95;0.57)	0.54(93;1.3)	0.23(45;0.45)	0.07(58;0.07)	0.26(38;0.36)	0.25(72;0.41)
CALLINECTES SIMILIS(Larva)	-	-	-	-	-	-
CALLINECTES SIMILIS(Juvenile)	0.04(2;0.03)	0.02(1;.)	-	0.02(3;0.01)	0.11(3;0.12)	0.1(10;0.23)
CALLINECTES SIMILIS	-	-	-	-	-	-
OVALIPES(Zoea)	0.02(1;.)	-	-	-	-	-
OVALIPES(Megalopa)	0.13(4;0.14)	0.03(2;0.03)	0.05(4;0.04)	-	0.01(1;.)	0.04(1;.)
OVALIPES(Juvenile)	-	-	0.03(1;.)	-	-	-
OVALIPES FLORIDANUS(Megalopa)	0.02(1;.)	-	-	-	-	-
OVALIPES FLORIDANUS(Juvenile)	0.05(2;0.04)	0.03(3;0.02)	0.02(1;.)	-	-	-
OVALIPES OCELLATUS(Zoea)	-	-	-	30.43(1;.)	0.04(1;.)	-
OVALIPES OCELLATUS(Juvenile)	-	-	-	0.02(1;.)	-	-
PORTUNUS(Zoea)	0.12(15;0.17)	0.1(13;0.12)	0.09(1;.)	0.18(5;0.23)	0.54(13;0.69)	-
PORTUNUS(Megalopa)	0.04(32;0.04)	0.04(24;0.04)	0.06(24;0.06)	0.24(60;0.58)	0.44(46;1.2)	0.28(76;0.35)
PORTUNUS(Larva)	-	-	-	-	-	-
PORTUNUS(Juvenile)	-	-	-	0.02(4;0.02)	0.02(1;.)	0.04(18;0.02)
PORTUNUS GIBBESI(Zoea)	-	-	-	17.17(2;22.07)	0.81(2;0.93)	4.62(2;3.14)
PORTUNUS GIBBESI(Juvenile)	-	-	-	0.03(1;.)	0.02(2;0.01)	-

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
LIBINIA DUBIA(Zoea)	-	-	1.48(6;1.49)	0.82(3;1.02)	-	-
LIBINIA DUBIA(Megalopa)	-	0.01(1;.)	0.18(2;0)	0.14(2;0.04)	-	-
LIBINIA EMARGINATA(Zoea)	-	8.49(1;.)	-	-	-	-
LIBINIA EMARGINATA(Megalopa)	-	-	0.03(1;.)	-	0.02(1;.)	-
MITHRAX(Megalopa)	-	-	-	-	-	-
PARTHENOPIDAE(Zoea)	-	0.08(1;.)	0.22(1;.)	-	-	0.02(1;.)
PARTHENOPIDAE(Megalopa)	0.01(1;.)	0.27(1;.)	-	0.02(1;.)	0.46(5;0.99)	0.03(2;0.02)
PARTHENOPE(Megalopa)	0.06(2;0.07)	-	-	-	0.01(1;.)	0.02(2;0.02)
LEIOLAMBRUS NITIDUS(Megalopa)	0.01(1;.)	0.07(4;0.12)	-	0.01(1;.)	0.03(2;0.01)	0.03(2;0)
CANCRIDAE(Zoea)	-	-	-	-	-	-
CANCER IRRORATUS(Zoea)	-	-	-	-	-	-
PORTUNIDAE(Zoea)	-	4.16(5;4.59)	12.06(3;7.62)	0.74(2;0.72)	12.43(3;21.32)	4.67(4;7.83)
PORTUNIDAE(Megalopa)	0.01(3;0)	0.18(12;0.37)	0.03(8;0.02)	0.02(2;0.01)	0.02(9;0)	0.03(3;0.03)
PORTUNIDAE(Juvenile)	-	-	-	-	0.02(1;.)	-
ARENAEUS CRIBRARIUS(Zoea)	-	-	-	0.07(1;.)	-	-
ARENAEUS CRIBRARIUS(Megalopa)	0.01(1;.)	0.02(3;0.01)	2.54(6;3.53)	0.01(1;.)	0.02(4;0.01)	-
BATHYNECTES(Megalopa)	-	-	-	-	-	-
CALLINECTES(Zoea)	71.2(1;.)	0.72(2;0.72)	-	-	1.94(2;1.86)	2.83(1;.)
CALLINECTES(Megalopa)	0.05(1;.)	-	-	-	-	-
CALLINECTES SAPIDUS(Zoea)	18.58(33;51.71)	6.4(67;14.34)	1.77(34;1.79)	1.77(31;4.12)	0.26(10;0.67)	1.2(36;1.8)
CALLINECTES SAPIDUS(Megalopa)	0.88(90;2.9)	2.57(122;16.7)	0.99(130;2.2)	0.54(108;0.9)	0.28(128;0.55)	0.17(57;0.81)
CALLINECTES SAPIDUS(Juvenile)	0.04(3;0.04)	0.03(5;0.02)	0.03(2;0.02)	-	0.02(1;.)	-
CALLINECTES SIMILIS(Zoea)	0.15(1;.)	0.36(11;0.22)	0.05(1;.)	0.25(8;0.25)	0.1(5;0.16)	0.39(10;0.53)
CALLINECTES SIMILIS(Megalopa)	0.37(82;1.07)	0.2(75;0.3)	0.25(73;0.34)	0.21(62;0.36)	0.25(107;0.54)	0.61(68;2.13)
CALLINECTES SIMILIS(Larva)	-	-	-	0.02(1;.)	-	-
CALLINECTES SIMILIS(Juvenile)	0.05(6;0.05)	0.02(4;0.01)	0.03(7;0.02)	-	-	-
CALLINECTES SIMILIS	-	-	-	0.01(1;.)	-	-
OVALIPES(Zoea)	-	-	0.15(1;.)	-	-	0.04(1;.)
OVALIPES(Megalopa)	0.04(3;0.05)	-	0.03(1;.)	0.03(1;.)	-	0.02(3;0)
OVALIPES(Juvenile)	-	-	-	-	-	0.02(1;.)
OVALIPES FLORIDANUS(Megalopa)	-	-	-	-	-	-
OVALIPES FLORIDANUS(Juvenile)	-	-	-	-	0.07(4;0.09)	0.02(3;0.01)
OVALIPES OCELLATUS(Zoea)	1.05(1;.)	-	0.61(1;.)	-	-	-
OVALIPES OCELLATUS(Juvenile)	-	-	-	-	-	-
PORTUNUS(Zoea)	0.93(13;1.34)	0.48(11;0.53)	0.25(16;0.27)	0.38(25;0.49)	0.39(5;0.79)	0.08(2;0.04)
PORTUNUS(Megalopa)	0.99(84;3.53)	0.82(88;5.6)	0.17(88;0.28)	0.13(84;0.19)	0.12(80;0.23)	0.07(26;0.08)
PORTUNUS(Larva)	-	-	0.06(2;0.04)	-	-	-
PORTUNUS(Juvenile)	0.05(6;0.04)	0.03(9;0.01)	0.03(8;0.01)	0.03(2;0.01)	0.03(2;0.01)	-
PORTUNUS GIBBESI(Zoea)	-	-	-	-	1.85(2;1.61)	-
PORTUNUS GIBBESI(Juvenile)	-	-	-	-	-	-

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
PORTUNUS SAYI(Megalopa)	-	-	-	-	-	-
PORTUNUS SPINICARPUS(Zoea)	-	-	-	2.34(1;.)	-	-
XANTHIDAE(Zoea)	0.05(1;.)	0.06(3;0.04)	0.02(1;.)	0.47(8;0.32)	1.8(6;2.94)	0.31(1;.)
XANTHIDAE(Megalopa)	-	0.03(3;0.02)	-	0.33(5;0.27)	0.48(17;1.04)	0.38(24;0.52)
XANTHIDAE(Juvenile)	-	-	-	-	-	-
XANTHIDAE(Postlarva)	-	-	-	-	-	0.02(1;.)
EURYPANOPEUS(Zoea)	-	-	-	-	-	-
EURYPANOPEUS(Megalopa)	-	-	-	1.88(1;.)	-	-
EURYPANOPEUS DEPRESSUS(Zoea)	0.03(1;.)	-	-	-	9.58(4;9.24)	-
EURYPANOPEUS DEPRESSUS(Megalopa)	0.01(1;.)	-	-	-	-	0.05(5;0.04)
HEXAPANOPEUS ANGUSTIFRONS(Zoea)	-	0.1(9;0.1)	0.07(9;0.04)	2.93(25;5.55)	1.42(21;2.1)	0.56(12;0.58)
HEXAPANOPEUS ANGUSTIFRONS(Megalopa)	0.01(1;.)	0.01(1;.)	0.01(1;.)	0.08(4;0.08)	0.09(7;0.13)	0.04(7;0.04)
HEXAPANOPEUS ANGUSTIFRONS(Larva)	-	-	-	-	-	-
NEOPANOPE(Zoea)	-	-	-	2.67(3;3.94)	-	-
NEOPANOPE(Megalopa)	-	-	-	-	-	0.02(1;.)
NEOPANOPE TEXANA(Zoea)	-	-	-	0.16(1;.)	-	48.37(2;67.11)
NEOPANOPE PACKARDI(Zoea)	-	-	-	-	-	-
PANOPEUS(Zoea)	-	-	-	0.13(2;0.03)	-	-
PANOPEUS(Megalopa)	-	-	-	-	-	-
PANOPEUS HERBSTII(Zoea)	0.69(2;0.37)	0.01(1;.)	-	0.32(11;0.32)	1.87(20;4.03)	1.13(8;2.22)
PANOPEUS HERBSTII(Megalopa)	-	-	-	-	0.03(1;.)	0.07(1;.)
PANOPEUS HERBSTII(Postlarva)	0.01(1;.)	-	-	-	-	-
RHITHROPANOPEUS HARRISI(Zoea)	-	-	-	0.66(2;0.32)	5.38(2;4.29)	-
RHITHROPANOPEUS HARRISI(Megalopa)	-	-	-	-	0.02(1;.)	0.01(1;.)
EURYTIUM LIMOSUM(Zoea)	-	-	-	0.8(10;0.84)	0.49(2;0.59)	-
EURYTIUM LIMOSUM(Megalopa)	-	-	-	0.64(2;0.9)	0.05(6;0.03)	0.06(8;0.1)
MICROPANOPE SCULPTIPES(Zoea)	-	-	-	-	-	-
MICROPANOPE SCULPTIPES(Megalopa)	-	-	-	-	-	0.04(3;0.03)
MENIPPE(Zoea)	-	-	-	-	-	0.41(5;0.26)
MENIPPE MERCENARIA(Zoea)	-	-	-	0.33(8;0.28)	0.18(4;0.1)	0.2(3;0.16)
MENIPPE MERCENARIA(Megalopa)	-	-	-	0.03(2;0.02)	0.04(2;0.04)	0.08(1;.)
MENIPPE MERCENARIA(Larva)	-	-	-	-	-	-
PILUMNUS FLORIDANUS(Megalopa)	-	-	-	-	0.02(1;.)	-
PILUMNUS FLORIDANUS(Postlarva)	-	-	-	-	0.01(1;.)	-
GONEPLACIDAE(Juvenile)	-	-	-	-	-	-
PINNOTHERIDAE(Zoea)	-	-	-	-	0.63(6;0.39)	-
PINNOTHERIDAE(Megalopa)	-	-	-	-	-	-
PINNOTHERES(Zoea)	-	-	-	-	-	-
PINNOTHERES MACULATUS(Zoea)	-	-	-	-	-	-
PINNIXA(Zoea)	0.03(5;0.01)	0.09(19;0.12)	0.18(13;0.22)	1.9(33;2.15)	0.55(12;0.6)	0.89(18;1.21)

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
PORTUNUS SAYI(Megalopa)	-	-	-	0.06(1;.)	-	-
PORTUNUS SPINICARPUS(Zoea)	-	-	-	-	-	-
XANTHIDAE(Zoea)	1.9(6;2.85)	4.35(8;6.62)	2.85(11;8.35)	0.77(7;1.18)	4.76(1;.)	0.2(2;0.26)
XANTHIDAE(Megalopa)	0.07(8;0.04)	0.08(10;0.06)	1(36;2.39)	0.52(43;0.72)	0.07(14;0.08)	0.02(5;0.01)
XANTHIDAE(Juvenile)	-	-	-	-	0.02(1;.)	-
XANTHIDAE(Postlarva)	-	-	-	-	0.03(1;.)	0.02(1;.)
EURYPANOPEUS(Zoea)	-	0.71(2;0.29)	-	-	-	-
EURYPANOPEUS(Megalopa)	-	0.26(3;0.28)	-	-	-	-
EURYPANOPEUS DEPRESSUS(Zoea)	-	-	-	0.19(2;0.05)	6.67(1;.)	-
EURYPANOPEUS DEPRESSUS(Megalopa)	-	0.13(3;0.15)	-	-	-	-
HEXAPANOPEUS ANGUSTIFRONS(Zoea)	0.99(11;1.35)	0.39(33;0.38)	0.3(29;0.39)	0.98(33;2.81)	0.7(1;.)	1.11(1;.)
HEXAPANOPEUS ANGUSTIFRONS(Megalopa)	0.01(1;.)	0.19(3;0.16)	0.09(1;.)	0.09(1;.)	0.01(1;.)	-
HEXAPANOPEUS ANGUSTIFRONS(Larva)	-	1.41(1;.)	-	-	-	-
NEOPANOPE(Zoea)	0.69(6;1.41)	0.13(1;.)	0.5(4;0.35)	0.11(2;0.03)	-	-
NEOPANOPE(Megalopa)	-	0.04(1;.)	0.13(2;0.08)	-	-	-
NEOPANOPE TEXANA(Zoea)	-	0.17(3;0.02)	0.49(13;0.4)	-	-	0.02(1;.)
NEOPANOPE PACKARDI(Zoea)	-	-	-	2.35(1;.)	-	-
PANOPEUS(Zoea)	-	0.29(11;0.21)	-	-	-	-
PANOPEUS(Megalopa)	-	0.07(2;0)	-	-	-	-
PANOPEUS HERBSTII(Zoea)	1.16(26;1.61)	0.38(17;0.31)	1.7(62;2.76)	1.12(11;1.62)	-	0.1(4;0.15)
PANOPEUS HERBSTII(Megalopa)	-	-	-	-	-	-
PANOPEUS HERBSTII(Postlarva)	-	-	-	-	-	-
RHITHROPANOPEUS HARRISI(Zoea)	-	-	-	-	-	-
RHITHROPANOPEUS HARRISI(Megalopa)	-	-	-	-	-	-
EURYTIUM LIMOSUM(Zoea)	-	0.12(1;.)	-	-	-	-
EURYTIUM LIMOSUM(Megalopa)	0.03(2;0.01)	0.01(2;0)	-	0.38(3;0.6)	-	-
MICROPANOPE SCULPTIPES(Zoea)	-	0.04(2;0.03)	-	-	-	-
MICROPANOPE SCULPTIPES(Megalopa)	-	-	-	-	-	-
MENIPPE(Zoea)	-	0.18(1;.)	-	-	-	-
MENIPPE MERCENARIA(Zoea)	1.23(15;2.75)	0.73(32;0.8)	0.18(11;0.18)	0.12(1;.)	-	-
MENIPPE MERCENARIA(Megalopa)	0.01(2;0)	0.03(1;.)	0.03(6;0.02)	-	-	-
MENIPPE MERCENARIA(Larva)	-	0.13(1;.)	-	-	-	-
PILUMNUS FLORIDANUS(Megalopa)	-	-	-	-	-	-
PILUMNUS FLORIDANUS(Postlarva)	-	-	-	-	-	-
GONEPLACIDAE(Juvenile)	-	-	-	-	-	0.01(1;.)
PINNOTHERIDAE(Zoea)	6.59(2;2.77)	8.14(8;6.45)	7.29(3;10.33)	2.42(7;5.55)	0.11(4;0.05)	0.49(3;0.33)
PINNOTHERIDAE(Megalopa)	7.38(2;1.5)	0.01(1;.)	-	-	-	-
PINNOTHERES(Zoea)	-	0.36(5;0.39)	0.22(1;.)	0.38(2;0.43)	-	-
PINNOTHERES MACULATUS(Zoea)	-	0.11(3;0.05)	-	0.68(1;.)	-	-
PINNIXA(Zoea)	2.98(3;1.9)	0.62(43;0.82)	1.2(43;2.03)	9.3(54;24.8)	1.07(55;2.47)	0.15(26;0.19)

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
PINNIXA(Megalopa)	-	-	0.26(1;.)	-	-	13.19(1;.)
PINNIXA(Larva)	-	-	0.08(1;.)	-	-	-
PINNIXA(Juvenile)	-	-	-	-	-	-
PINNIXA	-	-	-	-	-	-
PINNIXA(Postlarva)	-	-	-	-	0.36(1;.)	-
PINNIXA CHAETOPTERANA(Zoea)	-	-	-	17.38(2;3.54)	2.09(3;1.14)	-
PINNIXA CHAETOPTERANA(Megalopa)	-	-	-	-	-	-
PINNIXA CHAETOPTERANA(Postlarva)	-	-	-	-	-	0.02(1;.)
PINNIXA SAYANA(Zoea)	0.39(3;0.05)	-	-	1.3(3;1.12)	7.07(7;7.78)	-
PINNIXA SAYANA(Megalopa)	-	-	-	-	0.05(1;.)	-
PINNIXA SAYANA(Postlarva)	-	-	-	0.02(1;.)	0.02(1;.)	-
PINNIXA CHACEI(Zoea)	-	0.31(1;.)	-	40.74(6;53.13)	3.22(5;3.81)	39.04(3;30.56)
GRAPSIDAE(Megalopa)	-	-	-	-	-	-
SESARMA(Zoea)	-	-	-	-	-	-
SESARMA(Megalopa)	-	-	-	-	-	-
SESARMA CINEREUM(Zoea)	-	-	-	9.39(1;.)	-	-
SESARMA CINEREUM(Megalopa)	-	-	-	0.02(1;.)	-	-
SESARMA RETICULATUM(Zoea)	-	-	-	-	3.79(2;4.36)	1.51(1;.)
SESARMA RETICULATUM(Megalopa)	-	-	-	-	-	-
PLANES MINUTUS(Zoea)	-	-	-	-	-	-
OCYPODE QUADRATA(Zoea)	-	-	-	0.22(1;.)	0.16(2;0)	0.05(2;0)
OCYPODE QUADRATA(Megalopa)	-	-	0.01(1;.)	-	-	-
UCA(Zoea)	0.38(1;.)	-	-	4.81(19;7.72)	1.61(39;1.69)	4.13(29;6.53)
UCA(Megalopa)	-	-	-	0.44(1;.)	0.29(2;0.27)	4.95(19;10.57)
UCA(Larva)	-	-	-	-	-	-
STOMATOPODA(Zoea)	-	-	-	-	-	6.59(1;.)
STOMATOPODA(Larva)	0.1(19;0.12)	0.04(17;0.05)	0.12(23;0.15)	0.51(19;0.76)	0.68(31;1.19)	0.78(16;0.94)
STOMATOPODA(Juvenile)	-	-	-	-	-	-
STOMATOPODA(Postlarva)	-	-	0.01(1;.)	-	0.45(1;.)	-
STOMATOPODA(Pseudozoea)	-	-	-	-	1.41(1;.)	-
STOMATOPODA(Antizoea)	0.04(1;.)	-	-	-	-	-
SQUILLIDAE(Zoea)	-	-	-	-	-	-
SQUILLIDAE(Larva)	-	-	-	-	-	-
SQUILLIDAE(Postlarva)	-	-	-	-	-	-
SQUILLIDAE(Antizoea)	-	-	-	-	-	-
SQUILLA(Larva)	-	-	-	-	-	-
SQUILLA EMPUSA(Larva)	-	-	-	-	-	-
SQUILLA EMPUSA(Juvenile)	-	-	-	0.04(1;.)	-	-
INSECTA	-	-	-	-	-	-
DIPTERA	-	-	-	-	-	-

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
PINNIXA(Megalopa)	1.46(1;.)	0.91(1;.)	0.11(7;0.06)	1.02(14;1.83)	0.17(13;0.2)	-
PINNIXA(Larva)	-	-	-	-	-	-
PINNIXA(Juvenile)	-	-	-	-	-	0.04(1;.)
PINNIXA	-	0.13(1;.)	-	-	-	-
PINNIXA(Postlarva)	-	-	-	-	-	-
PINNIXA CHAETOPTERANA(Zoea)	0.03(1;.)	0.2(11;0.22)	0.42(7;0.32)	4.27(6;8.65)	45.63(11;83.45)	-
PINNIXA CHAETOPTERANA(Megalopa)	-	0.08(2;0.01)	-	2.35(1;.)	52(1;.)	-
PINNIXA CHAETOPTERANA(Postlarva)	-	-	-	-	-	-
PINNIXA SAYANA(Zoea)	0.36(6;0.42)	0.36(18;0.41)	0.68(14;0.69)	8.89(6;17.68)	1.17(1;.)	8.86(12;8.98)
PINNIXA SAYANA(Megalopa)	-	-	0.16(1;.)	-	-	-
PINNIXA SAYANA(Postlarva)	-	-	-	-	-	-
PINNIXA CHACEI(Zoea)	-	-	-	-	-	-
GRAPSIDAE(Megalopa)	-	0.29(1;.)	-	-	-	-
SESARMA(Zoea)	-	0.01(1;.)	1.14(22;1.3)	0.27(5;0.17)	-	0.06(2;0.06)
SESARMA(Megalopa)	-	0.28(1;.)	-	-	-	-
SESARMA CINEREUM(Zoea)	-	1.59(25;4.11)	2.05(6;1.45)	-	3.1(1;.)	-
SESARMA CINEREUM(Megalopa)	0.01(1;.)	-	-	-	-	-
SESARMA RETICULATUM(Zoea)	0.03(2;0.02)	0.48(12;0.36)	1.52(4;2.26)	-	-	-
SESARMA RETICULATUM(Megalopa)	0.12(1;.)	0.01(1;.)	-	-	-	-
PLANES MINUTUS(Zoea)	-	0.02(1;.)	-	-	-	-
OCYPODE QUADRATA(Zoea)	0.08(2;0.03)	0.31(4;0.21)	0.44(6;0.47)	-	-	-
OCYPODE QUADRATA(Megalopa)	-	-	-	-	-	-
UCA(Zoea)	4.36(37;7.06)	4.84(82;11.61)	6.76(74;8.68)	0.92(38;1.34)	0.02(1;.)	0.67(1;.)
UCA(Megalopa)	1.5(30;3.89)	0.5(48;0.76)	4.48(37;10.36)	0.48(32;0.49)	-	-
UCA(Larva)	-	2.92(2;3.85)	-	-	-	-
STOMATOPODA(Zoea)	-	-	-	0.04(1;.)	-	-
STOMATOPODA(Larva)	0.6(11;0.89)	2.19(15;2.33)	0.47(18;0.75)	0.09(20;0.11)	0.43(10;0.93)	0.07(7;0.06)
STOMATOPODA(Juvenile)	-	-	-	0.1(1;.)	0.19(1;.)	-
STOMATOPODA(Postlarva)	-	-	-	-	-	-
STOMATOPODA(Pseudozoea)	-	-	-	-	-	-
STOMATOPODA(Antizoea)	-	-	-	-	-	-
SQUILLIDAE(Zoea)	-	0.11(3;0.06)	-	-	-	-
SQUILLIDAE(Larva)	-	1.09(7;0.9)	-	-	-	-
SQUILLIDAE(Postlarva)	-	0.04(1;.)	-	-	-	-
SQUILLIDAE(Antizoea)	-	0.44(3;0.32)	-	-	-	-
SQUILLA(Larva)	-	-	0.02((1;.)	-	-	-
SQUILLA EMPUSA(Larva)	-	4.7(1;.)	-	-	-	-
SQUILLA EMPUSA(Juvenile)	-	-	-	-	-	-
INSECTA	0.12(1;.)	12.46(1;.)	-	-	-	-
DIPTERA	-	-	-	-	-	0.18(1;.)

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
PHORONIDA(Actinotrocha)	0.13(1;.)	0.26(6;0.32)	-	-	10.29(3;12.33)	0.15(1;.)
BRYOZOA	-	-	-	-	-	-
BRYOZOA(Cyphonautes larva)	0.6(7;0.57)	0.15(3;0.12)	-	0.76(5;0.36)	1.13(1;.)	-
BRACHIOPODA(Larva)	-	-	-	-	0.95(2;1.26)	-
BRACHIOPODA(Postlarva)	-	-	-	-	-	-
ECHINODERMATA(Larva)	-	-	-	-	-	-
ECHINODERMATA(Juvenile)	-	-	-	-	-	-
ASTEROIDEA(Larva)	-	-	-	-	4.89(1;.)	-
ASTEROIDEA(Postlarva)	-	-	-	-	0.36(2;0)	-
OPHIUROIDEA(Larva)	0.12(2;0.12)	-	-	-	-	2.12(6;2.69)
OPHIUROIDEA(Juvenile)	-	-	-	-	-	-
OPHIUROIDEA(Postlarva)	-	-	-	-	-	-
ECHINOIDEA(Larva)	-	-	-	-	-	-
HOLOTHUROIDEA(Larva)	-	-	3.63(1;.)	-	0.12(1;.)	-
CHAETOGNATHA(Larva)	0.02(1;.)	-	-	-	-	-
CHAETOGNATHA	0.56(28;0.58)	1.53(7;1.63)	4.47(18;5.76)	21(13;20.03)	10.41(40;16.89)	17.43(16;24.91)
SAGITTA(Larva)	0.51(2;0.61)	-	-	1.25(1;.)	-	-
SAGITTA(Juvenile)	2.57(49;3.93)	20.08(50;48.71)	39.86(22;66.59)	42.26(42;54.41)	39.76(57;72.59)	46.6(42;52.03)
SAGITTA	2.73(10;3.74)	0.34(10;0.43)	33.87(9;38.39)	-	13.44(5;14.91)	47.32(3;21.81)
SAGITTA BIPUNCTATA(Juvenile)	-	-	-	-	-	-
SAGITTA BIPUNCTATA	0.69(15;1.07)	0.05(1;.)	-	-	39.08(1;.)	-
SAGITTA DECIPIENS	-	-	-	-	-	-
SAGITTA ENFLATA(Juvenile)	4.17(1;.)	-	-	-	-	-
SAGITTA ENFLATA	1.12(50;1.83)	1.1(33;1.11)	5.07(15;6.32)	7.26(18;17.77)	16.79(19;20.54)	12.56(18;16.99)
SAGITTA HEXAPTERA	0.44(3;0.72)	-	-	-	-	-
SAGITTA MINIMA	0.65(15;0.68)	0.32(6;0.36)	6.06(6;8.6)	-	39.22(1;.)	-
SAGITTA HISPIDA	0.31(23;0.32)	0.99(4;0.61)	1.87(1;.)	0.31(1;.)	20.99(10;21.66)	3.94(1;.)
SAGITTA TENUIS(Juvenile)	-	15.19(23;31.76)	-	-	-	-
SAGITTA TENUIS	1.61(20;3.57)	1.65(14;3.9)	28.63(10;25.07)	22.52(16;37.19)	39.34(45;72.26)	19.4(22;35.78)
SAGITTA FRIDERICI(Juvenile)	-	0.42(2;0.01)	-	0.16(1;.)	-	-
SAGITTA FRIDERICI	5.43(51;15.46)	1.1(25;1.86)	19.25(8;28.07)	13.5(33;25.58)	24.01(57;39.4)	5.34(25;8.1)
SAGITTA SERRATODENTATA	0.23(7;0.22)	0.49(7;0.64)	0.79(1;.)	0.74(6;0.89)	-	0.31(4;0.36)
SAGITTA HELENAE	0.68(18;0.89)	-	0.79(1;.)	0.3(3;0.05)	11.58(4;10.5)	3.98(3;3.47)
PTEROSAGITTA DRACO	0.3(22;0.36)	0.04(2;0.01)	-	0.17(2;0.2)	-	-
KROHNITTA	-	-	-	-	-	5.3(1;.)
KROHNITTA SUBTILIS	0.02(1;.)	-	-	-	-	-
KROHNITTA PACIFICA	0.57(29;1.13)	0.27(2;0.3)	-	0.19(3;0.06)	0.11(2;0.04)	-
UROCHORDATA(Larva)	-	-	-	-	89.5(2;122.2)	-
THALIACEA	-	-	-	-	-	-
DOLIOLIDA(Larva)	0.28(1;.)	-	0.85(1;.)	-	-	-

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
PHORONIDA(Actinotrocha)	0.26(2;0.29)	0.37(14;0.29)	-	-	1.54(4;1.47)	-
BRYOZOA	-	-	0.41(1;.)	-	-	-
BRYOZOA(Cyphonautes larva)	0.38(4;0.3)	15.62(3;21.92)	4.91(12;8.59)	0.97(5;0.88)	0.46(4;0.24)	1.39(4;1.46)
BRACHIOPODA(Larva)	0.05(1;.)	0.13(1;.)	-	0.25(1;.)	0.12(2;0.06)	-
BRACHIOPODA(Postlarva)	-	-	-	-	9.31(1;.)	-
ECHINODERMATA(Larva)	-	-	-	0.59(1;.)	-	-
ECHINODERMATA(Juvenile)	1.97(1;.)	-	-	-	-	-
ASTEROIDEA(Larva)	1.46(1;.)	2.18(1;.)	0.42(2;0.2)	0.63(23;0.7)	-	-
ASTEROIDEA(Postlarva)	1.75(1;.)	-	-	-	-	-
OPHIUROIDEA(Larva)	0.63(8;0.48)	1.83(29;2.83)	0.88(13;0.9)	0.59(16;0.44)	0.63(1;.)	-
OPHIUROIDEA(Juvenile)	15.27(1;.)	-	-	-	-	-
OPHIUROIDEA(Postlarva)	0.52(8;0.59)	0.75(28;0.72)	0.12(1;.)	-	-	-
ECHINOIDEA(Larva)	-	-	-	1.78(1;.)	-	-
HOLOTHUROIDEA(Larva)	1.7(8;2.43)	2.04(28;2.47)	5.6(19;7.17)	0.11(2;0.03)	-	-
CHAETOGNATHA(Larva)	-	-	-	-	-	-
CHAETOGNATHA	1.87(27;3.08)	10.55(28;17.96)	5.63(37;6.79)	6.27(37;9.31)	2.5(28;3.01)	4.31(61;9.71)
SAGITTA(Larva)	-	1.83(1;.)	7.13(2;8.53)	-	-	2.17(1;.)
SAGITTA(Juvenile)	15.29(41;22.95)	24.25(98;33.05)	30.61(94;37.68)	47.27(91;77.59)	41.5(72;59.93)	37.18(90;62.4)
SAGITTA	3.47(3;3.39)	58.9(6;103.3)	5.75(3;4.97)	26.01(8;25.35)	91.6(24;261.3)	37.82(10;34.23)
SAGITTA BIPUNCTATA(Juvenile)	-	0.8(1;.)	-	-	-	-
SAGITTA BIPUNCTATA	-	-	0.1(2;0.06)	6.45(1;.)	0.61(1;.)	1.26(1;.)
SAGITTA DECIPIENS	-	-	0.11(1;.)	-	-	-
SAGITTA ENFLATA(Juvenile)	-	6.22(17;7.01)	1.96(5;2.65)	-	-	5.51(1;.)
SAGITTA ENFLATA	3.83(27;6.08)	30.67(71;107.49)	8.62(53;13.38)	9.77(62;15.06)	23.43(88;35.61)	6.16(80;8.39)
SAGITTA HEXAPTERA	-	-	-	-	-	0.13(1;.)
SAGITTA MINIMA	-	-	12.26(1;.)	-	0.83(1;.)	0.06(4;0.03)
SAGITTA HISPIDA	0.33(6;0.26)	1.46(2;1.04)	1.29(8;1.39)	3.44(20;6.68)	3.84(36;5.27)	1.23(34;2.24)
SAGITTA TENUIS(Juvenile)	-	-	-	-	-	-
SAGITTA TENUIS	3.8(38;10.08)	6.55(36;20.36)	8.11(57;8.95)	15.22(85;23.17)	12.33(66;22.72)	7.36(35;14.56)
SAGITTA FRIDERICI(Juvenile)	-	-	-	-	-	-
SAGITTA FRIDERICI	3.59(40;9.95)	8.92(45;19.92)	7.44(55;7.61)	12.63(59;31.88)	13.4(69;20.26)	8(64;13.07)
SAGITTA SERRATODENTATA	-	-	-	-	0.7(2;0.18)	-
SAGITTA HELENAE	3.71(2;0.79)	3.67(3;3.23)	9.02(10;24.83)	1.41(9;0.96)	1.39(7;0.99)	0.56(23;0.5)
PTEROSAGITTA DRACO	-	-	-	-	0.82(2;0.03)	0.04(4;0.03)
KROHNITTA	-	-	-	-	-	-
KROHNITTA SUBTILIS	-	-	-	-	-	-
KROHNITTA PACIFICA	0.32(2;0.19)	-	0.11(2;0.04)	1.23(6;1.02)	1.4(12;0.81)	0.93(13;1.62)
UROCHORDATA(Larva)	0.21(2;0.2)	-	1.01(1;.)	-	-	-
THALIACEA	-	-	-	210.3(9;224.3)	-	-
DOLIOLIDA(Larva)	-	-	0.97(4;0.39)	-	0.63(1;.)	0.05(1;.)

Table II-C continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
DOLIOLIDA	7.42(29;18.99)	20.21(25;26.93)	851(12;833)	75.1(30;121.5)	272.7(37;464.9)	79.8(28;188.1)
DOLIOLUM	-	-	-	-	-	-
SALPIDA	0.52(3;0.64)	1.73(6;2.37)	0.17(1;.)	4.29(2;2.79)	0.62(2;0.69)	1.96(5;0.67)
SALPIDAE	-	-	-	-	-	-
APPENDICULARIA	40.03(35;90.82)	1.75(18;2.56)	14.09(7;8.65)	57(34;66.5)	49.07(47;60.22)	54.4(39;154.9)
OIKOPLEURA	2.46(4;2.57)	1.65(3;1.38)	0.17(1;.)	-	-	-
CEPHALOCHORDATA(Larva)	-	-	-	-	37.84(1;.)	-
BRANCHIOSTOMA(Larva)	-	-	-	-	-	-
BRANCHIOSTOMA(Postlarva)	-	-	-	-	-	-
AMPHIOXUS LANCEOLATUS	-	-	-	-	-	-

Table II-C continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
DOLIOLIDA	39(33;159.34)	61.2(73;133)	108.9(32;292.8)	107(81;241.2)	37.7(86;81.47)	14.51(33;25.41)
DOLIOLUM	-	-	3.99(3;3.71)	-	-	-
SALPIDA	10.04(4;15.86)	2.78(18;4.59)	4.47(5;6.73)	2.29(27;3.54)	4.36(8;4.44)	2.38(21;2.21)
SALPIDAE	-	-	-	-	1.19(6;1)	-
APPENDICULARIA	21.02(44;39.17)	65.3(94;137.8)	11.32(52;27.52)	35.18(45;84.35)	74.2(38;96.8)	76.5(65;150)
OIKOPLEURA	-	-	147.1(22;160.7)	52.3(29;96.1)	40.95(27;74.25)	-
CEPHALOCHORDATA(Larva)	-	0.03(2;0)	-	-	-	-
BRANCHIOSTOMA(Larva)	-	-	-	-	-	0.29(2;0.34)
BRANCHIOSTOMA(Postlarva)	-	-	-	-	-	0.09(1;.)
AMPHIOXUS LANCEOLATUS	-	-	-	-	-	0.24(6;0.24)

Table II-D. Monthly mean densities (no./100m^3; with the number of positive samples and standard deviations in parenthesis) for ichthyoplankton taxa collected with a 0.5-m, 0.153-mm mesh, plankton net between February 1978 and December 1995 during the LOOP Environmental Monitoring Project. Taxonomic order within table was determined by the National Oceanographic Data Center (NODC) code.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
OSTEICHTHYES	50.6(12;45.3)	5.36(1;.)	334.2(8;783.4)	372.3(26;591)	149.7(14;187.9)	1052(15;1752)
ELOPS SAURUS	-	-	-	17.87(1;.)	-	-
ANGUILLIFORMES	7.58(1;.)	-	-	-	-	-
OPHICHTHIDAE	2.95(1;.)	-	-	-	-	-
MYROPHIS PUNCTATUS	13.58(9;5.49)	15.1(10;8.78)	7.71(3;1.89)	167.2(5;212.1)	15.44(4;16.1)	10.02(2;0.32)
CLUPEIFORMES	13.61(2;3.08)	53.6(1;.)	171.7(1;.)	31.39(3;36.17)	468.4(3;628.5)	30.59(1;.)
CLUPEIDAE	-	7.82(2;3.49)	1394(1;.)	147.6(4;161.3)	18.46(2;13.71)	9.05(1;.)
BREVOORTIA	10.12(2;6.72)	15.58(7;21.01)	62.3(8;104.1)	22.51(5;23.01)	-	-
BREVOORTIA GUNTERI	15.19(1;.)	-	8.79(2;3.19)	51.8(2;52.2)	-	-
BREVOORTIA PATRONUS	83(63;185.2)	172.8(62;535.1)	85.6(50;216.1)	326.9(28;1242.3)	8.91(6;4.45)	5.22(1;.)
DOROSOMA PETENENSE	-	-	-	-	-	6.05(1;.)
OPISTHONEMA OGLINUM	-	-	-	-	21.65(5;9.86)	33.53(10;52.25)
HARENGULA JAGUANA	-	10.14(1;.)	-	13.24(1;.)	6.77(2;0.36)	7.81(2;2.83)
HARENGULA PENSACOLAE	-	-	-	7.29(3;1.6)	64.3(2;69.4)	28.41(3;5.04)
SARDINELLA	-	-	-	-	-	-
SARDINELLA ANCHOVIA	-	5.78(1;.)	-	-	-	-
ENGRAULIDAE	19.27(7;20.36)	40.86(15;75.43)	101.3(10;205.2)	160.9(67;341.3)	222.5(50;742.8)	249(69;698.9)
ANCHOA	-	-	-	126.2(16;290)	302.9(26;890.3)	40.28(25;58.76)
ANCHOA HEPSETUS	-	-	-	15.42(6;16.44)	53.6(4;83.3)	22.69(5;25.11)
ANCHOA MITCHILLI	60.4(30;80.2)	27.43(20;24.35)	41.95(16;50)	31.5(8;26.49)	123.8(17;308.2)	40.03(21;41.21)
ANCHOA NASUTA	-	4.75(1;.)	-	-	-	-
ANCHOVIELLA PERFASCIATA	-	9.2(2;5.43)	-	-	-	-
GONOSTOMATIDAE	-	-	-	-	-	-
VINCIGUERRIA	-	-	6.46(1;.)	-	-	-
VINCIGUERRIA NIMBARIA	5.82(1;.)	4.84(1;.)	-	-	-	-
SYNODONTIDAE	-	-	-	-	11.17(1;.)	-
PARALEPIDIDAE	5.82(1;.)	-	-	-	-	-
MYCTOPHIDAE	6.69(2;1.65)	21.44(1;.)	-	-	4.53(1;.)	12.93(1;.)
DIOGENICHTHYS ATLANTICUS	-	4.84(1;.)	-	-	-	-
BATRACHOIDIDAE	-	-	-	-	226.4(1;.)	-
GOBIESOCIDAE	-	-	-	-	-	-
GOBIESOX STRUMOSUS	-	-	7.2(5;2.57)	8.97(11;4.27)	5.39(1;.)	10.45(1;.)
BREGMACEROS	-	5.07(1;.)	-	-	-	-
BREGMACEROS CANTORI	11.58(1;.)	-	-	-	-	-
UROPHYCIS	6.84(2;1.44)	-	-	-	-	-

Table II-D continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
OSTEICHTHYES	706(20;1732)	420.9(22;744.3)	1309(37;4107)	417.2(21;960.2)	11091(15;35622)	7895(13;28262)
ELOPS SAURUS	-	-	-	-	-	5.08(1;.)
ANGUILLIFORMES	-	-	-	-	-	-
OPHICHTHIDAE	-	-	-	-	-	-
MYROPHIS PUNCTATUS	6.95(1;.)	-	-	-	5.29(2;1.08)	-
CLUPEIFORMES	182.7(6;379.2)	-	713(2;970)	-	10.22(1;.)	-
CLUPEIDAE	95(9;176.5)	107.1(12;107.7)	193.6(2;256.6)	2.91(1;.)	8.16(4;4.15)	7.28(1;.)
BREVOORTIA	-	-	-	-	46.45(1;.)	29.78(4;21.1)
BREVOORTIA GUNTERI	-	-	-	-	57.1(1;.)	-
BREVOORTIA PATRONUS	7.5(2;3.23)	-	24.25(1;.)	43.37(10;92.25)	22.62(33;27.3)	23.65(33;29.92)
DOROSOMA PETENENSE	-	-	-	-	-	-
OPISTHONEMA OGLINUM	12.93(6;15.55)	38.2(22;40.58)	24.59(15;28.2)	5.31(1;.)	10.61(2;2)	-
HARENGULA JAGUANA	-	25.22(2;22.53)	-	4.66(1;.)	-	-
HARENGULA PENSACOLAE	27.84(4;29.76)	10.25(9;4.19)	22.36(5;19.76)	-	-	-
SARDINELLA	-	-	-	15.5(1;.)	-	-
SARDINELLA ANCHOVIA	-	-	-	-	-	-
ENGRAULIDAE	182.2(64;372.7)	147.6(43;322.3)	159.8(61;494.5)	15.61(8;17.46)	34.47(8;58.58)	15.74(3;15.45)
ANCHOA	610(21;2470)	201.7(39;227.7)	75.3(19;199.6)	13.22(7;13.03)	-	-
ANCHOA HEPSETUS	-	45.32(3;26.86)	11.66(3;8.84)	23.09(2;27.85)	-	-
ANCHOA MITCHILLI	52.7(26;87.3)	30.05(21;43.27)	23.91(25;25.22)	40.03(12;67.17)	22.87(13;40.15)	33.61(11;48.39)
ANCHOA NASUTA	-	-	-	-	-	-
ANCHOVIELLA PERFASCIATA	-	-	-	-	-	-
GONOSTOMATIDAE	18.09(1;.)	-	-	-	-	-
VINCIGUERRIA	-	-	-	-	-	-
VINCIGUERRIA NIMBARIA	-	-	-	-	-	-
SYNODONTIDAE	-	-	-	-	-	-
PARALEPIDIDAE	-	-	-	-	-	-
MYCTOPHIDAE	-	-	-	-	10.45(1;.)	7.82(1;.)
DIOGENICHTHYS ATLANTICUS	-	-	-	-	-	-
BATRACHOIDIDAE	-	-	-	-	-	-
GOBIESOCIDAE	-	-	-	-	4.53(1;.)	-
GOBIESOX STRUMOSUS	-	8.06(1;.)	-	8.18(1;.)	-	-
BREGMACEROS	-	-	-	-	-	-
BREGMACEROS CANTORI	7.07(2;0.3)	-	-	-	10.41(1;.)	-
UROPHYCIS	-	-	-	-	-	9.08(3;6.48)

Table II-D continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
ATHERINIFORMES	-	-	9.61(1;.)	-	-	-
EXOCOETIDAE	-	-	-	-	-	8.62(1;.)
HYPORHAMPHUS UNIFASCIATUS	-	-	-	11.02(1;.)	-	-
CYPRINODONTIDAE	-	5.66(1;.)	-	-	-	-
FUNDULUS GRANDIS	488.1(1;.)	-	-	-	-	-
GAMBUSIA AFFINIS	10.78(1;.)	7.77(2;4.01)	-	-	13581(1;.)	6.93(2;1.24)
POECILIA LATIPINNA	9.49(1;.)	-	-	-	-	-
ATHERINIDAE	84(2;105.8)	65.4(5;97.7)	24.83(12;24.25)	40.15(30;57.46)	20.49(22;23.93)	7.79(14;2.75)
MEMBRAS MARTINICA	7(1;.)	20.58(1;.)	10.1(3;1.88)	86.6(12;161.7)	140.6(3;144)	5.47(6;1.55)
MENIDIA	-	50.8(5;61.1)	58(5;110.5)	37.29(16;33.86)	8.01(2;2.79)	23.82(5;28.15)
MENIDIA BERYLLINA	72.6(3;108.7)	87.3(1;.)	-	77.9(4;54)	27.84(4;22.52)	13.92(6;11.89)
MENIDIA MENIDIA	-	-	-	19.4(1;.)	-	-
SYNGNATHIDAE	-	-	-	-	-	-
SYNGNATHUS	-	15.31(2;7.1)	5.85(1;.)	12.47(6;8.71)	7.23(2;2.56)	12.36(2;7.15)
SYNGNATHUS LOUISIANAE	-	8.49(1;.)	-	11(3;3.04)	13.43(2;6.46)	-
SYNGNATHUS SCOVELLI	-	6.75(2;1.08)	-	12.13(1;.)	-	-
HIPPOCAMPUS ZOSTERAE	-	-	-	-	-	-
SCORPAENA	-	-	-	-	8.86(1;.)	-
PERCIFORMES	5.52(1;.)	22.88(4;19.28)	14.23(3;11.51)	72.5(11;138.8)	152.3(8;401)	54.4(17;59.8)
SERRANIDAE	6.48(1;.)	-	-	-	-	-
SERRANUS	-	-	-	-	5.06(1;.)	-
CENTRARCHIDAE	-	12.67(1;.)	-	-	-	-
POMATOMUS SALTATRIX	-	-	-	-	-	-
CARANGIDAE	-	-	-	-	22.67(1;.)	66.9(3;60.9)
TRACHURUS LATHAMI	-	-	-	-	-	-
CARANX	-	-	-	-	-	-
CHLOROSCOMBRUS CHRYSURUS	-	-	-	-	5.56(1;.)	8.64(9;6.73)
OLIGOPLITES SAURUS	-	-	-	-	-	4.71(1;.)
SELAR CRUMENOPHTHALMUS	-	-	-	-	-	-
SELENE	-	-	-	-	-	-
SERIOLA	-	-	-	-	-	-
DECAPTERUS PUNCTATUS	-	-	-	-	-	-
LUTJANUS	-	-	-	-	-	-
GERREIDAE	-	-	-	-	-	-
EUCINOSTOMUS	-	-	-	-	6.09(1;.)	-
ORTHOPRISTIS CHRYSOPTERA	-	-	-	-	-	-
SPARIDAE	-	6.91(1;.)	6.37(1;.)	5.07(1;.)	144.9(1;.)	-
LAGODON RHOMBOIDES	20.14(4;19.32)	41.17(6;51.04)	53.9(3;71.9)	17.02(3;6.55)	7.61(1;.)	-
ARCHOSARGUS PROBATOCEPHALUS	10.61(4;2.68)	-	-	6.3(4;2.09)	9.92(1;.)	-
SCIAENIDAE	14.15(1;.)	10.29(1;.)	15.43(1;.)	22.96(3;15.56)	6.36(3;1.18)	9.7(1;.)

Table II-D continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
ATHERINIFORMES	-	-	-	-	-	-
EXOCOETIDAE	-	-	-	-	-	-
HYPORHAMPHUS UNIFASCIATUS	-	-	-	-	-	-
CYPRINODONTIDAE	-	-	-	-	-	5.32(1;.)
FUNDULUS GRANDIS	-	-	-	-	-	-
GAMBUSIA AFFINIS	16.17(1;.)	30.89(1;.)	31.34(1;.)	-	-	-
POECILIA LATIPINNA	-	-	-	-	-	5.81(2;1.35)
ATHERINIDAE	18.98(26;30.83)	14.29(15;9.86)	13.39(9;15.79)	-	9.35(1;.)	-
MEMBRAS MARTINICA	31.63(14;35.58)	8.18(1;.)	9.03(5;2.61)	-	-	-
MENIDIA	38.77(6;35.76)	-	23.15(1;.)	-	6.32(1;.)	-
MENIDIA BERYLLINA	22.78(12;19.8)	165(5;340.6)	7.55(1;.)	7.46(1;.)	-	-
MENIDIA MENIDIA	-	-	-	-	-	-
SYNGNATHIDAE	10.47(2;4.8)	-	-	-	-	-
SYNGNATHUS	3.74(1;.)	10.62(1;.)	6.39(2;1.18)	8.21(2;0.04)	42.37(1;.)	6.39(2;1.13)
SYNGNATHUS LOUISIANAE	9.49(1;.)	5.13(1;.)	-	-	7.72(1;.)	-
SYNGNATHUS SCOVELLI	5.22(1;.)	-	-	-	-	-
HIPPOCAMPUS ZOSTERAE	-	-	-	-	9.28(1;.)	-
SCORPAENA	-	-	-	-	-	-
PERCIFORMES	179(21;700.5)	76.5(10;109.2)	34.6(10;37.16)	34.07(9;27.86)	29.31(5;45.99)	28.43(1;.)
SERRANIDAE	-	-	-	-	-	-
SERRANUS	-	-	-	-	-	-
CENTRARCHIDAE	-	-	-	-	-	-
POMATOMUS SALTATRIX	-	-	-	13.01(2;10.26)	7.51(1;.)	8.13(1;.)
CARANGIDAE	31.91(3;27.15)	6.61(3;2.3)	15.13(3;11.25)	5.45(5;1.27)	-	-
TRACHURUS LATHAMI	9.84(1;.)	-	-	-	-	-
CARANX	-	-	-	20.26(1;.)	-	-
CHLOROSCOMBRUS CHRYSURUS	909(21;3637)	131.5(32;260.3)	28.18(21;30.2)	46.55(4;77.13)	-	-
OLIGOPLITES SAURUS	61.4(5;114)	9.29(1;.)	-	-	-	-
SELAR CRUMENOPHTHALMUS	5.18(1;.)	-	-	9.31(1;.)	-	-
SELENE	-	-	-	7.39(1;.)	-	-
SERIOLA	-	-	-	20.26(1;.)	-	-
DECAPTERUS PUNCTATUS	-	-	-	37.11(3;55.59)	-	-
LUTJANUS	-	7.44(1;.)	-	-	-	-
GERREIDAE	5.77(1;.)	5.97(1;.)	-	-	-	-
EUCINOSTOMUS	-	-	-	-	-	-
ORTHOPRISTIS CHRYSOPTERA	-	-	7.22(1;.)	-	-	-
SPARIDAE	-	-	-	-	-	7.28(1;.)
LAGODON RHOMBOIDES	-	-	-	-	15.98(1;.)	10.26(2;6.07)
ARCHOSARGUS PROBATOCEPHALUS	-	-	-	-	-	-
SCIAENIDAE	33.81(6;33.02)	162.5(4;211.1)	24.92(7;25.44)	-	5.11(1;.)	-

Table II-D continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
CYNOSCION	-	-	-	-	25.78(1;.)	-
CYNOSCION NEBULOSUS	-	-	-	-	7.33(1;.)	148.3(5;135.2)
CYNOSCION ARENARIUS	-	9.44(3;1.11)	7.31(1;.)	25.39(3;27.07)	16.74(6;14.47)	5.66(1;.)
BAIRDIELLA CHRYSOURA	-	-	-	11.62(5;6.4)	7.4(2;2.61)	-
LEIOSTOMUS XANTHURUS	22.53(2;18.15)	109.6(5;193.6)	-	-	-	-
LARIMUS FASCIATUS	-	-	-	-	-	42.44(1;.)
MENTICIRRHUS	-	7.51(1;.)	-	10.61(3;3.61)	6(2;1.45)	12.46(3;12.55)
MICROPOGONIAS UNDULATUS	14.08(3;10.02)	-	-	-	7.32(1;.)	5.68(2;2.07)
POGONIAS CROMIS	65.6(5;84.3)	21.24(3;14.52)	6.29(2;2.02)	8.24(7;3.36)	-	-
SCIAENOPS OCELLATUS	-	10.29(1;.)	-	-	-	6.42(1;.)
STELLIFER LANCEOLATUS	-	-	-	6.69(1;.)	-	-
MULLIDAE	-	-	-	8.83(1;.)	-	-
CHAETODIPTERUS FABER	-	-	-	-	-	9.42(1;.)
MUGIL	-	-	-	-	-	-
MUGIL CEPHALUS	21.3(5;19.78)	12.17(2;10.23)	21.9(2;24.35)	-	-	5.22(1;.)
SPHYRAENA	-	-	-	-	-	5.29(1;.)
LABRIDAE	-	-	5.49(1;.)	-	-	-
BLENNIIDAE	7.07(1;.)	15.26(2;1.15)	-	24.95(36;29.73)	31.17(25;64.42)	19.15(24;25.31)
HYPSOBLENNIUS	-	-	-	-	8.01(1;.)	-
GOBIIDAE	23.33(3;10.63)	25.84(7;26.06)	24.75(5;16.91)	39.55(35;59.35)	42.31(27;86.9)	17.59(19;16.23)
MICRODESMIDAE	-	-	-	11.07(1;.)	-	-
MICRODESMUS	5.52(1;.)	-	-	13.24(1;.)	-	-
TRICHIURUS LEPTURUS	-	-	-	-	13.87(2;12.45)	3.57(1;.)
SCOMBRIDAE	-	-	-	-	-	-
EUTHYNNUS ALLETTERATUS	-	-	-	-	-	18.09(1;.)
SCOMBEROMORUS	-	-	-	-	6.81(1;.)	147.4(1;.)
SCOMBEROMORUS CAVALLA	-	-	-	-	-	-
SCOMBEROMORUS MACULATUS	-	-	-	-	-	273.8(2;185.9)
AUXIS	-	-	-	-	-	-
ARIOMMA	5.65(2;0.19)	-	-	-	-	-
CUBICEPS PAUCIRADIATUS	-	-	-	-	-	-
PEPRILUS PARU	-	-	-	-	-	-
PEPRILUS BURTI	5.82(1;.)	8.4(2;0.96)	-	12.82(1;.)	-	-
PEPRILUS ALEPIDOTUS	-	-	-	-	-	-
PLEURONECTIFORMES	-	-	-	24.72(7;25.89)	-	726(6;1255)
PLEURONECTOIDEI	-	-	-	-	-	17.46(1;.)
BOTHIDAE	-	-	-	-	-	28.33(1;.)
CITHARICHTHYS	-	8.7(1;.)	-	-	-	-
CITHARICHTHYS SPILOPTERUS	-	-	-	-	-	-
ETROPUS CROSSOTUS	-	8.7(1;.)	-	-	6.72(1;.)	8.41(2;1.88)

Table II-D continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
CYNOSCION	-	14.45(5;8.52)	19.13(2;15.89)	-	-	-
CYNOSCION NEBULOSUS	27.15(9;34.48)	16.74(7;11.84)	26.86(9;20.97)	-	-	-
CYNOSCION ARENARIUS	16.61(14;14.68)	89.2(13;170)	15.86(11;17.38)	8.24(1;.)	-	-
BAIRDIELLA CHRYSOURA	4.2(1;.)	7.41(1;.)	18.22(1;.)	-	-	-
LEIOSTOMUS XANTHURUS	-	-	-	-	-	8(2;6.43)
LARIMUS FASCIATUS	-	-	-	5.38(1;.)	-	-
MENTICIRRHUS	12.27(2;10.38)	10.61(8;3.61)	23.04(5;21.69)	3.73(2;0.48)	-	-
MICROPOGONIAS UNDULATUS	-	8.56(1;.)	35.93(1;.)	15.12(2;12.75)	6.6(3;3.21)	-
POGONIAS CROMIS	-	-	-	-	-	10.23(1;.)
SCIAENOPS OCELLATUS	-	44.05(7;81.57)	46.39(13;101.5)	11.64(4;11.27)	-	-
STELLIFER LANCEOLATUS	-	37.04(1;.)	-	-	-	-
MULLIDAE	5.18(1;.)	-	-	-	8.24(1;.)	-
CHAETODIPTERUS FABER	5.89(1;.)	8.87(4;4.53)	-	-	-	-
MUGIL	-	-	-	-	6.17(1;.)	-
MUGIL CEPHALUS	-	-	-	-	9.81(4;6.04)	10.17(3;3.89)
SPHYRAENA	-	-	4.28(1;.)	-	-	-
LABRIDAE	-	-	-	-	-	-
BLENNIIDAE	38.88(17;64.77)	9.38(16;4)	10.17(17;4.56)	8.45(6;5.27)	8.86(2;1.91)	12.31(3;6.28)
HYPSOBLENNIUS	-	7.02(1;.)	-	-	-	-
GOBIIDAE	24.31(37;33.76)	18.77(26;19.01)	151.4(46;689.5)	47.68(19;53.94)	1339(2;1880)	7.45(1;.)
MICRODESMIDAE	-	-	-	-	-	-
MICRODESMUS	-	-	-	8.02(2;3.8)	-	-
TRICHIURUS LEPTURUS	-	-	-	-	-	-
SCOMBRIDAE	4.93(1;.)	-	6.4(2;0.04)	7.44(1;.)	-	-
EUTHYNNUS ALLETTERATUS	6(4;2.09)	4.96(1;.)	-	-	-	-
SCOMBEROMORUS	-	-	18.22(1;.)	-	-	-
SCOMBEROMORUS CAVALLA	8.27(1;.)	-	-	-	-	-
SCOMBEROMORUS MACULATUS	5.48(2;0.77)	9.25(5;2.75)	8.18(1;.)	-	-	-
AUXIS	4.56(1;.)	-	19.28(3;10.59)	12.36(2;2.27)	-	-
ARIOMMA	-	-	-	-	-	8.13(1;.)
CUBICEPS PAUCIRADIATUS	-	-	-	-	5.88(1;.)	-
PEPRILUS PARU	-	-	-	20.26(1;.)	-	-
PEPRILUS BURTI	-	-	-	14.35(5;14.92)	10.45(1;.)	8.19(1;.)
PEPRILUS ALEPIDOTUS	-	10.25(3;3.46)	-	-	-	-
PLEURONECTIFORMES	117.5(5;228)	-	46.57(3;64.69)	-	6.93(1;.)	-
PLEURONECTOIDEI	-	-	-	-	-	-
BOTHIDAE	1183(1;.)	-	152(1;.)	-	1366(1;.)	-
CITHARICHTHYS	-	-	-	-	-	-
CITHARICHTHYS SPILOPTERUS	-	9.01(1;.)	-	-	6.93(1;.)	-
ETROPUS CROSSOTUS	-	-	-	-	-	-

Table II-D continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
PARALICHTHYS	8.39(2;1.86)	-	-	8.08(1;.)	-	-
BOTHUS	-	-	-	-	-	-
BOTHUS OCELLATUS	3.8(1;.)	-	-	-	-	-
SYACIUM	-	-	-	-	-	-
SOLEIDAE	-	-	-	-	-	-
TRINECTES MACULATUS	-	-	-	-	-	-
ACHIRUS LINEATUS	-	-	-	-	5.56(1;.)	-
CYNOGLOSSIDAE	-	-	-	54.8(1;.)	-	-
SYMPHURUS	-	-	-	75.2(6;152.5)	-	-
SYMPHURUS PLAGIUSA	-	-	-	-	-	-
TETRAODONTIFORMES	-	-	7.93(1;.)	-	-	-
MONACANTHUS	-	-	-	-	-	-
MONACANTHUS HISPIDUS	-	-	-	-	-	-
TETRAODONTIDAE	-	-	-	13.94(1;.)	-	-
SPHOEROIDES	-	17.36(2;4.12)	13.04(1;.)	16.36(16;13.59)	6.09(5;1.02)	11.68(2;8.1)
CHILOMYCTERUS SCHOEPFI	-	-	-	-	-	6.37(1;.)

Table II-D continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
PARALICHTHYS	-	-	-	-	-	-
BOTHUS	-	-	-	178.3(1;.)	-	-
BOTHUS OCELLATUS	-	-	-	-	-	-
SYACIUM	9.87(1;.)	-	-	14.26(1;.)	-	-
SOLEIDAE	12.72(3;8.34)	-	-	-	-	-
TRINECTES MACULATUS	7.72(1;.)	-	-	-	-	-
ACHIRUS LINEATUS	5.84(1;.)	-	-	-	-	-
CYNOGLOSSIDAE	-	-	8.24(1;.)	-	-	-
SYMPHURUS	21.35(5;31.6)	11.68(2;3.64)	25.58(2;28.72)	8.68(1;.)	-	-
SYMPHURUS PLAGIUSA	11.32(1;.)	-	-	-	-	-
TETRAODONTIFORMES	-	-	-	-	-	-
MONACANTHUS	-	-	-	-	-	7.19(1;.)
MONACANTHUS HISPIDUS	-	-	-	-	4.67(1;.)	-
TETRAODONTIDAE	-	-	-	-	-	-
SPHOEROIDES	-	-	-	-	-	-
CHILOMYCTERUS SCHOEPFI	-	-	-	-	-	.(.;.)

Table II-E. Monthly mean densities (no./100m^3; with the number of positive samples and standard deviations in parenthesis) for ichthyoplankton taxa collected with a 1-m, 0.363-mm mesh, plankton net between February 1978 and December 1995 during the LOOP Environmental Monitoring Project. Taxonomic order within table was determined by the National Oceanographic Data Center (NODC) code.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
OSTEICHTHYES	2.12(6;1.09)	1.67(5;1.13)	44.62(2;57.37)	2.88(10;3.56)	5.52(6;3.87)	72.7(5;97.9)
ELOPIDAE	0.29(1;.)	-	-	-	-	-
ANGUILLIFORMES	1.05(4;0.55)	1(3;0.24)	1.25(1;.)	-	-	6.4(1;.)
MORINGUIDAE	1.37(1;.)	-	-	-	-	-
NEOCONGER MUCRONATUS	-	-	-	-	-	-
MURAENIDAE	-	0.62(1;.)	-	0.4(1;.)	0.38(1;.)	1.37(1;.)
GYMNOTHORAX	-	-	-	-	0.27(1;.)	-
HOPLUNNIS	0.64(2;0.34)	-	-	-	-	-
NETTASTOMATIDAE	0.59(2;0.37)	0.68(2;0.15)	-	-	-	-
CONGRIDAE	-	-	-	-	0.6(1;.)	-
OPHICHTHIDAE	2.16(11;1.64)	3.25(6;5.51)	-	0.79(3;0.51)	0.74(1;.)	1(3;0.42)
BASCANICHTHYS BASCANIUM	-	-	-	-	-	0.99(1;.)
MYROPHIS	-	-	-	-	-	-
MYROPHIS PUNCTATUS	2.64(18;3.15)	7.55(21;23.47)	2.8(7;2.41)	1.99(1;.)	4.76(1;.)	0.82(2;0.39)
OPHICHTHUS	-	-	-	0.72(1;.)	-	-
OPHICHTHUS GOMESI	-	-	-	-	-	-
PSEUDOMYROPHIS	-	-	-	-	-	-
CLUPEIFORMES	2.31(4;2.72)	33.45(3;41.58)	1.45(1;.)	199.5(10;480.9)	146(3;133.6)	4.47(7;5.96)
CLUPEIDAE	71.4(3;104.8)	11.06(8;23.9)	2.59(1;.)	2.61(2;1.84)	2.08(1;.)	2.05(5;1.5)
BREVOORTIA	7.14(2;8.85)	2.11(2;0.21)	1.01(1;.)	0.57(1;.)	-	-
BREVOORTIA GUNTERI	13.58(11;26.33)	2.15(5;2.45)	3.13(7;2.34)	-	-	-
BREVOORTIA PATRONUS	121.5(97;326.6)	63(88;157)	100.3(55;146.6)	19.09(19;62.87)	1.14(2;0.08)	29.28(3;47.44)
ETRUMEUS TERES	3.79(18;4.66)	44.35(15;165.55)	6.42(8;8.45)	1.19(2;0.61)	-	-
OPISTHONEMA OGLINUM	-	-	41.4(2;10.82)	13.25(15;40.45)	2.9(10;2.09)	33.42(16;70.43)
HARENGULA JAGUANA	-	-	43.14(2;6.2)	19.17(24;34.21)	7.87(17;12.38)	68.5(24;170.5)
HARENGULA PENSACOLAE	-	-	-	-	2(4;1.41)	1.66(2;0.95)
SARDINELLA	-	-	-	2.42(2;2.35)	-	-
ENGRAULIDAE	14.18(13;39.47)	9.14(36;21.16)	30.84(23;109.7)	78.9(87;132.3)	297.4(62;734.6)	255.2(87;1130.6)
ANCHOA	-	-	-	459.2(3;750.2)	6.83(2;9.22)	10.07(5;11.69)
ANCHOA HEPSETUS	-	2.67(1;.)	-	1.28(2;1.11)	0.54(2;0.32)	-
ANCHOA MITCHILLI	-	37.43(1;.)	1.2(1;.)	-	23.88(2;33.16)	2.27(3;1.64)
ANCHOVIELLA	-	0.98(1;.)	-	-	-	-
ANCHOVIELLA PERFASCIATA	-	-	-	-	-	-
GONOSTOMATIDAE	3.27(21;4.89)	3.13(8;4.02)	1.62(6;1.31)	1.63(9;2.07)	-	1.99(2;0.04)
CYCLOTHONE	13.3(8;19.04)	2.73(12;2.11)	5.51(6;5.36)	0.73(4;0.44)	1.51(5;0.94)	-

Table II-E continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
OSTEICHTHYES	9.9(2;13.58)	27.62(5;60.05)	187.1(3;320.2)	9.83(7;13.94)	16.27(2;21.84)	33.76(6;65.24)
ELOPIDAE	-	-	-	-	-	-
ANGUILLIFORMES	52.1(2;71.1)	0.67(4;0.39)	-	-	0.35(1;.)	2.86(2;3.6)
MORINGUIDAE	-	-	-	-	-	-
NEOCONGER MUCRONATUS	-	-	-	1.3(3;0.45)	-	-
MURAENIDAE	1.3(2;1.41)	-	-	-	-	-
GYMNOTHORAX	0.81(3;0.1)	1.54(2;0.12)	0.82(1;.)	-	-	5.41(1;.)
HOPLUNNIS	-	-	-	-	-	-
NETTASTOMATIDAE	-	-	-	-	-	0.52(3;0.34)
CONGRIDAE	2.66(1;.)	-	-	-	-	-
OPHICHTHIDAE	0.29(1;.)	2.77(1;.)	1.13(1;.)	6.88(2;6.36)	6.62(6;14.01)	3.09(1;.)
BASCANICHTHYS BASCANIUM	-	-	1.13(1;.)	-	-	-
MYROPHIS	-	-	-	2.33(1;.)	-	-
MYROPHIS PUNCTATUS	10.23(1;.)	0.61(2;0.1)	-	0.6(2;0.06)	0.75(4;0.48)	0.94(6;0.62)
OPHICHTHUS	4.82(3;5.01)	-	0.42(1;.)	1.17(1;.)	2.22(1;.)	-
OPHICHTHUS GOMESI	0.89(1;.)	-	1.92(1;.)	-	-	-
PSEUDOMYROPHIS	-	-	-	-	0.89(1;.)	-
CLUPEIFORMES	18.46(6;31.53)	1.08(2;0.6)	127.6(7;311.9)	23.77(2;6.79)	2201(8;6219)	11.42(2;3.88)
CLUPEIDAE	12.14(5;11.98)	61.3(4;70.2)	23.67(6;28.49)	77.5(5;131.8)	266(7;576)	-
BREVOORTIA	-	-	-	1.35(2;0.78)	0.7(1;.)	22.96(3;30.6)
BREVOORTIA GUNTERI	-	-	-	0.31(1;.)	3.49(7;5.75)	1.28(2;0.85)
BREVOORTIA PATRONUS	-	-	9.05(10;12.23)	22.66(24;21.18)	351.2(95;2174.6)	173.8(52;473.6)
ETRUMEUS TERES	-	1.1(1;.)	1.98(1;.)	-	11.79(7;18.38)	-
OPISTHONEMA OGLINUM	23.26(28;39.64)	82(39;241.9)	68.4(50;136.2)	4.48(11;6.28)	20.25(3;28.33)	-
HARENGULA JAGUANA	26.64(25;80.96)	54.6(19;106.5)	5.58(9;13.63)	4.84(9;4.47)	115.8(2;162.3)	-
HARENGULA PENSACOLAE	5.44(11;7.96)	10(9;8.39)	22.07(4;6.64)	-	-	-
SARDINELLA	2.5(1;.)	-	-	-	-	-
ENGRAULIDAE	480.2(88;1832.3)	156.1(52;318.3)	152.8(75;748.2)	6.83(22;5.95)	2.49(13;2.27)	1.2(3;0.69)
ANCHOA	143(7;205.7)	334(2;468.8)	16.93(4;26.32)	-	-	-
ANCHOA HEPSETUS	9.83(7;14.97)	-	9.58(3;8.05)	1.29(2;0.86)	1.58(1;.)	5.42(1;.)
ANCHOA MITCHILLI	5.15(5;7.99)	-	3.1(2;3.7)	1.01(1;.)	0.91(2;0.65)	3.5(2;4.36)
ANCHOVIELLA	-	-	4.12(2;5.03)	0.44(1;.)	-	0.39(1;.)
ANCHOVIELLA PERFASCIATA	4.28(1;.)	-	5.38(1;.)	-	-	-
GONOSTOMATIDAE	1.84(1;.)	-	1.04(1;.)	1.89(2;0.3)	0.61(1;.)	1.06(7;1.49)
CYCLOTHONE	-	-	-	-	-	0.35(1;.)

Table II-E continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
CYCLOTHONE BRAUERI	0.63(6;0.42)	3.81(4;3.87)	-	-	-	-
VINCIGUERRIA	5.37(4;5.36)	2.83(3;1.66)	6.01(1;.)	1.32(1;.)	2.98(1;.)	-
VINCIGUERRIA NIMBARIA	1.72(8;1.71)	0.75(2;0.01)	2.06(3;1.22)	0.8(1;.)	-	0.46(1;.)
MELANOSTOMIIDAE	0.83(2;0.38)	-	-	0.75(1;.)	-	-
BATHOPHILUS	-	-	0.5(1;.)	0.27(1;.)	-	-
EUSTOMIAS	0.92(3;0.47)	-	-	-	-	-
LEPTOSTOMIAS GLADIATOR	-	0.44(1;.)	-	-	-	-
PHOTOSTOMIAS	-	-	-	-	-	-
STOMIIDAE	0.76(3;0.44)	-	0.82(1;.)	0.9(2;0.26)	-	-
STOMIAS	1.49(6;1.58)	0.71(4;0.48)	0.5(1;.)	0.57(2;0.19)	1.32(2;0.81)	-
MYCTOPHIFORMES	3.18(1;.)	-	-	2.05(2;1.87)	-	0.77(1;.)
SYNODONTIDAE	0.47(1;.)	4.35(1;.)	2.76(2;1.07)	0.83(5;0.55)	1.14(4;0.76)	2.59(3;1.31)
SYNODUS	9.41(3;7.52)	5.35(2;6.06)	3.1(7;0.88)	2.94(2;1)	16.69(6;36.74)	1.06(1;.)
SYNODUS FOETENS	-	-	-	-	1.37(1;.)	-
PARALEPIDIDAE	0.75(4;0.6)	0.64(2;0.03)	0.6(2;0.08)	-	0.9(3;1.02)	-
LESTIDIOPS AFFINIS	0.37(1;.)	-	-	-	-	-
STEMONOSUDIS INTERMEDIA	0.37(1;.)	-	-	-	-	-
SCOPELARCHIDAE	0.57(1;.)	-	-	-	-	-
MYCTOPHIDAE	8.82(69;20.09)	5.37(48;7.03)	14.34(38;20.07)	3.18(28;4.59)	7.11(9;8.26)	1.76(6;0.64)
DIAPHUS	-	-	-	-	-	-
LAMPANYCTUS	13.75(1;.)	3.33(4;2.14)	2.75(3;3.9)	-	-	-
NOTOSCOPELUS RESPLENDENS	1.27(1;.)	1.21(2;0.06)	-	-	-	-
DIOGENICHTHYS ATLANTICUS	-	2.43(2;2.08)	-	-	-	-
HYGOPHUM	0.73(2;0.54)	2.38(3;2.31)	38.76(4;34.92)	1.37(3;1.23)	0.92(1;.)	0.83(1;.)
GONICHTHYS	-	0.76(1;.)	-	-	-	-
MYCTOPHUM	-	-	2.02(1;.)	-	-	-
CENTROBRANCHUS NIGRIOCELLATUS	-	-	-	-	-	-
GOBIESOCIDAE	-	-	-	1.45(1;.)	-	-
GOBIESOX STRUMOSUS	0.82(5;0.46)	1.14(4;0.58)	5.3(19;14.21)	3.64(33;5.08)	1.41(11;0.71)	2.86(4;2)
LOPHIIFORMES	-	-	-	-	-	-
LOPHIIDAE	-	-	-	-	1.89(1;.)	-
ANTENNARIIDAE	0.75(1;.)	-	-	0.43(2;0.04)	-	-
HISTRIO HISTRIO	-	1.06(1;.)	0.32(1;.)	-	-	0.46(1;.)
HALIEUTICHTHYS ACULEATUS	-	-	-	-	-	-
CERATIOIDEI	3.26(1;.)	-	-	-	0.38(1;.)	-
GIGANTACTINIDAE	-	-	-	-	0.38(1;.)	-
CRYPTOPSARAS	-	-	-	-	-	-
CRYPTOPSARAS COUESI	-	0.72(1;.)	-	-	-	-
CAULOPHRYNIDAE	2.29(1;.)	-	-	-	-	-
GADIFORMES	0.55(1;.)	-	-	-	-	-

Table II-E continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
CYCLOTHONE BRAUERI	-	-	-	-	-	-
VINCIGUERRIA	-	-	-	0.61(1;.)	-	-
VINCIGUERRIA NIMBARIA	-	-	-	-	-	0.4(1;.)
MELANOSTOMIIDAE	-	-	-	-	-	-
BATHOPHILUS	-	-	-	-	-	-
EUSTOMIAS	-	-	-	-	-	-
LEPTOSTOMIAS GLADIATOR	-	-	-	-	-	-
PHOTOSTOMIAS	-	-	-	-	-	1.73(1;.)
STOMIIDAE	-	-	-	-	-	-
STOMIAS	-	-	-	-	-	-
MYCTOPHIFORMES	-	-	-	-	-	-
SYNODONTIDAE	0.89(1;.)	-	-	2.38(1;.)	17.61(1;.)	-
SYNODUS	51.2(1;.)	-	-	-	-	-
SYNODUS FOETENS	-	-	-	-	-	-
PARALEPIDIDAE	-	-	0.26(1;.)	-	2.05(1;.)	2.06(5;1.65)
LESTIDIOPS AFFINIS	-	-	-	-	-	-
STEMONOSUDIS INTERMEDIA	-	-	-	-	-	-
SCOPELARCHIDAE	-	-	-	-	-	-
MYCTOPHIDAE	10.49(2;14.11)	-	1.47(5;1.94)	2.82(10;3.69)	2.59(12;2.76)	4.3(18;4.96)
DIAPHUS	-	-	-	-	0.35(1;.)	-
LAMPANYCTUS	-	-	-	-	-	-
NOTOSCOPELUS RESPLENDENS	-	-	-	-	-	-
DIOGENICHTHYS ATLANTICUS	-	-	-	-	-	-
HYGOPHUM	-	-	-	-	-	-
GONICHTHYS	-	-	-	-	-	-
MYCTOPHUM	-	-	-	-	-	-
CENTROBRANCHUS NIGRIOCELLATUS	-	-	-	-	-	0.4(1;.)
GOBIESOCIDAE	-	-	-	0.95(1;.)	-	-
GOBIESOX STRUMOSUS	1.01(2;0.74)	1.11(4;0.95)	4.74(3;6.69)	-	0.47(1;.)	-
LOPHIIFORMES	-	-	-	6.4(2;0.8)	-	-
LOPHIIDAE	-	-	-	-	-	-
ANTENNARIIDAE	-	-	-	1.28(3;0.68)	0.82(1;.)	-
HISTRIO HISTRIO	-	-	-	-	-	-
HALIEUTICHTHYS ACULEATUS	-	-	-	1.42(1;.)	-	-
CERATIOIDEI	-	-	-	-	-	2.9(2;3.54)
GIGANTACTINIDAE	-	-	-	-	-	-
CRYPTOPSARAS	-	-	-	-	-	4.62(1;.)
CRYPTOPSARAS COUESI	-	-	-	-	-	-
CAULOPHRYNIDAE	-	-	-	-	-	-
GADIFORMES	-	-	-	-	-	-

Table II-E continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
BREGMACEROS	2.01(2;2.37)	0.48(1;.)	-	-	1.49(1;.)	-
BREGMACEROS ATLANTICUS	1.79(12;1.67)	0.51(2;0.25)	0.99(2;0.78)	-	-	1.36(1;.)
BREGMACEROS MCCLELLANDII	2.24(1;.)	-	-	2.61(1;.)	-	-
BREGMACEROS CANTORI	1.28(8;0.84)	4.2(6;7.44)	0.65(3;0.38)	1.87(2;0.04)	-	-
BREGMACEROS HOUDEI	-	1.22(2;0.23)	-	-	-	-
GADIDAE	3.31(1;.)	1.65(3;1.83)	0.91(1;.)	0.44(1;.)	-	-
UROPHYCIS	5.62(16;7.58)	2.01(17;1.92)	2.08(5;1.45)	0.75(2;0.25)	-	-
UROPHYCIS REGIA	0.46(4;0.15)	2(1;.)	-	-	-	-
OPHIDIODEI	-	-	-	-	-	-
OPHIDIIDAE	1.01(2;0.43)	0.93(2;0.08)	1.54(1;.)	1.32(6;1.25)	1.69(5;0.64)	1.57(6;1.19)
BROTULA BARBATA	-	-	-	-	-	-
LEPOPHIDIUM	0.38(1;.)	-	-	0.52(1;.)	13.47(1;.)	1.3(3;0.83)
LEPOPHIDIUM GRAELLSI	-	-	-	-	-	-
LEPOPHIDIUM STAUROPHOR	-	0.54(2;0.05)	-	15.67(1;.)	-	2.02(1;.)
OPHIDION	-	-	-	1.32(3;0.59)	-	-
OPHIDION SELENOPS	-	-	-	-	0.37(1;.)	-
CARAPIDAE	2.53(2;2.9)	-	-	-	-	-
EXOCOETIDAE	-	-	0.49(1;.)	0.92(3;0.56)	-	1.36(4;0.78)
CYPSELURUS	-	-	-	-	-	0.42(1;.)
HYPORHAMPHUS UNIFASCIATUS	-	-	-	-	-	0.46(1;.)
EXOCOETUS VOLITANS	-	-	-	-	-	0.98(1;.)
HIRUNDICHTHYS	-	-	-	-	0.8(1;.)	-
HIRUNDICHTHYS RONDELETI	-	-	-	-	-	0.8(1;.)
OXYPORHAMPHUS MICROPTERUS	-	-	-	-	-	0.75(1;.)
BELONIDAE	-	-	-	-	-	-
CYPRINODONTIDAE	-	-	-	-	-	-
POECILIA LATIPINNA	-	-	-	-	1.31(1;.)	-
ATHERINIDAE	-	0.85(1;.)	1.39(2;0.2)	2.39(17;2.67)	11.27(14;24.15)	3.62(9;4.74)
MEMBRAS MARTINICA	-	-	-	0.71(2;0.6)	-	1.71(2;0.46)
MENIDIA	-	0.64(1;.)	3.27(2;1.48)	0.82(2;0.53)	-	2.15(2;1.53)
MELAMPHAES	1.19(2;0.56)	-	-	-	-	-
MELAMPHAES POLYLEPIS	-	0.49(1;.)	-	-	-	-
HOLOCENTRIDAE	-	-	-	-	-	0.44(1;.)
HOLOCENTRUS	-	-	-	-	0.38(1;.)	-
TRACHIPTERUS	-	1.25(1;.)	-	-	-	-
ZU CRISTATUS	0.68(1;.)	0.62(1;.)	-	-	-	-
GASTEROSTEIFORMES	-	-	-	-	-	-
FISTULARIA TABACARIA	-	-	-	0.48(2;0.31)	-	-
MACRORHAMPHOSUS SCOLOPAX	4.59(12;4.49)	2.38(16;2.27)	1.88(2;1.07)	0.84(2;0.43)	1.5(1;.)	-
CENTRISCIDAE	-	11.65(1;.)	-	-	-	-

Table II-E continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
BREGMACEROS	-	-	-	-	2.2(4;1.69)	0.75(2;0.5)
BREGMACEROS ATLANTICUS	-	-	-	-	-	1.52(5;2.18)
BREGMACEROS MCCLELLANDII	-	-	-	-	-	-
BREGMACEROS CANTORI	268.2(3;459)	-	0.23(1;.)	0.61(1;.)	4.66(3;6.74)	1.01(5;0.48)
BREGMACEROS HOUDEI	-	-	-	-	-	-
GADIDAE	-	-	-	0.99(1;.)	1.23(1;.)	-
UROPHYCIS	-	-	-	-	5.52(15;6.28)	7.19(14;15.71)
UROPHYCIS REGIA	-	-	-	-	-	-
OPHIDIODEI	-	-	-	0.51(1;.)	-	-
OPHIDIIDAE	0.3(1;.)	-	1.44(5;0.88)	3.36(4;1.56)	2.08(13;1.53)	1.93(3;1.38)
BROTULA BARBATA	-	-	-	2.52(1;.)	-	0.43(1;.)
LEPOPHIDIUM	0.66(1;.)	-	1.06(4;0.76)	0.83(3;0.37)	2.36(5;1.48)	-
LEPOPHIDIUM GRAELLSI	0.34(1;.)	-	-	-	-	-
LEPOPHIDIUM STAUROPHOR	-	-	1.45(1;.)	-	1.63(1;.)	-
OPHIDION	-	-	-	1.05(11;0.59)	0.83(1;.)	-
OPHIDION SELENOPS	-	-	-	-	-	-
CARAPIDAE	-	-	-	-	-	-
EXOCOETIDAE	-	0.61(1;.)	5.08(1;.)	0.61(1;.)	2.47(1;.)	0.35(1;.)
CYPSELURUS	-	-	-	-	-	-
HYPORHAMPHUS UNIFASCIATUS	-	-	1.38(1;.)	-	0.51(1;.)	-
EXOCOETUS VOLITANS	-	-	-	-	-	-
HIRUNDICHTHYS	-	-	-	-	-	-
HIRUNDICHTHYS RONDELETI	-	-	-	-	-	-
OXYPORHAMPHUS MICROPTERUS	-	-	0.97(2;0.2)	-	-	-
BELONIDAE	-	-	0.26(1;.)	-	0.65(1;.)	-
CYPRINODONTIDAE	-	-	3.26(1;.)	-	-	-
POECILIA LATIPINNA	-	-	-	-	-	-
ATHERINIDAE	5.77(12;15.2)	0.22(1;.)	1.06(3;0.51)	0.43(1;.)	-	-
MEMBRAS MARTINICA	-	-	2.53(1;.)	-	-	-
MENIDIA	-	-	-	-	-	-
MELAMPHAES	-	-	-	-	-	-
MELAMPHAES POLYLEPIS	-	-	-	-	-	-
HOLOCENTRIDAE	-	-	4.99(1;.)	-	-	-
HOLOCENTRUS	-	-	-	-	-	-
TRACHIPTERUS	-	-	-	-	-	-
ZU CRISTATUS	-	-	-	-	-	1.17(1;.)
GASTEROSTEIFORMES	-	-	-	-	0.77(1;.)	-
FISTULARIA TABACARIA	-	-	-	-	-	-
MACRORHAMPHOSUS SCOLOPAX	-	-	-	-	-	1.17(1;.)
CENTRISCIDAE	-	-	-	-	-	-

Table II-E continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
SYNGNATHIDAE	-	-	-	-	-	-
SYNGNATHUS	0.96(2;0.58)	0.4(3;0.14)	1.2(2;0.48)	1.46(8;1.15)	1.98(6;1.8)	1.03(5;0.66)
SYNGNATHUS LOUISIANAE	-	-	-	1.54(5;1.12)	-	1.82(5;1.25)
SYNGNATHUS SCOVELLI	-	-	-	-	-	0.23(1;.)
HIPPOCAMPUS ERECTUS	-	-	-	1.14(1;.)	-	-
SCORPAENIDAE	1.06(1;.)	-	-	2.17(1;.)	-	-
SCORPAENA	0.53(1;.)	1.35(1;.)	2.33(2;2.14)	1.54(3;0.41)	1.58(3;1.92)	2.76(4;3.46)
TRIGLIDAE	-	-	-	-	-	0.8(1;.)
PRIONOTUS	1.74(3;1.39)	1.02(2;1.02)	-	9.76(8;13.16)	0.97(6;0.96)	-
DACTYLOPTERUS VOLITANS	-	-	-	-	0.76(1;.)	-
PERCIFORMES	3.05(20;5.01)	3.09(18;5.42)	2.13(4;1.57)	3.1(25;2.82)	1.41(8;1.7)	7.09(23;12.09)
SERRANIDAE	0.9(5;0.32)	6.45(4;8.77)	2.23(7;2.03)	1.91(9;1.38)	1.91(9;1.8)	1.48(6;0.83)
CENTROPRISTIS	-	1.77(1;.)	-	-	-	-
EPINEPHELUS	-	-	-	-	-	-
ANTHIAS	2.75(2;2.09)	-	-	-	-	-
DIPLECTRUM	-	-	-	-	0.76(1;.)	-
HEMANTHIAS LEPTUS	-	-	-	2.93(1;.)	-	-
LIOPROPOMA	-	-	-	-	-	-
LIOPROPOMA EUKRINES	-	-	-	-	-	-
SERRANUS	-	0.66(1;.)	0.21(1;.)	5.23(2;6.79)	2.28(1;.)	1.06(1;.)
RYPTICUS MACULATUS	-	-	-	-	-	-
ACROPOMATIDAE	-	-	-	-	-	-
POMATOMIDAE	0.55(1;.)	-	-	2.42(2;2.71)	-	-
POMATOMUS SALTATRIX	-	1.42(2;1.14)	1.05(2;0.33)	1.71(9;2.53)	1(4;0.64)	0.49(1;.)
RACHYCENTRON CANADUM	-	-	-	-	-	1.65(2;1.15)
CARANGIDAE	3.34(2;2.72)	1.72(3;1.3)	-	2.23(2;2.58)	9.14(8;8.98)	5.94(6;6.88)
TRACHURUS	0.82(2;0.4)	-	-	0.72(1;.)	-	-
TRACHURUS LATHAMI	4.39(6;7.41)	3.75(3;5.1)	-	0.51(2;0.34)	0.37(1;.)	1.04(4;0.81)
CARANX	-	2.23(1;.)	-	1.96(1;.)	0.56(4;0.23)	1.3(12;1.06)
CARANX HIPPOS	-	-	-	-	-	-
CARANX CRYSOS	2.24(1;.)	-	-	0.29(1;.)	-	0.69(2;0.2)
CHLOROSCOMBRUS CHRYSURUS	9.16(1;.)	0.88(2;0.52)	-	0.75(3;0.42)	2.58(12;4.54)	8.28(36;25.27)
OLIGOPLITES	-	-	-	-	-	-
OLIGOPLITES SAURUS	-	-	-	0.56(2;0.06)	0.93(2;0.78)	9.42(8;22.04)
SELAR CRUMENOPHTHALMUS	-	-	1.17(2;0.4)	0.5(2;0.32)	0.98(4;1.15)	4.43(5;5.84)
SELENE	-	-	-	0.72(1;.)	-	-
SELENE VOMER	-	-	-	-	-	-
SERIOLA	4.58(1;.)	1.25(1;.)	-	-	-	5.25(3;7.16)
TRACHINOTUS	-	-	-	0.72(1;.)	-	-
TRACHINOTUS CAROLINUS	-	-	-	-	1.52(1;.)	-

Table II-E continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
SYNGNATHIDAE	2.39(1;.)	1.11(1;.)	0.65(1;.)	-	-	-
SYNGNATHUS	1(1;.)	0.69(1;.)	0.64(3;0.28)	-	0.6(1;.)	0.62(1;.)
SYNGNATHUS LOUISIANAE	1.52(3;1.18)	-	-	0.79(1;.)	-	-
SYNGNATHUS SCOVELLI	-	-	-	-	-	-
HIPPOCAMPUS ERECTUS	-	-	-	-	-	-
SCORPAENIDAE	-	-	-	0.91(2;0.12)	-	0.43(1;.)
SCORPAENA	-	-	-	0.55(2;0.09)	0.63(1;.)	-
TRIGLIDAE	0.85(1;.)	-	-	0.64(1;.)	0.77(1;.)	-
PRIONOTUS	-	-	-	-	1.82(3;2.35)	-
DACTYLOPTERUS VOLITANS	-	-	-	-	-	-
PERCIFORMES	29.54(31;86.29)	12.96(11;20.88)	23.83(25;62.81)	10.1(10;23.9)	1.13(12;0.74)	1.76(8;2.01)
SERRANIDAE	-	9.29(2;9.22)	1.16(4;0.75)	1.11(8;0.76)	0.84(5;0.41)	0.95(2;0.31)
CENTROPRISTIS	-	-	-	-	-	-
EPINEPHELUS	-	-	0.73(1;.)	-	-	-
ANTHIAS	-	-	-	-	1.21(1;.)	-
DIPLECTRUM	-	-	-	-	-	-
HEMANTHIAS LEPTUS	-	-	-	-	-	-
LIOPROPOMA	-	-	1.27(1;.)	-	-	-
LIOPROPOMA EUKRINES	0.43(1;.)	-	-	-	-	-
SERRANUS	-	-	-	-	0.65(1;.)	-
RYPTICUS MACULATUS	1.11(2;1.08)	-	-	-	-	-
ACROPOMATIDAE	-	-	-	-	-	1.2(1;.)
POMATOMIDAE	-	-	-	11.9(1;.)	88(1;.)	-
POMATOMUS SALTATRIX	-	-	10.25(1;.)	2.29(18;2.48)	3.62(13;5.61)	1.99(2;2)
RACHYCENTRON CANADUM	2.63(1;.)	-	-	-	-	-
CARANGIDAE	7.65(9;13.22)	3.29(23;4.8)	1.82(2;0.11)	3.41(4;4.28)	0.89(2;0.59)	0.38(1;.)
TRACHURUS	-	-	-	-	-	-
TRACHURUS LATHAMI	-	-	4(2;3.28)	1.08(2;0.57)	-	-
CARANX	3.83(7;3.92)	3.66(7;2.29)	3.61(9;6.2)	0.91(5;0.48)	-	-
CARANX HIPPOS	-	-	1.04(1;.)	-	-	-
CARANX CRYSOS	1.74(3;1.23)	4.34(2;0.57)	7.18(5;13.87)	-	1.21(1;.)	-
CHLOROSCOMBRUS CHRYSURUS	36.4(55;82.55)	145(57;489.4)	30.86(72;103.12)	3.82(19;6.39)	2.58(7;2.14)	4.62(1;.)
OLIGOPLITES	1.53(2;1.68)	-	-	-	-	-
OLIGOPLITES SAURUS	4.78(31;10.34)	1.79(15;1.42)	0.81(2;0.63)	-	-	-
SELAR CRUMENOPHTHALMUS	3.69(1;.)	2.8(6;1.3)	3.51(11;4.61)	2.07(5;2.93)	0.56(1;.)	0.39(1;.)
SELENE	3.7(1;.)	0.47(1;.)	-	1.85(2;0.31)	0.99(1;.)	-
SELENE VOMER	-	1.89(1;.)	-	-	-	-
SERIOLA	2.15(3;1.36)	-	2.21(4;2.11)	1.58(2;0.45)	0.71(2;0.5)	-
TRACHINOTUS	-	-	-	-	-	-
TRACHINOTUS CAROLINUS	-	-	-	-	-	-

Table II-E continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
DECAPTERUS PUNCTATUS	-	-	-	-	1.91(6;1.77)	1.58(6;1.32)
ELAGATIS BIPINNULATA	-	-	-	-	-	1.44(3;1.11)
NAUCRATES DUCTOR	0.37(1;.)	-	-	-	-	-
GNATHANODON	-	-	-	-	-	6.44(1;.)
CORYPHAENIDAE	-	-	-	1.04(1;.)	0.89(3;0.7)	1.55(3;1.9)
CORYPHAENA	-	-	-	-	0.82(1;.)	-
CORYPHAENA EQUISETIS	-	-	-	1.14(1;.)	0.5(2;0.37)	0.44(1;.)
LUTJANIDAE	0.74(1;.)	-	-	-	-	-
LUTJANUS	-	2.9(1;.)	1.51(1;.)	4.76(1;.)	-	6.22(4;6.7)
LUTJANUS CAMPECHANUS	-	-	-	-	-	-
GERREIDAE	0.41(2;0.06)	-	-	0.58(1;.)	1.01(3;0.59)	0.71(4;0.31)
EUCINOSTOMUS	-	-	-	0.29(1;.)	-	-
EUCINOSTOMUS GULA	-	-	0.27(1;.)	-	-	-
HAEMULIDAE	1.43(1;.)	-	-	-	-	-
ORTHOPRISTIS	-	-	0.61(1;.)	-	-	-
ORTHOPRISTIS CHRYSOPTERA	-	-	0.32(1;.)	1.09(1;.)	-	-
SPARIDAE	9.71(2;13.16)	0.92(6;0.36)	1.75(4;0.97)	6.27(15;7.17)	-	0.46(1;.)
LAGODON RHOMBOIDES	8.43(50;19.91)	2.23(18;3.03)	2.76(19;2.67)	3.43(19;4.61)	6.22(7;6.73)	1.58(3;1.87)
ARCHOSARGUS	-	-	-	5.79(1;.)	-	-
ARCHOSARGUS PROBATOCEPHALUS	0.29(2;0.13)	0.63(5;0.34)	-	50.2(32;251.3)	1.65(9;1.07)	-
SCIAENIDAE	-	0.89(5;0.47)	-	2.04(9;1.34)	0.97(2;0.02)	1.52(2;0.08)
CYNOSCION	-	3.6(1;.)	-	0.58(2;0.02)	2.12(4;1.33)	5.14(2;4.17)
CYNOSCION NEBULOSUS	-	-	0.6(1;.)	2.72(6;1.66)	0.38(1;.)	18.33(6;38.07)
CYNOSCION NOTHUS	0.53(1;.)	-	-	-	-	-
CYNOSCION ARENARIUS	1.05(4;0.78)	3.8(11;3.06)	6.1(19;7.2)	11.94(46;29.7)	5.56(25;9.14)	7.14(32;12.95)
BAIRDIELLA CHRYSOURA	-	-	-	1.18(6;0.59)	0.52(5;0.41)	2.44(1;.)
LEIOSTOMUS XANTHURUS	6.52(36;18.18)	3.5(13;6.59)	1.78(2;1.1)	0.52(1;.)	-	-
LARIMUS FASCIATUS	1.27(2;1.32)	2.96(1;.)	-	-	-	1.5(2;0.17)
MENTICIRRHUS	0.35(3;0.11)	0.51(3;0.17)	1.21(2;0.86)	4.22(14;6.22)	1.77(9;1.08)	2.48(5;3.98)
MICROPOGONIAS UNDULATUS	0.86(8;0.82)	4.77(9;6.33)	0.47(1;.)	2.88(3;3.24)	-	-
POGONIAS CROMIS	4.5(10;3.91)	2.07(8;2.3)	0.89(11;0.45)	7.99(9;15.48)	-	-
SCIAENOPS OCELLATUS	-	-	-	-	-	-
STELLIFER LANCEOLATUS	-	-	-	-	0.77(4;0.45)	-
MULLIDAE	1.34(4;0.95)	2.17(5;2.58)	0.86(1;.)	2.31(18;3.28)	2.02(3;0.51)	2(6;1.69)
EPHIPPIDIDAE	-	2.9(1;.)	-	-	-	-
CHAETODIPTERUS FABER	-	-	-	-	2.43(3;3.22)	0.82(8;0.52)
MUGILIDAE	-	-	-	5.22(1;.)	2.71(1;.)	1.09(2;0.41)
MUGIL	0.77(2;0.47)	0.45(1;.)	-	2.17(1;.)	-	2.55(1;.)
MUGIL CEPHALUS	3.12(16;4.05)	1.3(8;1.61)	2.74(4;2.27)	1.12(5;1.07)	5.35(9;5.3)	0.53(5;0.13)
MUGIL CUREMA	-	-	-	0.27(1;.)	-	0.89(3;0.61)

Table II-E continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
DECAPTERUS PUNCTATUS	3.16(1;.)	3.73(1;.)	2.06(6;1.48)	1.38(3;1.28)	-	-
ELAGATIS BIPINNULATA	-	1.59(2;0.69)	0.3(1;.)	0.69(3;0.44)	-	-
NAUCRATES DUCTOR	-	-	-	-	-	-
GNATHANODON	-	-	-	-	-	-
CORYPHAENIDAE	3.74(1;.)	0.61(1;.)	-	-	-	-
CORYPHAENA	-	-	0.23(1;.)	-	0.65(1;.)	-
CORYPHAENA EQUISETIS	-	-	0.91(1;.)	0.56(1;.)	-	-
LUTJANIDAE	-	-	0.91(1;.)	-	-	-
LUTJANUS	1.12(4;0.82)	2.04(12;1.21)	4.68(4;3.59)	1.66(2;0.56)	3.02(1;.)	-
LUTJANUS CAMPECHANUS	0.89(3;0.4)	-	-	0.81(2;0.05)	-	-
GERREIDAE	1.35(3;0.6)	-	1.56(2;1.59)	0.63(2;0.01)	2.87(2;1.26)	-
EUCINOSTOMUS	0.61(1;.)	-	-	-	-	-
EUCINOSTOMUS GULA	-	-	-	-	-	-
HAEMULIDAE	-	-	-	-	-	-
ORTHOPRISTIS	-	-	-	-	-	-
ORTHOPRISTIS CHRYSOPTERA	-	-	-	-	-	-
SPARIDAE	1.76(2;0.87)	4.04(2;2.28)	-	-	-	-
LAGODON RHOMBOIDES	0.3(1;.)	0.34(1;.)	3.19(3;3.25)	0.34(1;.)	2.06(6;0.57)	4.62(19;10.86)
ARCHOSARGUS	-	-	-	-	-	-
ARCHOSARGUS PROBATOCEPHALUS	0.58(1;.)	-	-	-	-	-
SCIAENIDAE	1.59(3;1.91)	12.33(5;11.21)	10.95(9;12.31)	2.16(6;1.93)	0.84(3;0.7)	-
CYNOSCION	2.63(1;.)	11.17(8;12.33)	3.72(4;5.04)	0.55(1;.)	-	0.32(1;.)
CYNOSCION NEBULOSUS	5.74(16;8.59)	6.67(16;8.38)	59.8(18;202)	2.2(2;0.5)	2.41(3;2.08)	-
CYNOSCION NOTHUS	6.72(1;.)	5.14(1;.)	1.26(3;1.24)	0.94(1;.)	1.91(1;.)	-
CYNOSCION ARENARIUS	8.52(31;11.46)	193.1(23;377.2)	46.89(32;133.74)	0.63(7;0.3)	6.31(6;6.84)	-
BAIRDIELLA CHRYSOURA	2.16(1;.)	3.94(4;5.99)	2.9(3;3.2)	-	-	2.28(1;.)
LEIOSTOMUS XANTHURUS	-	-	6.07(2;7.53)	0.34(1;.)	2.88(18;1.77)	34.58(24;135.98)
LARIMUS FASCIATUS	-	9.42(1;.)	3.42(3;2.42)	1.58(6;1.97)	3.69(2;2.53)	0.32(1;.)
MENTICIRRHUS	6.56(11;11.1)	6.43(19;8.65)	32.04(22;135.61)	1.64(9;1.21)	-	-
MICROPOGONIAS UNDULATUS	21.34(4;26.95)	2(2;0.6)	9.65(7;7.71)	18.83(28;26.93)	42.9(39;108.9)	11(10;22.58)
POGONIAS CROMIS	1.94(1;.)	-	0.92(1;.)	-	-	3.1(1;.)
SCIAENOPS OCELLATUS	-	10.8(27;21.79)	75.9(64;169.5)	11.85(26;25.55)	1.31(2;1.14)	0.62(1;.)
STELLIFER LANCEOLATUS	0.99(6;1.1)	4(7;4.64)	2.08(3;0.72)	-	1.52(2;0.96)	-
MULLIDAE	7.99(1;.)	-	2.83(1;.)	2.38(1;.)	3.85(8;5.85)	2.65(5;2.07)
EPHIPPIDIDAE	-	-	-	0.95(1;.)	-	-
CHAETODIPTERUS FABER	11.29(8;18)	1.23(6;0.97)	0.68(1;.)	0.99(1;.)	-	-
MUGILIDAE	-	-	-	2.38(1;.)	-	-
MUGIL	11.12(1;.)	-	-	-	-	-
MUGIL CEPHALUS	1.13(7;1.04)	-	6.62(2;6.13)	2.74(11;3.53)	56.4(42;127.6)	3.06(14;4.74)
MUGIL CUREMA	3.87(1;.)	7.91(1;.)	-	-	1.31(1;.)	-

Table II-E continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
SPHYRAENIDAE	-	-	-	-	-	0.63(2;0.24)
SPHYRAENA	1.15(4;0.72)	0.85(2;0.57)	-	0.97(10;0.79)	0.79(5;0.42)	3.78(11;4.97)
SPHYRAENA BOREALIS	-	-	0.44(1;.)	0.39(2;0.18)	-	-
LABRIDAE	0.2(1;.)	1.24(2;1.05)	1.52(2;0.02)	1.23(3;1.28)	1.14(1;.)	-
SCARIDAE	-	-	-	-	-	-
URANOSCOPIDAE	-	1.98(1;.)	-	0.51(1;.)	-	-
BLENNIIDAE	1.57(26;1.53)	1.98(25;2.78)	3.22(28;4.15)	11.91(79;26.88)	9.38(41;9.97)	8.18(61;16.43)
HYPSOBLENNIUS	-	-	1.54(1;.)	-	1.22(2;0.86)	0.84(1;.)
HYPSOBLENNIUS HENTZI	-	-	-	-	-	7.5(1;.)
OPHIOBLENNIUS	1.71(1;.)	-	-	-	-	1.14(2;0.43)
SCARTELLA CRISTATA	-	-	-	11.57(1;.)	-	-
CALLIONYMIDAE	-	-	-	0.44(1;.)	-	-
CALLIONYMUS	-	0.57(1;.)	-	-	-	-
CALLIONYMUS BAIRDI	-	-	-	-	-	-
CALLIONYMUS PAUCIRADIATUS	0.75(1;.)	0.41(3;0.1)	-	-	-	-
GOBIIDAE	1.15(23;0.81)	11.79(23;36.75)	1.39(15;1.17)	2.32(11;1.7)	6.28(10;12.27)	9.62(26;18.92)
GOBIONELLUS HASTATUS	0.29(1;.)	-	0.4(2;0.08)	0.31(1;.)	-	-
MICRODESMIDAE	-	-	-	-	-	-
MICRODESMUS	-	-	-	0.33(2;0.09)	2.35(11;2.22)	5.01(11;9.32)
GEMPYLIDAE	1.76(3;0.93)	3.49(2;4.52)	-	-	-	0.62(2;0.18)
GEMPYLUS	-	1.66(1;.)	-	-	-	-
NESIARCHUS NASUTUS	0.75(1;.)	-	-	-	-	-
DIPLOSPINUS MULTISTRIATUS	1.25(5;0.9)	-	1.93(2;1.52)	-	-	-
TRICHIURIDAE	-	-	-	-	-	-
TRICHIURUS LEPTURUS	-	-	1.14(3;0.49)	0.78(3;0.59)	4.64(4;4.62)	1.01(3;0.64)
SCOMBRIDAE	1.37(4;0.57)	0.45(1;.)	-	0.35(1;.)	2.9(5;3.1)	10.66(5;13.75)
EUTHYNNUS PELAMIS	-	-	0.44(1;.)	0.68(1;.)	-	-
EUTHYNNUS ALLETTERATUS	0.48(1;.)	0.38(1;.)	-	3.69(1;.)	0.62(3;0.52)	3.06(4;1.49)
SCOMBER JAPONICUS	0.79(1;.)	0.51(2;0.08)	2.17(1;.)	1.61(2;0.59)	-	-
THUNNUS	-	0.44(1;.)	-	-	0.22(2;0.04)	0.4(1;.)
THUNNUS THYNNUS	-	-	-	2.03(1;.)	0.19(1;.)	-
THUNNUS ALBACARES	-	-	-	-	-	-
THUNNUS ATLANTICUS	1.21(1;.)	0.34(1;.)	-	-	1.07(3;1.01)	-
SCOMBEROMORUS CAVALLA	-	-	-	-	-	-
SCOMBEROMORUS MACULATUS	-	-	2.01(1;.)	14.75(6;22.11)	3.34(14;4.97)	5.71(17;7.52)
AUXIS	-	-	-	0.47(2;0.17)	3.58(7;2.11)	3.31(12;2.18)
ISTIOPHORUS	-	-	-	-	-	0.46(1;.)
ISTIOPHORUS PLATYPTERUS	-	-	-	-	-	-
STROMATEOIDEI	-	-	-	-	-	-
NOMEIDAE	0.95(2;0.22)	-	-	2.61(1;.)	-	-

Table II-E continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
SPHYRAENIDAE	0.67(1;.)	-	-	4.76(1;.)	-	-
SPHYRAENA	3.93(3;2.21)	2.18(5;1.21)	5.42(16;5.55)	1.45(3;0.75)	-	-
SPHYRAENA BOREALIS	-	-	-	-	-	-
LABRIDAE	-	-	-	2.38(1;.)	0.27(1;.)	-
SCARIDAE	-	-	-	-	-	0.4(1;.)
URANOSCOPIDAE	-	-	-	-	0.42(1;.)	-
BLENNIIDAE	5.68(54;15.42)	5.07(37;9.92)	4.9(53;5.6)	5.06(29;7.04)	4.83(43;9.22)	3.14(20;4.79)
HYPSOBLENNIUS	-	-	-	-	-	-
HYPSOBLENNIUS HENTZI	-	-	-	-	-	-
OPHIOBLENNIUS	3.71(1;.)	-	-	-	-	-
SCARTELLA CRISTATA	7.41(1;.)	-	-	-	-	-
CALLIONYMIDAE	-	-	-	-	0.74(1;.)	-
CALLIONYMUS	-	-	-	-	-	-
CALLIONYMUS BAIRDI	-	-	0.87(1;.)	-	-	-
CALLIONYMUS PAUCIRADIATUS	-	-	0.8(1;.)	0.98(7;0.9)	1.14(2;0.52)	-
GOBIIDAE	18.76(19;48.18)	3.31(14;4.77)	2.16(29;1.97)	1.98(15;1.43)	1.35(21;1.11)	0.93(10;0.96)
GOBIONELLUS HASTATUS	-	-	0.64(1;.)	-	-	-
MICRODESMIDAE	-	-	-	1.73(3;1.09)	-	-
MICRODESMUS	7.82(3;10.95)	-	2.35(7;3.51)	2.09(7;1.86)	0.84(3;0.62)	-
GEMPYLIDAE	-	-	0.55(1;.)	0.77(3;0.35)	0.95(1;.)	-
GEMPYLUS	-	-	-	-	-	-
NESIARCHUS NASUTUS	-	-	-	-	-	-
DIPLOSPINUS MULTISTRIATUS	-	-	-	0.77(2;0.4)	-	3.16(3;2.21)
TRICHIURIDAE	-	-	-	2.1(3;1.56)	-	0.46(1;.)
TRICHIURUS LEPTURUS	-	-	1.69(3;1.25)	0.35(2;0.01)	-	-
SCOMBRIDAE	4.52(3;3.24)	2.69(4;2.21)	6.71(9;10.87)	1.97(3;0.38)	-	-
EUTHYNNUS PELAMIS	-	-	2.5(1;.)	-	-	-
EUTHYNNUS ALLETTERATUS	6.49(8;7.65)	2.36(7;1.16)	2.26(6;1.54)	1.61(2;0.63)	-	-
SCOMBER JAPONICUS	-	-	1.03(2;0.29)	5.83(1;.)	1.12(1;.)	-
THUNNUS	-	-	0.4(1;.)	-	-	-
THUNNUS THYNNUS	-	-	5.32(4;2.5)	-	-	-
THUNNUS ALBACARES	-	-	5.83(6;5.21)	3.21(1;.)	-	-
THUNNUS ATLANTICUS	-	-	2.87(4;2.08)	-	-	-
SCOMBEROMORUS CAVALLA	0.3(1;.)	1.24(3;0.53)	-	-	-	-
SCOMBEROMORUS MACULATUS	5.05(20;9.33)	6.33(17;5.04)	7.56(11;13.59)	-	-	-
AUXIS	-	2.18(5;1.03)	13.63(21;29.61)	3.71(10;5.56)	-	-
ISTIOPHORUS	-	-	-	-	-	-
ISTIOPHORUS PLATYPTERUS	-	-	0.55(1;.)	-	-	-
STROMATEOIDEI	-	-	-	6.2(2;6.08)	-	-
NOMEIDAE	-	-	-	2.16(4;1.89)	1.23(2;1.07)	-

Table II-E continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
ARIOMMA	2(19;3.03)	2.95(6;3.64)	3.7(11;4.43)	0.45(4;0.15)	0.9(3;0.22)	0.44(1;.)
CUBICEPS PAUCIRADIATUS	-	0.34(1;.)	1.28(1;.)	1.08(7;0.89)	1.6(5;1.29)	-
NOMEUS GRONOVII	1.76(1;.)	-	-	-	-	0.49(1;.)
STROMATEIDAE	-	-	-	4.08(2;5.27)	-	-
PEPRILUS	-	-	-	-	-	-
PEPRILUS PARU	-	-	-	-	0.73(3;0.69)	2.08(6;2.37)
PEPRILUS BURTI	5.4(18;9.99)	4.2(26;3.96)	5(18;5.99)	272.8(14;1016.3)	1.19(7;1.27)	0.38(2;0.16)
PEPRILUS ALEPIDOTUS	-	-	-	-	-	-
TETRAGONURUS	0.82(1;.)	-	-	-	-	-
TETRAGONURUS ATLANTICUS	-	-	0.45(1;.)	-	-	-
PLEURONECTIFORMES	1.45(1;.)	1.25(3;1.08)	-	0.36(1;.)	1.1(1;.)	10.17(2;6.2)
BOTHIDAE	1.81(3;1.63)	1.32(2;0.94)	-	3.67(6;4.07)	2.34(3;2.6)	1.09(3;0.52)
CITHARICHTHYS	1.91(3;2.67)	1.48(6;1.94)	-	-	0.38(1;.)	0.52(2;0.03)
CITHARICHTHYS GYMNORHINUS	-	-	-	-	-	-
CITHARICHTHYS SPILOPTERUS	0.88(13;0.5)	1.62(10;1.77)	2.73(13;4.52)	0.47(1;.)	2(1;.)	5.16(3;4.48)
ETROPUS	-	-	-	-	4.74(2;1.74)	-
ETROPUS CROSSOTUS	1.58(5;1.43)	1.3(4;1.65)	2.02(1;.)	3.01(12;2.16)	10.68(14;25.72)	1.47(6;1.46)
PARALICHTHYS	2.05(3;1.93)	5.79(3;7.67)	-	6.87(3;9.17)	-	-
BOTHUS	0.37(1;.)	-	-	0.74(2;0.41)	-	1.06(2;0.2)
BOTHUS OCELLATUS	1.27(1;.)	-	-	-	-	-
CYCLOPSETTA CHITTENDENI	-	-	-	-	-	-
ENGYOPHRYS SENTA	-	-	-	-	-	1.1(1;.)
SYACIUM	-	0.44(1;.)	-	1.22(2;0.99)	2.93(6;3.17)	1.21(8;0.86)
SYACIUM PAPILLOSUM	-	-	-	-	-	-
TRICHOPSETTA VENTRALIS	-	-	-	-	10.27(4;14.87)	1.17(3;0.22)
PLEURONECTIDAE	-	-	-	-	1.7(2;0.26)	-
VERASPER VARIEGATUS	-	-	-	-	-	0.46(1;.)
SOLEIDAE	-	1.16(1;.)	-	-	0.34(2;0.21)	1.18(2;0.28)
TRINECTES MACULATUS	-	-	-	-	-	-
ACHIRUS LINEATUS	-	-	-	-	-	63.8(1;.)
CYNOGLOSSIDAE	-	-	-	1.62(1;.)	-	34.51(1;.)
SYMPHURUS	1.54(3;1.4)	0.56(3;0.19)	1.28(1;.)	5.35(13;6.56)	5.13(14;7.03)	2.67(20;4.13)
SYMPHURUS PLAGIUSA	-	-	-	-	3.34(2;1.16)	-
TETRAODONTIFORMES	-	-	0.39(1;.)	-	0.24(1;.)	-
BALISTIDAE	-	-	-	-	-	-
BALISTES	-	-	-	-	-	-
MONACANTHUS	-	-	-	-	-	-
MONACANTHUS HISPIDUS	-	-	-	-	-	0.41(1;.)
MONACANTHUS SETIFER	0.55(1;.)	-	0.41(1;.)	0.51(1;.)	-	3.09(1;.)
TETRAODONTIDAE	-	-	-	5.57(1;.)	-	-
SPHOEROIDES	0.93(3;0.34)	1.1(1;.)	2.83(2;1.83)	1.4(8;0.82)	0.88(8;0.7)	2.34(16;3.62)

Table II-E continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
ARIOMMA	0.71(1;.)	-	-	1.28(1;.)	2.03(4;1.77)	1.31(5;0.89)
CUBICEPS PAUCIRADIATUS	-	-	-	0.52(2;0.06)	1.54(1;.)	-
NOMEUS GRONOVII	-	-	-	-	-	0.32(1;.)
STROMATEIDAE	-	-	1.14(1;.)	-	0.57(1;.)	-
PEPRILUS	-	-	-	2.33(1;.)	-	-
PEPRILUS PARU	1.09(3;1.11)	4.16(3;5.68)	7.77(8;8.53)	6.31(3;3.57)	7.53(1;.)	-
PEPRILUS BURTI	1.41(2;0.75)	-	2.45(4;2.72)	1.9(14;1.76)	4.88(29;8.38)	1.41(14;1.34)
PEPRILUS ALEPIDOTUS	-	1.35(4;1.01)	-	-	-	-
TETRAGONURUS	-	-	-	-	-	-
TETRAGONURUS ATLANTICUS	-	-	-	-	-	-
PLEURONECTIFORMES	-	11.22(1;.)	0.91(1;.)	0.8(2;0.02)	-	-
BOTHIDAE	0.59(1;.)	5.25(3;4.32)	-	0.55(1;.)	35.92(3;60.4)	-
CITHARICHTHYS	0.87(1;.)	-	-	1.17(1;.)	1.22(2;0.97)	-
CITHARICHTHYS GYMNORHINUS	-	-	-	-	-	0.4(1;.)
CITHARICHTHYS SPILOPTERUS	5.99(6;7.59)	1.76(2;1.79)	1.62(4;1.45)	0.72(2;0.14)	1.45(5;0.78)	-
ETROPUS	-	-	-	-	-	-
ETROPUS CROSSOTUS	8.01(7;14.73)	3.03(1;.)	1.41(5;1.04)	-	1.96(3;0.27)	2.95(4;2.02)
PARALICHTHYS	7.38(2;8.57)	-	-	-	1.89(4;1.1)	1(1;.)
BOTHUS	3.88(1;.)	-	-	0.95(1;.)	-	-
BOTHUS OCELLATUS	-	-	-	-	-	-
CYCLOPSETTA CHITTENDENI	-	-	-	1.68(1;.)	-	-
ENGYOPHRYS SENTA	-	-	-	-	1.2(1;.)	0.39(1;.)
SYACIUM	4.15(5;3.93)	0.47(1;.)	0.8(1;.)	0.68(1;.)	0.97(2;0.38)	0.58(1;.)
SYACIUM PAPILLOSUM	3.39(1;.)	0.66(1;.)	0.64(1;.)	-	-	-
TRICHOPSETTA VENTRALIS	-	-	-	-	-	-
PLEURONECTIDAE	-	-	-	-	-	-
VERASPER VARIEGATUS	-	-	-	-	-	-
SOLEIDAE	2.71(9;3.12)	-	-	-	-	-
TRINECTES MACULATUS	4.54(2;5.81)	-	0.62(1;.)	-	-	-
ACHIRUS LINEATUS	1.02(2;0.97)	0.71(2;0.59)	-	-	-	-
CYNOGLOSSIDAE	-	-	-	-	-	-
SYMPHURUS	8.43(20;14.93)	4.95(12;4.96)	2.17(25;2.84)	4.35(21;5.2)	3.49(12;5.15)	0.66(2;0.47)
SYMPHURUS PLAGIUSA	-	-	0.75(1;.)	-	-	-
TETRAODONTIFORMES	-	0.47(1;.)	-	-	-	-
BALISTIDAE	-	-	2.81(2;3.08)	0.99(1;.)	-	-
BALISTES	-	-	-	-	0.68(1;.)	-
MONACANTHUS	0.71(1;.)	3.16(1;.)	0.44(1;.)	-	-	-
MONACANTHUS HISPIDUS	-	0.61(1;.)	1.53(1;.)	-	0.45(1;.)	-
MONACANTHUS SETIFER	-	-	5.19(2;6.76)	0.32(2;0.03)	1.56(3;0.13)	-
TETRAODONTIDAE	-	-	-	-	-	-
SPHOEROIDES	2.19(16;2.37)	1.41(3;0.05)	0.61(2;0.27)	0.74(3;0.42)	0.85(3;0.59)	7.61(2;4.53)

Table II-F. Monthly mean densities (no./100m^3; with the number of positive samples and standard deviations in parenthesis) for ichthyoplankton taxa collected with a 60-cm, 0.363-mm mesh, bongo net between February 1978 and December 1995 during the LOOP Environmental Monitoring Project. For stations where both sides of the bongo frame were analyzed or where stratified samples were taken, each sample analyzed was considered as a separate observation. Taxonomic order within table was determined by the National Oceanographic Data Center (NODC) code.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
OSTEICHTHYES	4.1(15;3.4)	2.91(16;2.06)	4.86(4;5.8)	2.59(13;1.56)	5.3(12;4.14)	24.21(14;25.43)
ELOPS SAURUS	-	2.49(2;2.02)	-	-	-	-
ANGUILLIFORMES	2.08(8;1.02)	1.72(7;0.91)	1.52(1;.)	8.03(3;4.14)	5.08(3;2.61)	13.03(6;12.14)
ANGUILLIDAE	-	-	-	-	-	2.08(1;.)
MORINGUIDAE	0.84(3;0.06)	-	-	-	1.85(1;.)	-
NEOCONGER MUCRONATUS	-	-	-	-	-	-
MURAENIDAE	2.21(4;0.65)	2.61(3;1.14)	-	5.43(3;5.19)	7.12(1;.)	2.69(10;1.23)
GYMNOTHORAX	-	-	-	1.06(1;.)	-	2.41(1;.)
HOPLUNNIS	-	-	-	-	-	-
NETTASTOMATIDAE	2.95(2;1.14)	1.36(1;.)	2.83(3;2.16)	2.57(2;2.41)	0.86(1;.)	-
CONGRIDAE	-	-	-	-	1.76(1;.)	1.31(1;.)
PARACONGER CAUDILIMBATUS	-	-	-	-	-	-
OPHICHTHIDAE	3.17(11;2.6)	2.54(5;1.34)	-	3.7(8;2.05)	3.64(4;2.73)	4.16(22;3.49)
BASCANICHTHYS	-	-	-	-	-	-
MYROPHIS PUNCTATUS	5.59(15;12.8)	3.12(28;2.8)	2.03(5;1.09)	1.57(1;.)	3.91(1;.)	2.44(5;2.1)
OPHICHTHUS	-	-	-	-	-	4.53(6;4.6)
OPHICHTHUS GOMESI	-	-	-	-	-	-
OPHICHTHUS OCELLATUS	-	-	-	-	-	-
PSEUDOMYROPHIS	-	-	-	-	-	-
CLUPEIFORMES	3.31(2;3.19)	23.04(16;41.21)	-	250.6(12;340.1)	22.79(9;31.67)	7.19(7;6.41)
CLUPEIDAE	14.09(6;14.16)	23.35(9;38.09)	59.6(12;46.8)	5.9(5;6.27)	3.48(6;2.48)	7.1(4;8.76)
BREVOORTIA	-	-	1.81(1;.)	-	-	7.79(1;.)
BREVOORTIA GUNTERI	2.54(9;1.26)	5.08(6;5.48)	19.17(7;10.56)	4.02(1;.)	-	-
BREVOORTIA PATRONUS	96.7(139;167)	119.4(120;181.6)	127.7(53;187.9)	11.84(16;15.98)	-	4.37(1;.)
ETRUMEUS TERES	49.38(39;83.37)	11.94(36;18.4)	27.21(17;32.18)	10.19(15;10.11)	5.11(4;3.36)	2.91(1;.)
OPISTHONEMA OGLINUM	2.21(1;.)	-	43.01(5;78.28)	11.61(15;12.84)	88.5(51;115.9)	78.4(40;124.9)
HARENGULA JAGUANA	-	-	-	96.2(7;236.8)	44.5(9;49.89)	6.45(12;8.7)
HARENGULA PENSACOLAE	-	-	-	14.97(13;23.42)	7.02(17;10.81)	-
SARDINELLA	-	-	-	-	1.76(1;.)	-
ENGRAULIDAE	19.08(30;64.49)	9.93(44;16.01)	26.94(26;45.58)	233.6(109;314.6)	386.1(91;1241.8)	271.8(116;641.5)
ANCHOA	-	-	-	41.34(12;55.71)	10(9;13.68)	-
ANCHOA HEPSETUS	-	-	-	1.69(2;0.36)	-	-
ANCHOA MITCHILLI	-	-	-	2.41(3;1.72)	-	-

Table II-F continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
OSTEICHTHYES	17.61(6;12.3)	75.2(5;103.2)	797(18;2682)	235.3(4;340)	1.62(1;.)	1.37(3;0.1)
ELOPS SAURUS	-	-	-	-	-	-
ANGUILLIFORMES	10.63(10;8.7)	12.04(14;21.04)	5.7(13;6.15)	6.89(8;4.77)	5.97(8;4.47)	9.29(9;10.86)
ANGUILLIDAE	-	-	-	-	-	-
MORINGUIDAE	2.9(4;2.88)	-	6.05(4;7.13)	18.05(2;3.24)	0.99(3;0.15)	-
NEOCONGER MUCRONATUS	-	0.85(1;.)	-	1.55(2;0.29)	4.2(4;1.89)	-
MURAENIDAE	21.04(17;25.96)	54.4(1;.)	5.32(6;4.8)	2.96(3;2.05)	1.02(3;0.09)	-
GYMNOTHORAX	-	2.19(3;1.03)	1.95(1;.)	-	-	-
HOPLUNNIS	-	0.9(1;.)	-	-	-	-
NETTASTOMATIDAE	3.34(2;3.15)	-	-	-	1.55(2;0.03)	1.92(2;0.07)
CONGRIDAE	1.18(1;.)	10.88(2;9.61)	-	3.7(1;.)	2.04(1;.)	-
PARACONGER CAUDILIMBATUS	-	1.7(1;.)	-	-	-	-
OPHICHTHIDAE	5.21(15;3.91)	3.44(8;3.26)	6.19(23;7.48)	8.98(4;5.6)	8.92(25;14.57)	3.63(3;2.24)
BASCANICHTHYS	-	-	1.42(1;.)	-	-	-
MYROPHIS PUNCTATUS	1.6(6;0.36)	6.42(7;10.83)	2.47(2;2.71)	14.92(8;17.96)	5.46(14;5.95)	2.97(11;4.74)
OPHICHTHUS	1.94(3;0.71)	6.92(4;4.3)	20.33(4;23.67)	6.9(8;6.67)	4.73(9;4.69)	1.29(1;.)
OPHICHTHUS GOMESI	11.47(1;.)	5.91(7;4.05)	3.41(9;2.07)	1.98(1;.)	10.52(1;.)	-
OPHICHTHUS OCELLATUS	-	-	-	-	-	2.77(1;.)
PSEUDOMYROPHIS	-	-	-	-	-	1.91(1;.)
CLUPEIFORMES	8.33(5;4.49)	28.7(6;43.41)	15.65(3;10.72)	3.11(1;.)	44.58(6;35.21)	27.23(2;3.96)
CLUPEIDAE	210.6(12;641.8)	6.37(11;6.03)	4.8(3;0.16)	4.38(9;2.94)	6.59(4;3.33)	-
BREVOORTIA	-	-	-	-	32.18(17;50.75)	4.34(18;4.35)
BREVOORTIA GUNTERI	-	-	-	2.58(2;1.16)	5.57(10;3.43)	9.69(19;14.41)
BREVOORTIA PATRONUS	8.55(1;.)	-	15.6(13;29.22)	15.68(29;29.73)	74(96;126.6)	109.5(80;241.7)
ETRUMEUS TERES	-	-	2.18(1;.)	-	15.99(1;.)	9.02(4;9.11)
OPISTHONEMA OGLINUM	34.89(44;68.21)	185.4(71;581.2)	137.6(125;279)	47.92(12;84.3)	3.95(5;3.7)	-
HARENGULA JAGUANA	22.89(15;31.56)	99.2(10;182.3)	2.6(9;1.87)	73.4(9;168.3)	-	-
HARENGULA PENSACOLAE	25.25(22;37.88)	16.51(31;27.56)	16.04(6;26.51)	4.11(1;.)	-	-
SARDINELLA	-	2.3(1;.)	-	1.94(1;.)	-	-
ENGRAULIDAE	236(133;462.1)	262.6(113;842.1)	92.7(127;187.3)	12.99(48;17.2)	4.48(19;4.88)	26.44(3;41.74)
ANCHOA	-	2.18(1;.)	74.8(21;78.4)	1.37(3;0.36)	6.42(5;3.76)	7.25(16;7.23)
ANCHOA HEPSETUS	-	3.88(2;0.56)	9.15(15;10.81)	3.45(2;1.96)	1.16(2;0.47)	-
ANCHOA MITCHILLI	2.84(1;.)	-	1.18(1;.)	-	-	-

Table II-F continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
ANCHOA NASUTA	-	-	-	-	-	-
ANCHOVIELLA	-	-	-	-	-	7.73(1;.)
ANCHOVIELLA PERFASCIATA	3.48(1;.)	1.17(1;.)	-	2.68(1;.)	-	-
GONOSTOMATIDAE	16.89(21;57.57)	9.05(18;13.42)	4.68(6;3.94)	3.37(3;2.31)	2.1(1;.)	-
CYCLOTHONE	11.34(4;10.57)	2.47(14;3.49)	2.18(2;0.81)	-	10.11(1;.)	-
CYCLOTHONE BRAUERI	-	3.58(3;1.98)	2.07(1;.)	-	-	-
VINCIGUERRIA	3.29(5;2.42)	3.04(4;1.66)	1.91(3;1.43)	-	-	-
VINCIGUERRIA NIMBARIA	5.68(1;.)	-	2.7(2;2.03)	-	-	1.06(1;.)
MELANOSTOMIIDAE	1.74(1;.)	-	-	-	-	-
BATHOPHILUS	1.54(2;0.24)	-	-	-	-	-
LEPTOSTOMIAS GLADIATOR	-	7.93(1;.)	-	-	-	-
STOMIIDAE	2.29(1;.)	-	-	-	-	-
STOMIAS	2.44(4;1.05)	1.09(1;.)	-	-	-	-
MYCTOPHIFORMES	-	2.28(1;.)	1.33(1;.)	1.73(1;.)	-	-
SYNODONTIDAE	1.49(1;.)	2.81(12;1.69)	3.76(2;1.19)	4.64(10;5.17)	2.69(8;2.8)	4.08(12;4.46)
SYNODUS	2.95(8;2.26)	4.07(9;2.23)	9.56(17;10.92)	8.29(17;8.66)	38.58(13;55.84)	6.19(17;4.16)
TRACHINOCEPHALUS MYOPS	-	-	-	-	-	-
PARALEPIDIDAE	1.6(9;0.86)	3.04(5;2.04)	3(2;1.32)	3.78(1;.)	1.76(1;.)	5.71(2;0.79)
LESTIDIOPS	7.15(1;.)	-	-	-	-	-
LESTIDIOPS AFFINIS	-	0.98(1;.)	-	-	-	-
STEMONOSUDIS INTERMEDIA	-	-	-	1.38(1;.)	-	-
LESTROLEPIS INTERMEDIA	-	-	-	-	-	-
SCOPELARCHUS	-	2.04(1;.)	-	-	-	-
SCOPELOSAURIDAE	2.14(1;.)	-	-	-	-	-
MYCTOPHIDAE	13.59(68;18.14)	11.72(66;12.4)	14.7(36;17.49)	14.1(41;27.63)	17.48(11;22.69)	3.88(15;3.36)
DIAPHUS	-	-	-	-	-	-
LAMPANYCTUS	-	2.59(11;1.42)	8.47(4;7.05)	-	-	-
NOTOSCOPELUS RESPLENDENS	-	2.14(2;0.21)	-	-	-	-
HYGOPHUM	-	4.89(11;3.83)	53.4(9;109.9)	5.13(1;.)	-	-
HYGOPHUM TAANINGI	1.68(1;.)	-	-	-	-	-
MYCTOPHUM	2.63(1;.)	2.04(1;.)	2.69(3;1.82)	-	-	-
MYCTOPHUM SELENOPS	1.5(1;.)	-	-	-	-	-
GOBIESOCIDAE	-	-	-	1.73(1;.)	1.76(1;.)	2.08(1;.)
GOBIESOX STRUMOSUS	-	1.48(4;0.21)	3.14(7;1.4)	3.84(27;3.81)	4.56(4;2.83)	3.05(3;2.7)
ANTENNARIIDAE	-	-	-	1.73(1;.)	-	-
HISTRIO HISTRIO	-	-	-	-	-	1.73(1;.)
CHAUNAX	-	-	-	-	-	-
OGCOCEPHALIDAE	-	-	-	-	-	-
CERATIOIDEI	-	-	1.83(1;.)	1.36(1;.)	7.02(2;4.38)	1.76(2;1)
CAULOPHRYNIDAE	-	-	-	1.73(1;.)	-	2.53(4;1.72)

Table II-F continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
ANCHOA NASUTA	-	-	3.57(1;.)	-	-	-
ANCHOVIELLA	4.28(1;.)	-	3.96(2;2.82)	-	4.93(2;5.81)	-
ANCHOVIELLA PERFASCIATA	-	-	4.14(3;0.49)	-	-	-
GONOSTOMATIDAE	4.75(1;.)	1.42(2;0.89)	-	-	3.17(8;3.23)	3.88(5;3.45)
CYCLOTHONE	-	1.64(1;.)	1.63(1;.)	-	-	3.14(2;3.4)
CYCLOTHONE BRAUERI	-	-	-	-	1.83(1;.)	-
VINCIGUERRIA	-	-	-	3.37(1;.)	1.6(2;0.06)	-
VINCIGUERRIA NIMBARIA	-	-	-	-	0.89(1;.)	-
MELANOSTOMIIDAE	-	-	-	-	-	-
BATHOPHILUS	-	-	-	-	-	-
LEPTOSTOMIAS GLADIATOR	-	-	-	-	-	-
STOMIIDAE	-	-	-	-	-	-
STOMIAS	-	-	-	3.37(1;.)	0.91(1;.)	-
MYCTOPHIFORMES	-	-	-	-	-	-
SYNODONTIDAE	2.42(4;1.73)	9.74(7;8.48)	1.65(3;0.36)	-	3.24(4;1.93)	-
SYNODUS	23.85(14;59.01)	14(15;14.16)	17.24(16;26.76)	8.42(12;11.69)	4.25(13;4.55)	3.97(3;2.55)
TRACHINOCEPHALUS MYOPS	-	1.72(1;.)	-	-	-	-
PARALEPIDIDAE	-	-	3.74(1;.)	1.66(2;0.27)	1.1(1;.)	3.32(3;2.11)
LESTIDIOPS	-	-	-	-	-	-
LESTIDIOPS AFFINIS	-	-	-	-	-	-
STEMONOSUDIS INTERMEDIA	-	-	-	-	-	-
LESTROLEPIS INTERMEDIA	-	0.86(1;.)	-	-	-	-
SCOPELARCHUS	-	-	-	-	-	-
SCOPELOSAURIDAE	-	-	-	-	-	-
MYCTOPHIDAE	4.94(7;3.66)	5.74(9;5.23)	5.43(19;5.91)	15.76(14;24.17)	12.88(46;22.09)	7.38(28;8.65)
DIAPHUS	-	-	-	-	1.87(1;.)	-
LAMPANYCTUS	-	-	-	-	-	-
NOTOSCOPELUS RESPLENDENS	-	-	-	-	-	-
HYGOPHUM	-	-	-	-	1.97(2;0.64)	-
HYGOPHUM TAANINGI	-	-	-	-	-	-
MYCTOPHUM	-	-	-	-	-	-
MYCTOPHUM SELENOPS	-	-	-	-	-	-
GOBIESOCIDAE	-	-	-	-	-	-
GOBIESOX STRUMOSUS	2.75(4;2.01)	4.58(5;3.74)	13.87(1;.)	2.43(2;1.33)	1.1(1;.)	-
ANTENNARIIDAE	-	2.89(2;0.25)	-	-	1.95(1;.)	-
HISTRIO HISTRIO	-	-	-	-	-	-
CHAUNAX	3.37(1;.)	-	-	-	-	-
OGCOCEPHALIDAE	-	-	-	-	1.83(1;.)	1.37(1;.)
CERATIOIDEI	1.45(1;.)	-	3.16(4;2.52)	1.49(1;.)	0.99(2;0.29)	2.81(1;.)
CAULOPHRYNIDAE	-	-	1.75(2;0.11)	-	-	-

Table II-F continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
GADIFORMES	1.18(1;.)	-	-	-	-	-
BREGMACEROTIDAE	-	-	-	-	-	2.22(1;.)
BREGMACEROS	2.56(1;.)	4.24(6;3.08)	1.48(1;.)	6.82(3;5.87)	15.68(6;33.14)	12.96(1;.)
BREGMACEROS ATLANTICUS	2.47(25;1.48)	2.89(9;1.83)	1.53(1;.)	-	-	-
BREGMACEROS CANTORI	11.56(52;21.21)	24.23(36;59.38)	15.09(33;29.53)	13.39(39;23.37)	30.58(17;60.96)	31.15(37;52.72)
GADIDAE	3.65(2;2.87)	1.7(2;0.16)	-	-	-	-
GADUS	1.32(1;.)	-	-	-	-	-
UROPHYCIS	4.68(8;7.59)	3.32(6;1.21)	2.55(2;0.04)	-	-	-
UROPHYCIS REGIA	1.18(1;.)	-	-	-	-	-
OPHIDIIDAE	3.47(4;4.69)	3.2(8;3)	1.83(2;0.98)	2.81(7;2.07)	2.63(4;1.45)	3.71(3;3.96)
BROTULA	-	-	-	-	-	-
BROTULA BARBATA	-	-	-	-	-	1.45(1;.)
LEPOPHIDIUM	-	-	-	2.28(1;.)	4.53(4;3.58)	6.53(30;5.17)
LEPOPHIDIUM STAUROPHOR	1.75(2;0.19)	-	-	-	-	8.51(1;.)
OPHIDION	-	3.98(1;.)	2.8(4;2.2)	19.23(2;25.46)	20.23(1;.)	6.17(1;.)
OPHIDION SELENOPS	-	-	-	-	3.93(1;.)	2.02(4;1.03)
OPHIDION NOCOMIS	-	-	-	1.23(1;.)	-	-
EXOCOETIDAE	2.03(1;.)	-	-	-	-	-
HYPORHAMPHUS UNIFASCIATUS	-	-	-	-	-	-
ATHERINIDAE	-	1.31(1;.)	-	10.95(5;16.94)	3.13(2;1.86)	1.92(4;1.01)
MEMBRAS MARTINICA	-	-	-	5.06(9;3.26)	1.73(1;.)	1.42(1;.)
MELAMPHAES	1.64(1;.)	-	-	-	-	-
LAMPRIDAE	-	-	-	-	-	-
VELIFERIDAE	0.92(1;.)	-	-	-	-	-
ZU CRISTATUS	3.76(1;.)	-	-	-	-	-
FISTULARIA	-	-	-	-	-	-
MACRORHAMPHOSUS SCOLOPAX	7.05(19;15.63)	2.97(6;2.18)	3.3(7;2.44)	-	-	-
CENTRISCIDAE	-	-	-	-	-	-
SYNGNATHIDAE	-	-	-	-	-	-
SYNGNATHUS	1.89(1;.)	1.93(4;1.4)	2.2(3;1.16)	1.47(4;0.66)	4.51(3;2.28)	3.01(7;2.09)
SYNGNATHUS LOUISIANAE	-	-	-	5.25(4;5.88)	4.63(2;3.87)	1.78(3;0.44)
SCORPAENIFORMES	1.61(1;.)	1.59(1;.)	-	1.57(1;.)	7.39(1;.)	-
SCORPAENIDAE	4.04(4;2.01)	1.38(1;.)	-	6.67(6;7.43)	-	1.42(2;0.29)
SCORPAENA	2.63(1;.)	5.29(6;5.84)	4.25(5;3.32)	7.91(9;5.71)	6.77(1;.)	2.7(4;1.69)
TRIGLIDAE	2.61(2;1.39)	1.34(2;0.13)	-	10.64(2;0.11)	1.76(1;.)	1.07(1;.)
PRIONOTUS	9.51(5;15.53)	5.36(5;2.89)	4.68(11;5.03)	8.1(17;10.8)	20.52(8;21.93)	4.03(7;1.62)
DACTYLOPTERIDAE	1.18(1;.)	-	-	-	-	-
DACTYLOPTERUS VOLITANS	-	-	-	-	-	-
PERCIFORMES	3.98(28;4.28)	5.77(33;7.33)	23.24(18;30.79)	57.2(27;198)	13.46(32;14.43)	29.13(22;48.95)
PERCOIDEI	-	0.98(1;.)	-	-	-	-

Table II-F continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
GADIFORMES	-	-	-	-	-	-
BREGMACEROTIDAE	-	-	-	-	-	-
BREGMACEROS	-	21.85(10;19.04)	5.97(1;.)	2.07(2;0.18)	38.18(12;97.49)	1.95(2;0.85)
BREGMACEROS ATLANTICUS	-	-	11.73(1;.)	-	0.78(1;.)	2.81(1;.)
BREGMACEROS CANTORI	96.4(27;267.6)	132.1(18;396.1)	25.35(44;85.98)	28.85(26;30.95)	31.32(57;47.5)	9.78(25;11.76)
GADIDAE	-	-	-	-	2.4(3;1.42)	-
GADUS	-	-	-	-	-	-
UROPHYCIS	-	-	-	-	1.66(2;0.53)	4.78(8;4.73)
UROPHYCIS REGIA	-	-	-	-	-	-
OPHIDIIDAE	3.41(3;1.43)	23.06(5;24.48)	14.36(20;33.5)	13.56(6;17.7)	9.85(34;25.95)	3.03(4;1.87)
BROTULA	-	-	-	-	2.39(1;.)	-
BROTULA BARBATA	-	-	1.95(1;.)	9.65(12;6.6)	3.79(11;2.89)	1.72(1;.)
LEPOPHIDIUM	15.65(22;47.48)	11.99(19;12.98)	18.62(29;55.33)	18.44(20;19.26)	4.92(32;4.49)	2.23(4;1.4)
LEPOPHIDIUM STAUROPHOR	-	-	3.39(2;2.49)	-	1.81(3;1.28)	-
OPHIDION	-	-	2.61(1;.)	7.04(15;6.63)	4.56(18;5.47)	-
OPHIDION SELENOPS	1.08(1;.)	-	3.68(1;.)	5.7(3;7.41)	3.48(1;.)	-
OPHIDION NOCOMIS	-	-	-	-	-	-
EXOCOETIDAE	6.63(2;6.79)	-	1.87(2;0.13)	-	-	-
HYPORHAMPHUS UNIFASCIATUS	1.5(1;.)	-	-	-	-	-
ATHERINIDAE	-	-	-	-	-	-
MEMBRAS MARTINICA	-	-	-	-	-	-
MELAMPHAES	-	-	-	-	-	-
LAMPRIDAE	-	-	-	-	0.89(1;.)	-
VELIFERIDAE	-	-	-	-	-	-
ZU CRISTATUS	-	-	-	-	-	-
FISTULARIA	1.07(1;.)	-	-	-	-	-
MACRORHAMPHOSUS SCOLOPAX	-	-	-	-	0.89(1;.)	1.32(2;0.04)
CENTRISCIDAE	15.65(2;14.41)	-	-	-	-	-
SYNGNATHIDAE	-	-	5.95(1;.)	-	1.46(1;.)	2.91(1;.)
SYNGNATHUS	1.88(3;0.61)	1.52(1;.)	1.05(1;.)	2.74(1;.)	2.94(4;1.36)	-
SYNGNATHUS LOUISIANAE	1.3(1;.)	-	1.92(1;.)	-	-	-
SCORPAENIFORMES	-	-	-	2.17(1;.)	4.51(2;2.95)	-
SCORPAENIDAE	-	-	3.71(3;2.01)	-	2.41(4;1.62)	-
SCORPAENA	2.22(3;1.87)	-	3.78(5;2.34)	4.18(6;1.8)	3.32(5;4.18)	-
TRIGLIDAE	-	-	1.03(1;.)	-	-	-
PRIONOTUS	4.76(1;.)	12.28(1;.)	2.64(2;1.76)	4.57(8;3.39)	3.78(3;1.58)	4.79(1;.)
DACTYLOPTERIDAE	-	-	-	-	2.04(2;0.39)	-
DACTYLOPTERUS VOLITANS	-	-	2.06(1;.)	-	-	-
PERCIFORMES	19.22(43;24.34)	42.93(49;99.33)	107.1(79;811.6)	18.7(21;26.98)	13.57(9;23.11)	6.51(3;2.9)
PERCOIDEI	-	-	18.85(4;9.58)	2.01(1;.)	1.78(1;.)	2.82(5;1.51)

Table II-F continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
SERRANIDAE	2.93(10;2.1)	5.53(14;6.74)	3.85(14;2.91)	3.35(21;3.61)	12.57(13;14.75)	4.57(25;3.3)
CENTROPRISTIS	-	2.17(1;.)	-	-	5.89(1;.)	4.95(7;3.73)
CENTROPRISTIS STRIATA	-	-	-	-	-	-
ANTHIAS	2.39(2;0.51)	2.16(1;.)	2.07(1;.)	4.56(1;.)	-	-
DIPLECTRUM	-	-	-	-	2.87(1;.)	2.49(3;1.24)
DIPLECTRUM FORMOSUM	-	-	-	-	-	-
LIOPROPOMA	-	-	-	-	-	1.21(1;.)
PRONOTOGRAMMUS AUREORUBENS	1.4(1;.)	-	-	-	-	-
SERRANICULUS PUMILIO	-	-	-	-	-	-
SERRANUS	7.01(2;0.25)	3.74(1;.)	-	1.34(1;.)	-	4.34(3;3.05)
RYPTICUS	-	-	-	-	-	1.87(1;.)
PSEUDOGRAMMA	1.28(1;.)	-	-	-	-	-
PRIACANTHIDAE	-	1.36(1;.)	1.14(1;.)	-	-	-
APOGONIDAE	-	-	-	-	-	-
POMATOMIDAE	-	-	-	-	-	-
POMATOMUS SALTATRIX	1.88(2;0.36)	3.26(1;.)	1.83(1;.)	2.81(3;1.67)	-	-
RACHYCENTRON CANADUM	-	-	-	-	-	3.36(4;1.81)
CARANGIDAE	4.74(1;.)	22.61(2;27.75)	-	2.71(1;.)	4.49(17;4.1)	4.63(3;5.01)
TRACHURUS LATHAMI	9.08(10;11.11)	5.02(14;5.71)	4.6(4;4.18)	5.57(5;4.85)	-	3.62(3;1.04)
CARANX	-	5.28(1;.)	-	2.06(4;0.98)	1.78(2;0.1)	2.28(5;1.94)
CARANX HIPPOS	-	-	-	-	-	-
CARANX LATUS	-	-	-	-	-	-
CARANX CRYSOS	-	-	-	2.01(2;0.38)	-	-
CHLOROSCOMBRUS CHRYSURUS	4.42(1;.)	1.41(2;0.04)	-	3.41(4;0.39)	72.2(17;118.4)	35.97(66;86.28)
OLIGOPLITES SAURUS	-	-	-	-	-	13.44(3;3.81)
SELAR CRUMENOPHTHALMUS	2.13(1;.)	3.16(1;.)	2.07(1;.)	-	-	9.49(3;6.47)
SELENE	-	-	-	-	1.95(2;0.02)	-
SELENE VOMER	-	-	-	-	-	2.47(3;1.77)
SELENE SETAPINNIS	-	-	-	-	-	2.08(1;.)
SERIOLA	-	-	-	1.48(2;0.35)	-	3.02(3;0.25)
DECAPTERUS	-	-	-	-	-	-
DECAPTERUS PUNCTATUS	2.55(1;.)	-	-	-	4.25(1;.)	40.13(1;.)
ELAGATIS BIPINNULATA	-	-	-	1.38(1;.)	5.98(2;5.84)	-
CORYPHAENA	-	-	-	-	1.85(1;.)	-
CORYPHAENA HIPPURUS	-	-	-	-	-	-
LUTJANIDAE	-	1.06(1;.)	-	11.74(1;.)	-	7.49(1;.)
LUTJANUS	10.48(1;.)	12.7(1;.)	-	-	-	5.3(9;5.94)
LUTJANUS CAMPECHANUS	-	-	-	-	-	2.6(1;.)
GERREIDAE	-	-	-	-	-	5.25(1;.)
EUCINOSTOMUS GULA	-	-	-	-	-	-

Table II-F continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
SERRANIDAE	6.88(20;10.9)	6.49(13;10.4)	7.07(22;7.6)	5(11;4.51)	2.01(14;0.7)	3.04(8;2.41)
CENTROPRISTIS	66.7(2;90.2)	-	-	-	-	-
CENTROPRISTIS STRIATA	1.87(1;.)	-	-	-	-	-
ANTHIAS	5.72(1;.)	-	5.59(1;.)	-	-	-
DIPLECTRUM	-	-	-	-	-	-
DIPLECTRUM FORMOSUM	-	-	1.63(1;.)	-	-	-
LIOPROPOMA	-	-	2.11(2;0.07)	-	-	-
PRONOTOGRAMMUS AUREORUBENS	-	-	-	-	-	-
SERRANICULUS PUMILIO	-	-	-	2.1(1;.)	-	-
SERRANUS	1.42(1;.)	-	5.39(2;2.92)	-	0.95(2;0.05)	-
RYPTICUS	-	-	-	-	-	-
PSEUDOGRAMMA	-	-	-	-	-	-
PRIACANTHIDAE	-	-	1.41(1;.)	-	-	-
APOGONIDAE	-	-	2.61(1;.)	-	-	-
POMATOMIDAE	-	-	1.49(1;.)	-	-	-
POMATOMUS SALTATRIX	-	-	3.25(2;3.14)	21(12;35.09)	8.38(11;6.38)	-
RACHYCENTRON CANADUM	-	-	-	-	-	-
CARANGIDAE	3.53(6;2.21)	22.53(17;21.93)	10.71(16;18.56)	2.18(5;0.92)	-	1.95(1;.)
TRACHURUS LATHAMI	5.04(1;.)	-	2.84(3;2.03)	5.48(1;.)	-	2.7(1;.)
CARANX	6.7(10;4.65)	11.82(2;5.15)	24.16(14;66.09)	4.12(2;2.72)	-	-
CARANX HIPPOS	1.08(1;.)	-	-	-	-	-
CARANX LATUS	1.2(1;.)	-	-	-	-	-
CARANX CRYSOS	13.26(3;6.36)	0.88(2;0.36)	4.31(2;3.16)	-	-	-
CHLOROSCOMBRUS CHRYSURUS	145.5(90;464.5)	229.5(115;1001.6)	60.9(139;108.5)	10.49(29;14.71)	-	1.35(1;.)
OLIGOPLITES SAURUS	9.48(12;5.6)	5.73(2;1.09)	2(1;.)	-	-	-
SELAR CRUMENOPHTHALMUS	0.99(2;0.18)	1.56(6;0.86)	5.95(8;6.48)	4.24(6;3.79)	3.62(2;2.5)	2.2(1;.)
SELENE	-	12.25(7;15.63)	-	1.99(2;0.03)	-	-
SELENE VOMER	1.4(2;0.65)	-	1.49(2;0.54)	-	-	-
SELENE SETAPINNIS	-	-	3.7(1;.)	-	-	-
SERIOLA	-	3.67(1;.)	8.42(1;.)	-	1.1(1;.)	-
DECAPTERUS	-	-	1.66(1;.)	-	-	-
DECAPTERUS PUNCTATUS	3.91(4;3.34)	18.71(2;8.26)	9.22(8;8.59)	1.63(1;.)	1.72(1;.)	-
ELAGATIS BIPINNULATA	-	-	3.32(2;0.23)	-	-	-
CORYPHAENA	-	-	-	-	-	-
CORYPHAENA HIPPURUS	-	-	1.14(1;.)	-	-	-
LUTJANIDAE	4.08(1;.)	-	4.11(6;2.91)	-	2.26(2;0.07)	-
LUTJANUS	7.33(10;4.46)	4.51(4;2.65)	8.99(13;11.55)	-	9.73(2;12.39)	-
LUTJANUS CAMPECHANUS	-	-	1.36(2;0.37)	5.02(1;.)	-	-
GERREIDAE	-	-	-	-	1.95(1;.)	-
EUCINOSTOMUS GULA	1.08(1;.)	-	-	-	-	-

Table II-F continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
HAEMULIDAE	-	1.5(1;.)	-	-	-	-
ORTHOPRISTIS CHRYSOPTERA	-	-	-	3.58(9;2.57)	-	-
SPARIDAE	2.43(3;1.12)	1.41(2;0.25)	-	3.33(8;2.41)	-	4.42(2;3.21)
LAGODON RHOMBOIDES	7.28(27;12.8)	2.63(13;1.66)	7.35(10;5.14)	1.89(1;.)	9.91(3;1.96)	2.58(1;.)
ARCHOSARGUS PROBATOCEPHALUS	-	-	18.19(2;23.56)	8.9(18;6.63)	-	-
SCIAENIDAE	2.45(7;1.47)	18.09(2;24.19)	19.13(1;.)	7.04(9;7.75)	2.84(5;2.3)	2.19(5;1.27)
CYNOSCION	1.89(1;.)	-	-	-	4.38(2;0.9)	1.22(1;.)
CYNOSCION NEBULOSUS	-	1.81(1;.)	5.7(3;3.94)	6.52(10;11.07)	2.08(4;1.05)	5.12(8;4.06)
CYNOSCION NOTHUS	0.94(1;.)	-	-	-	7.37(1;.)	1.58(1;.)
CYNOSCION ARENARIUS	13.62(5;21.81)	15.48(44;18.87)	26.99(44;34.52)	45.13(89;100.29)	28.89(64;41.14)	23.25(72;34.2)
BAIRDIELLA CHRYSOURA	2.09(1;.)	-	2.52(1;.)	5.2(9;3.91)	-	3.76(3;4.31)
LEIOSTOMUS XANTHURUS	6.51(48;7.86)	3.2(21;2.97)	3.11(4;1.52)	10.31(1;.)	1.76(1;.)	2(2;0.26)
LARIMUS FASCIATUS	1.37(4;0.82)	3.51(4;2.98)	2.48(2;1.5)	2.25(3;1.18)	4.07(2;1.34)	2.72(5;2.01)
MENTICIRRHUS	1.42(3;0.45)	2.58(4;1.98)	3.8(5;4.2)	3.93(28;3.43)	3.21(11;1.94)	5.38(26;6.32)
MENTICIRRHUS AMERICANUS	-	-	-	-	-	-
MICROPOGONIAS UNDULATUS	10.69(45;16.48)	28.36(54;85.66)	23.16(14;19.58)	7.48(16;6.1)	-	10.92(4;9.63)
POGONIAS CROMIS	2.86(6;1.12)	3.73(8;3.58)	17.28(8;17.94)	6.08(12;4.82)	6.71(1;.)	-
SCIAENOPS OCELLATUS	1.47(2;0.05)	-	-	3.36(3;1.9)	6.71(1;.)	-
STELLIFER	-	-	-	-	-	-
STELLIFER LANCEOLATUS	1.16(1;.)	-	-	6.55(9;5.4)	4.02(7;2.56)	9.71(11;13.41)
MULLIDAE	2.7(2;0.07)	-	-	5.25(5;3.62)	-	-
EPHIPPIDIDAE	-	-	-	-	7.2(2;0.23)	5.91(2;2.06)
CHAETODIPTERUS FABER	12.22(1;.)	-	-	-	21.35(12;19.09)	4.85(20;4.05)
BRAMIDAE	-	-	-	1.96(1;.)	-	-
MUGILIDAE	-	-	-	-	-	2.66(2;0.83)
MUGIL	6.07(6;6.09)	-	-	-	-	6.69(1;.)
MUGIL CEPHALUS	4.79(16;6.34)	6.54(10;6.59)	4.77(6;3.17)	4.99(4;6.03)	16.34(3;4.27)	4.09(6;2.45)
MUGIL CUREMA	-	1.09(1;.)	-	1.83(1;.)	2.07(4;1.05)	1.91(2;0.23)
SPHYRAENA	3.62(1;.)	3.98(3;4.4)	-	1.81(2;0.2)	2.73(4;2.37)	3.43(13;2.63)
SPHYRAENA GUACHANCHO	-	-	-	-	-	-
LABRIDAE	-	1.49(1;.)	-	3.62(2;2.45)	2.48(2;0.9)	-
THALASSOMA BIFASCIATUM	-	-	-	1.95(1;.)	-	-
SCARIDAE	2.65(1;.)	-	-	-	-	-
URANOSCOPIDAE	-	7.93(1;.)	-	-	-	-
BLENNIIDAE	2.84(17;1.47)	1.94(8;0.82)	4.55(16;3.19)	6.57(58;7.83)	11.8(55;12.72)	7.65(39;7.24)
HYPLEUROCHILUS	-	-	-	-	-	7.76(1;.)
SCARTELLA CRISTATA	-	-	-	-	-	-
CALLIONYMIDAE	-	-	-	0.79(1;.)	-	-
CALLIONYMUS	-	-	-	-	-	-
CALLIONYMUS PAUCIRADIATUS	-	-	-	-	-	-

Table II-F continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
HAEMULIDAE	1.37(1;.)	-	-	-	1.83(1;.)	-
ORTHOPRISTIS CHRYSOPTERA	-	-	-	-	-	-
SPARIDAE	1.86(1;.)	-	4.32(2;3.88)	-	7.08(3;9.89)	-
LAGODON RHOMBOIDES	8.55(1;.)	-	1.98(1;.)	-	6.32(5;1.73)	3.5(12;2.83)
ARCHOSARGUS PROBATOCEPHALUS	-	-	-	-	-	-
SCIAENIDAE	5.02(5;2.5)	11.53(4;9.99)	23.52(14;47.13)	8.45(15;12.95)	4.81(9;6.08)	-
CYNOSCION	-	13.08(6;9.18)	47.52(42;68.28)	4.52(18;3.18)	-	-
CYNOSCION NEBULOSUS	7.54(34;7.98)	19.07(29;25.35)	5.82(32;8.71)	7.15(8;6.29)	2.31(2;1.95)	-
CYNOSCION NOTHUS	4.91(2;2.91)	14.58(3;18.71)	4.08(15;4.11)	2.65(5;1.41)	14.46(8;17.2)	-
CYNOSCION ARENARIUS	73.7(85;186.7)	284.2(110;1759.2)	61.5(120;145.5)	9.58(13;11.28)	6.58(16;7.46)	-
BAIRDIELLA CHRYSOURA	7.55(6;5.53)	2.33(4;1.14)	15.04(6;19.48)	-	3.64(3;2.64)	2.91(1;.)
LEIOSTOMUS XANTHURUS	5.68(3;1.06)	-	13.13(12;19.17)	8.35(11;5.68)	9.72(52;12.27)	42.78(53;128.53)
LARIMUS FASCIATUS	0.98(4;0.22)	0.86(3;0.01)	3.22(16;4.23)	6.37(15;11.35)	3.23(9;2.13)	1.5(3;0.5)
MENTICIRRHUS	9.88(38;28)	7.04(21;6.68)	6.3(62;7.76)	9.07(41;18.5)	1.46(5;0.67)	-
MENTICIRRHUS AMERICANUS	-	-	41.61(1;.)	-	-	-
MICROPOGONIAS UNDULATUS	5.3(2;0.24)	-	32.2(27;54.58)	212.4(108;1109.3)	95.4(132;211.5)	15.76(63;19.75)
POGONIAS CROMIS	-	-	3.76(2;3.52)	7.15(2;2.36)	42.37(1;.)	2.21(1;.)
SCIAENOPS OCELLATUS	-	88.2(36;436.4)	242.5(111;603.7)	12.57(58;24.54)	4(1;.)	-
STELLIFER	-	-	5.25(1;.)	-	-	-
STELLIFER LANCEOLATUS	3.02(8;1.6)	15.51(35;28.17)	36.65(24;86.51)	2.95(8;1.65)	1.8(2;0.34)	30.42(2;41.12)
MULLIDAE	5.72(1;.)	-	-	-	4.49(4;2.85)	6.82(1;.)
EPHIPPIDIDAE	4.17(1;.)	-	2.07(1;.)	-	-	-
CHAETODIPTERUS FABER	14.38(31;31.66)	10.81(19;14.72)	5.84(16;6.5)	-	3.65(2;0.24)	-
BRAMIDAE	-	-	-	-	2.59(1;.)	-
MUGILIDAE	1.31(1;.)	-	-	-	-	-
MUGIL	1.87(1;.)	-	10.87(3;6.62)	-	152.1(8;161.9)	-
MUGIL CEPHALUS	1.37(1;.)	2.76(1;.)	11.9(14;30.5)	18.37(7;26.34)	33.24(37;47.14)	8.77(9;9.77)
MUGIL CUREMA	1.5(2;0.01)	-	-	-	-	-
SPHYRAENA	4.83(13;4.42)	2.11(4;1.01)	5.08(28;4.24)	3.94(2;2.98)	55.5(1;.)	-
SPHYRAENA GUACHANCHO	-	2.07(2;1.72)	-	-	-	-
LABRIDAE	-	-	3.69(4;2.92)	1.36(1;.)	1.9(4;0.06)	22.46(1;.)
THALASSOMA BIFASCIATUM	-	-	-	-	-	-
SCARIDAE	-	-	-	-	-	-
URANOSCOPIDAE	-	-	-	-	1.17(1;.)	-
BLENNIIDAE	6.44(37;6.36)	7.73(44;6.19)	6.4(61;6.12)	5.27(30;5.18)	4.85(47;5.88)	3.63(28;2.19)
HYPLEUROCHILUS	-	-	-	-	-	-
SCARTELLA CRISTATA	-	-	-	-	1.37(1;.)	-
CALLIONYMIDAE	-	-	-	-	-	-
CALLIONYMUS	-	-	4.14(1;.)	-	-	-
CALLIONYMUS PAUCIRADIATUS	-	-	2.01(4;1.18)	2.77(2;2.12)	-	-

Table II-F continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
GOBIIDAE	6.18(41;8.24)	5.11(51;7.15)	12.29(29;16.72)	8.25(47;11.83)	32.28(36;70.67)	27.03(59;31.8)
GOBIONELLUS HASTATUS	-	1.38(1;.)	-	-	-	5.11(1;.)
MICRODESMIDAE	-	-	-	-	3.79(1;.)	-
MICRODESMUS	-	-	4.48(2;2.15)	1.48(3;0.13)	6.8(5;9.4)	3.52(18;1.99)
MICRODESMUS LANCEOLATUS	-	-	-	-	-	-
MICRODESMUS LONGIPINNIS	-	-	-	-	-	2.91(1;.)
GEMPYLIDAE	6.99(2;7.39)	2.12(2;1.61)	-	3.28(3;2.58)	-	-
DIPLOSPINUS MULTISTRIATUS	2.07(2;0.11)	1.48(1;.)	-	-	-	-
TRICHIURIDAE	-	-	-	-	-	2.08(1;.)
TRICHIURUS LEPTURUS	2.5(12;1.9)	2.49(7;1.52)	2.42(6;1.69)	7.39(28;9.97)	10.18(11;8.52)	5.01(20;5.15)
LEPIDOPUS	1.43(1;.)	-	-	-	-	-
SCOMBRIDAE	4.84(2;3.36)	3.44(2;2.83)	-	1.06(1;.)	3.25(5;1.04)	8.16(11;5.43)
EUTHYNNUS	-	-	-	-	-	-
EUTHYNNUS PELAMIS	-	1.45(2;0.86)	-	-	-	-
EUTHYNNUS ALLETTERATUS	-	2.38(1;.)	-	-	5.66(8;5.86)	5.03(18;4.87)
SARDA SARDA	-	1.81(1;.)	-	-	-	-
SCOMBER	-	-	-	3.51(1;.)	-	-
SCOMBER JAPONICUS	-	-	5.33(1;.)	-	-	2.89(2;0.58)
THUNNUS	-	3.13(1;.)	-	3.6(1;.)	-	2.03(1;.)
THUNNUS ALBACARES	-	-	-	-	-	-
THUNNUS ATLANTICUS	-	-	-	3.6(1;.)	-	-
SCOMBEROMORUS	-	-	-	-	3.54(1;.)	5.9(3;1.32)
SCOMBEROMORUS CAVALLA	-	-	-	-	1.48(1;.)	35.72(5;65.16)
SCOMBEROMORUS MACULATUS	-	-	-	9.26(15;12.44)	23.13(36;28.6)	6.5(37;5.44)
SCOMBEROMORUS REGALIS	-	-	-	-	-	1.63(1;.)
AUXIS	8.58(1;.)	-	-	1.89(2;0.62)	4.43(20;5.07)	5.78(15;5.75)
AUXIS THAZARD	-	-	-	-	-	-
STROMATEOIDEI	1.18(1;.)	-	-	-	-	-
NOMEIDAE	-	-	-	1.36(1;.)	-	-
ARIOMMA	2.72(23;1.71)	2.63(12;1.32)	3.77(6;3.65)	3.58(2;3.2)	1.85(3;0.63)	1.23(1;.)
CUBICEPS PAUCIRADIATUS	-	-	-	-	-	-
STROMATEIDAE	1.18(1;.)	-	-	9.49(1;.)	-	-
PEPRILUS	-	-	-	-	-	-
PEPRILUS PARU	-	-	-	7.13(2;8.36)	3.36(6;1.42)	4.56(17;5.97)
PEPRILUS BURTI	17.2(53;31.19)	8.91(50;16.93)	6.34(21;6.15)	3.41(15;3.07)	2.52(7;1.34)	2.19(4;1.28)
TETRAGONURIDAE	-	4.31(1;.)	-	-	-	-
TETRAGONURUS ATLANTICUS	-	2.38(1;.)	-	-	-	-
PLEURONECTIFORMES	-	-	-	1.73(1;.)	2.12(1;.)	3.06(4;2.04)
BOTHIDAE	1.54(1;.)	3.27(5;3.14)	-	3.98(6;2.75)	12.11(7;16.59)	3.92(6;3.5)
CITHARICHTHYS	1.28(2;0.83)	3.64(2;1.83)	-	9.07(1;.)	-	3.5(2;2.34)

Table II-F continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
GOBIIDAE	18.62(59;61.13)	13.17(43;14.43)	12.71(73;17.66)	8.91(40;10.51)	12.68(62;31.79)	8.09(30;12.67)
GOBIONELLUS HASTATUS	1.93(1;.)	2.03(1;.)	-	1.94(1;.)	-	-
MICRODESMIDAE	-	-	-	-	-	-
MICRODESMUS	7.33(10;11.68)	5.1(15;6.37)	6.13(21;7.19)	7.07(10;10.39)	3.19(11;2.87)	11.23(1;.)
MICRODESMUS LANCEOLATUS	-	2.86(5;1.69)	-	-	-	-
MICRODESMUS LONGIPINNIS	-	-	-	-	-	-
GEMPYLIDAE	-	-	3.68(1;.)	1.85(1;.)	3.18(2;2.94)	-
DIPLOSPINUS MULTISTRIATUS	-	2.53(2;0.33)	1.23(1;.)	3.51(2;0.78)	1.29(1;.)	5.61(1;.)
TRICHIURIDAE	-	-	-	-	-	-
TRICHIURUS LEPTURUS	3.9(9;4.1)	4.06(12;2.11)	5.88(25;5.68)	11.87(7;13.07)	9.82(37;24.07)	2.53(16;1.78)
LEPIDOPUS	-	-	-	-	-	-
SCOMBRIDAE	8.16(5;11.48)	2.82(4;3.24)	19.4(11;21.18)	-	4.56(1;.)	-
EUTHYNNUS	4.67(3;2.88)	-	34.43(1;.)	-	-	-
EUTHYNNUS PELAMIS	-	2.56(1;.)	5.7(1;.)	3.11(1;.)	-	-
EUTHYNNUS ALLETTERATUS	8.98(11;8.64)	5.23(20;5.23)	23.34(27;49.6)	6.74(1;.)	-	-
SARDA SARDA	-	-	-	-	-	-
SCOMBER	-	-	-	-	-	-
SCOMBER JAPONICUS	-	-	8.58(2;0.22)	1.94(1;.)	-	-
THUNNUS	-	-	-	-	-	-
THUNNUS ALBACARES	-	-	4.82(6;4.09)	3.45(2;2.31)	-	-
THUNNUS ATLANTICUS	-	-	1.43(3;0.34)	-	-	-
SCOMBEROMORUS	-	5.72(1;.)	2.27(1;.)	-	-	-
SCOMBEROMORUS CAVALLA	14.15(3;16.64)	3.47(5;2.96)	8.95(17;13.12)	-	-	-
SCOMBEROMORUS MACULATUS	14.25(33;30.23)	15.21(37;21.86)	7.21(53;6.61)	6.05(1;.)	-	-
SCOMBEROMORUS REGALIS	-	-	-	-	-	-
AUXIS	117(2;155.4)	2.72(3;0.58)	4.29(18;3.67)	3.06(8;1.73)	-	1.13(1;.)
AUXIS THAZARD	-	-	9.97(1;.)	-	-	-
STROMATEOIDEI	-	-	-	-	-	-
NOMEIDAE	-	-	25.26(1;.)	-	-	-
ARIOMMA	-	-	1.46(1;.)	1.47(2;0.01)	2.82(6;2)	2.86(5;1.72)
CUBICEPS PAUCIRADIATUS	-	1.3(4;0.47)	-	5(7;3.42)	2.15(3;1.34)	5.55(1;.)
STROMATEIDAE	-	-	-	-	-	-
PEPRILUS	-	-	1.78(2;0.41)	-	27.6(1;.)	-
PEPRILUS PARU	3.77(15;2.87)	171.3(32;929.4)	12.33(42;18.23)	2.77(2;0.05)	11.2(3;9.68)	-
PEPRILUS BURTI	4.67(3;0.55)	2.62(2;2.42)	3.37(11;2.07)	8.98(46;14.4)	8.71(45;9.42)	3.86(21;3.18)
TETRAGONURIDAE	-	-	-	-	-	-
TETRAGONURUS ATLANTICUS	-	-	-	-	-	-
PLEURONECTIFORMES	15.21(1;.)	4.28(1;.)	25.97(4;29.95)	-	-	-
BOTHIDAE	10.09(1;.)	2(7;1.15)	2.3(8;1.37)	9.97(4;4.87)	3.31(7;1.73)	1.29(2;0.08)
CITHARICHTHYS	2.5(3;2.38)	-	3.14(4;0.78)	1.84(2;0.24)	3.22(4;2.85)	1.31(2;0.08)

Table II-F continued.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
CITHARICHTHYS SPILOPTERUS	3.83(49;3.54)	4.96(44;7.24)	3.17(14;2.08)	4.19(17;4.56)	2.3(2;1.54)	8.71(14;21.31)
ETROPUS	1.63(1;.)	-	-	-	-	-
ETROPUS CROSSOTUS	4.61(13;4.04)	4.41(7;3.71)	3.58(12;3.18)	12.04(39;15.9)	31.44(49;51.25)	23.48(71;33.7)
ETROPUS RIMOSUS	1.49(1;.)	-	-	-	-	-
PARALICHTHYS	2.23(5;0.89)	1.59(1;.)	2.52(1;.)	-	-	1.63(1;.)
PARALICHTHYS LETHOSTIGMA	-	-	-	-	-	-
BOTHUS	-	3.63(1;.)	-	1.75(1;.)	4.9(1;.)	-
CYCLOPSETTA	-	-	-	-	-	1.28(2;0.29)
CYCLOPSETTA CHITTENDENI	-	-	-	-	-	-
CYCLOPSETTA FIMBRIATA	-	-	-	-	-	-
ENGYOPHRYS SENTA	-	-	-	-	3.52(1;.)	2.79(10;1.28)
MONOLENE SESSILICAUDA	-	3.32(2;2.93)	-	-	-	-
SYACIUM	12.22(1;.)	3.98(1;.)	-	2.35(2;0.58)	4.61(10;4.31)	7.92(36;11.34)
SYACIUM GUNTERI	-	-	-	-	-	31.81(1;.)
SYACIUM PAPILLOSUM	-	-	-	-	-	-
TRICHOPSETTA VENTRALIS	-	-	-	0.86(1;.)	12.9(3;4.86)	1.04(3;0.22)
PLEURONECTIDAE	-	-	-	4.47(2;3.35)	7.91(3;0.65)	-
VERASPER VARIEGATUS	-	-	2.07(1;.)	-	-	-
SOLEIDAE	2.14(1;.)	-	-	4.08(2;3.9)	5.32(2;2.54)	3.27(5;2.72)
TRINECTES MACULATUS	-	-	-	-	9.59(1;.)	2.29(3;1.73)
ACHIRUS LINEATUS	-	-	-	-	-	4.16(5;2.45)
CYNOGLOSSIDAE	-	-	-	1.73(1;.)	5.4(2;4.8)	-
SYMPHURUS	2.14(14;1.38)	4.35(6;4.65)	2.56(9;1.31)	5.73(25;6.73)	25.39(38;41.1)	16.76(76;22.86)
SYMPHURUS PLAGIUSA	-	-	-	6.05(5;5.07)	33.75(4;34.23)	-
BALISTIDAE	-	-	-	-	-	-
MONACANTHUS SETIFER	-	-	-	6.25(1;.)	-	-
TETRAODONTIDAE	-	-	-	-	-	4.37(1;.)
SPHOEROIDES	1.07(1;.)	-	-	2.03(7;0.79)	6.7(12;8.63)	5.27(27;5.26)

Table II-F continued.

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
CITHARICHTHYS SPILOPTERUS	20.91(18;53.54)	2.94(10;2.47)	2.81(22;1.77)	4.84(12;4.73)	4.44(23;4.64)	3.39(11;2.32)
ETROPUS	-	-	3.48(1;.)	3.1(2;1.33)	-	-
ETROPUS CROSSOTUS	15.88(64;22.02)	41.38(41;123.74)	10.17(55;25.44)	11.51(25;11.95)	5.52(26;9.09)	9.85(12;7.68)
ETROPUS RIMOSUS	-	-	-	-	-	-
PARALICHTHYS	4.58(1;.)	-	3.85(1;.)	-	2.46(6;1.52)	5.48(5;7.04)
PARALICHTHYS LETHOSTIGMA	-	-	-	-	-	4.89(2;4.12)
BOTHUS	-	2.76(2;2.28)	1.04(2;0.27)	9.01(2;4.19)	4.07(11;4.91)	-
CYCLOPSETTA	-	3.07(1;.)	-	-	8(3;9.17)	-
CYCLOPSETTA CHITTENDENI	1.16(2;0.31)	1.02(1;.)	-	-	-	-
CYCLOPSETTA FIMBRIATA	-	-	2.57(3;1.15)	-	-	-
ENGYOPHRYS SENTA	1.42(1;.)	1.76(2;0.08)	2.15(7;1.69)	2.47(5;0.86)	2.75(6;1.48)	-
MONOLENE SESSILICAUDA	-	-	-	-	-	-
SYACIUM	5.33(25;4.49)	9.03(26;11.49)	8.24(29;11.18)	18.52(9;23.94)	5.17(22;4.93)	2.7(1;.)
SYACIUM GUNTERI	-	-	4.2(2;1.34)	-	1.82(1;.)	-
SYACIUM PAPILLOSUM	1.08(1;.)	-	-	-	-	-
TRICHOPSETTA VENTRALIS	1.36(3;0.36)	4.03(1;.)	22.83(2;11.45)	17.58(3;18.81)	3.32(2;2.06)	-
PLEURONECTIDAE	-	-	-	-	-	-
VERASPER VARIEGATUS	-	-	-	-	-	-
SOLEIDAE	4.85(2;2.81)	3.67(1;.)	1.83(1;.)	-	-	1.11(1;.)
TRINECTES MACULATUS	-	12.88(1;.)	2.17(2;1.34)	-	-	-
ACHIRUS LINEATUS	10.85(4;5.62)	0.63(1;.)	-	-	-	-
CYNOGLOSSIDAE	-	-	-	-	4.53(1;.)	-
SYMPHURUS	30.25(72;49.82)	16.51(52;17.03)	22.04(76;24.65)	67.7(32;137.7)	17.28(51;56.88)	5.13(10;6.49)
SYMPHURUS PLAGIUSA	-	-	-	-	-	-
BALISTIDAE	-	-	1.66(1;.)	-	1.62(1;.)	-
MONACANTHUS SETIFER	-	-	-	-	-	-
TETRAODONTIDAE	-	-	-	-	-	-
SPHOEROIDES	4.04(17;4.53)	5.07(7;9.2)	17.08(2;13.31)	1.72(2;0.63)	4.17(1;.)	8.77(1;.)

TECHNICAL INFORMATION FOR THE LOOP MARINE AND ESTUARINE MONITORING PROGRAM REVISION

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MONITORING PROGRAM

In recognition of the potential for significant environmental impacts much attention was given to environmental safeguards by state and federal agencies and by the superport developers (see review by Sasser et al. 1982). Because of the potential risks associated with the construction and operation of the superport (e.g., bringing the world's largest oil tankers to one of the most productive fisheries resources in the world), both state and federal licenses required environmental monitoring of LOOP construction and operational activities. The environmental monitoring program (EMP) was developed under mandate of the Superport Environmental Protection Plan (revised, 1977), a regulation of the State of Louisiana implementing the Offshore Terminal Act. The EMP (section 3.1, page 8, March 1986) lists the objectives of the monitoring program as:

(1) to obtain seasonal environmental and ecological data so that conditions existing during operation can be related to historical baseline conditions;

(2) to detect during the operation of the project any adverse alterations or damages to the environment so that corrective action can be taken as soon as possible;

(3) to obtain sufficient data to determine the cause or causes of environmental damages or alterations so that responsibility can be properly placed; and

(4) to provide information in order to evaluate long- and short-term impacts of the project.

Ecological components of the estuarine/marine monitoring program included: water chemistry, physical hydrography (including brine discharge), zooplankton/ichthyoplankton, demersal nekton, benthos, and sediment quality. The Louisiana Department of Wildlife and Fisheries collected the data related to these components from 1978 to 1995. Vegetation and wildlife components were monitored by LSU (see Visser et al. 1996 and references therein).

This section is Task 3 of the data analysis project for the zooplankton/ichthyoplankton component. The objective of Task 3 is to provide LOTA and the Program Review Committee the technical information needed for revising the LOOP Marine and Estuarine Monitoring Program. The technical information, suggestions, and recommendations presented are based upon the four objectives of the EMP as influenced by the results of the data analyses. Specifically, after evaluation in light of the data analyses we endorse the four objectives of the EMP:

(a) Seasonal environmental and ecological data acquisition (EMP objective 1) is recommended because the analyses show degradation of environmental information when the frequency of sampling is reduced. Virtually all phenomena measured vary seasonally, and most nekton and plankton have complex lifecycles that involve different habitats in different seasons. A number of significant effects were lost when comparing quarterly to monthly sampling. Furthermore, because of the large natural variability of most plankton and nekton populations, the power of the current sampling and analytical protocol to detect ecologically significant changes is often marginal.

(b) Maintenance of a historical baseline (EMP objective 1) for analyses of possible oil spills or other environmental incidents has been shown to be critical in all components of the monitoring program because of the temporal and spatial dynamics of the inshore and offshore ecosystem. For example, clear temporal trends unrelated to the LOOP operation were shown for a number of variables. Further, the subsidence of the coast, lost of wetlands, and planned restoration projects are changing the spatial pattern of the estuary. Thus a baseline must be kept current in this environment.

(c) We believe that continued environmental monitoring is also prudent because of the importance of the commercial fisheries in the environs of the LOOP operation, and the potential for damages to this valuable resource (EMP objective 2 and 3).

(d) Finally, the requirement to evaluate both short- and long-term impacts (EMP objective 4) requires continuation of the LOTA Environmental Monitoring Program.

In light of these considerations the following specific recommendations for the Zooplankton and Ichthyoplankton component assume the continuation of an environmental monitoring program based on about the same level of information acquisition as previously. The fact that we were able to detect a number of temporal trends and some impacts of LOOP operations indicates that the present monitoring program is responsive to the spirit of the EMP objectives. However, a number of changes are recommended to: (1) increase the sensitivity of certain critical environmental variables to possible impacts; (2) make sampling more efficient, hence reducing costs; and (3) eliminate elements of the present monitoring program that appear to be insensitive to LOOP operations or are otherwise unnecessary.

SIGNIFICANT AND NON-SIGNIFICANT RESULTS

Only a few statistical analyses had significant or marginally significant Direct LOOP Impact implications (see DLI code in Table 12), while another test had results that appeared to have Indirect LOOP Impacts (ILI code). Some test results appear to be related to oil discharge or spills and/or subsequent clean up activities, while others to the construction phase. The discussion of marginally significant statistical results ($P \leq 0.1$) is environmentally and biologically important, because they suggest that those parameters are possibly sensitive to LOOP-related environmental perturbations. In addition, the identification of marginally significant parameters may serve as a good starting place for the selection of impact indicators in future environmental studies/analyses.

The zooplankton biomass data set was by far the most complete (longest time series and largest sample size) and had a greater number of significant and/or marginally significant test results. The most relevant test finding resulted from the BACI Long-term, Inshore, Combined Impacts Model (February 1978 to December 1994) which had the Clovelly Storage Dome oil spill data as a covariate. Oil as a covariate proved to be marginally significant ($P = 0.0983$) and showed an inverse (negative) relationship with zooplankton biomass (Table 5; Figure 5). Another relevant finding involving zooplankton biomass occurred within the DACI Inshore, Long-term Construction Impacts Model (Table 8) which had a marginally significant ($P = 0.0428$) During-After, Control-Impact interaction whereby mean zooplankton biomass at Impact stations was greater than the Controls (2.17 vs. 1.70 ml/m^3) During the construction phase, but was lower than Control estimates (1.40 vs. 1.81 ml/m^3) After construction. Perhaps construction disturbances initially stimulated the standing stock of the zooplankton population, which later was depressed by chronic or long-term combination of perturbations. Other marginally significant test results were more difficult to explain in terms of Indirect LOOP Impacts, such as the During-After, Control-Impact interaction ($P = 0.0566$; Table 10) seen within the zooplankton biomass data in the DACI Brine Diffuser model run on the HL data set over the May 1980 to July 1986 time period. Mean zooplankton biomass at Impact stations was less than Controls within the During period, but was greater than Controls After (Figure 14).

The Osteichthyes Control-Impact effect (Control mean densities greater than Impact) within the BACI Inshore Combined Impact Model ($P = 0.0861$; Table 5) was interesting, but had no additional impact support from the other interactions.

As with the oil, brine and construction analyses conducted inshore, the Offshore Terminal Oil Impact analyses, which used the platform oil spill data set as a covariate, produced a number of significant and marginally significant temporal (in this case seasonal and annual) results (Tables 11 and 12). However, two (2) test results relate directly to the discussion of LOOP-related environmental impacts. Densities for *Anchoa* spp., a very abundant, and ecologically important, coastal taxonomic group, displayed a marginally significant ($P = 0.0991$; Table 11; Figure 20) negative (inverse) relationship with oil spill data. This negative relationship was not strong and appeared to be influenced by the five largest oil spill points. In addition, this negative relationship was not additionally supported by other significant Control-Impact (spatial) interactions, although there were significant temporal relationships. The second noteworthy impact-related finding occurred with *Chloroscombrus chrysurus*, another very abundant coastal species. *Chloroscombrus chrysurus* displayed a marginally significant Control-Impact-Year-Season interaction ($P = 0.0271$; Table 11; Figure 23). This statistical result was mostly a reflection of the mean density values for the Control stations during the summer/fall time period in 1981 and 1985 being an order of magnitude greater than the Impact station densities. Control station densities were also an order of magnitude greater than Impact during the high abundance peak in the spring/summer period of 1982. Such a statistical finding may be indicative of environmental impact(s) associated with less clearly defined spatial and temporal events such as relatively small, chronic oil spills.

In summary, the negative relationship between the Clovelly Storage Dome oil spill data and zooplankton biomass, and the zooplankton biomass During-After, Control-Impact interaction within the DACI Inshore Long-term Construction Model, provide the clearest implications for LOOP related impacts. In the coastal/offshore environment, there were two indicators of potential environmental impact from LOOP-related activities. The Control-Impact, Offshore Terminal Oil Impact analysis of zooplankton and ichthyoplankton densities used platform oil spill data as a covariate, and Season and Year as main effects. The negative relationship between the Offshore Terminal oil and

Anchoa spp. densities and the Control-Impact-Year-Season interaction within the *Chloroscombrus chrysurus* analysis both indicate that these taxa are sensitive to LOOP-related environmental impact. Clearly when the data sets were large, continuous, or involved very abundant taxa, the analysis was sensitive enough to observe potential environmental impact(s).

The specific objectives of part one and two of Task 3 are to summarize all parameters tested which showed significant or noteworthy trends and those that were non-significant or unable to reject the null hypothesis of no difference (i.e., no change) for whatever reason (i.e., highly variable data, small sample sizes, low probability of likely impact, etc.). Failure to detect an interaction in such statistical analyses can result either because the available data does not provide sufficient power to detect the impact or because there is no discernable impact. A number of factors contribute to the lack of power in a statistical test. In environmental monitoring the reasons for low power are high variability, typical of the experimental material, and small sample sizes. High variability cannot be controlled by the investigator, but is offset if sample sizes are made large by either intensive or long-term sampling. The lack of a discernable impact can result because there is in fact no impact. However, an actual impact may not be detected if the experimental design is inadequate. Some examples of design inadequacies are poor choices in control stations and failure to sample for seasonal differences.

Attributing causality to any of these significant analytical results goes far beyond the original scope and sampling and statistical design of this study, and would necessitate extensive laboratory work, additional field work, and probably carefully controlled in situ exposure of a wide variety of zooplankton and ichthyoplankton to brine, oil, or construction/operational impacts. We have, however, inferred or offered likely or plausible explanations for statistical results. Table 12 summarizes the test results from all of the analyses conducted. Appendix Tables II-A through II-F provide the necessary monthly mean densities, standard deviations, and positive station sample sizes necessary for 95% confidence intervals and coefficients of variation.

SAMPLING PROGRAM RECOMMENDATIONS

Environmental monitoring is intended to provide data for the detection of impact (should it occur) and to provide a baseline for restoration in the event of an impact. If one should occur, an impact may be associated with clearly defined temporal and spatial events, such as construction and post-construction stages. In this case, the clearly defined periods can be tested as "before" and "after" categories which facilitates statistical testing. Impacts may also be associated with less clearly defined temporal and spatial events such as relatively small, chronic oil spills. The gradual changes occasioned by this type of event are much more difficult to detect and require long, continuous periods of sampling to develop trend analyses. In the case of the LOOP project, the most important reason for monitoring is to provide a continuous baseline of the status of the environment as a precaution against a future catastrophic event. A continuous baseline of data preceding a catastrophic event is a necessary condition to determine impact and the measures necessary for mitigation and restoration. For example, continued environmental monitoring is necessary because it has been predicted that: an average of between 3,740 and 5,400 barrels/yr would be spilled; that within a 24 year period there would be a single spill of at least 10,000 barrels of oil; and that a maximum credible spill of 240,000 barrels will occur once over a period greater than 50 years (DOT, USCG, 1976). While the LOOP record of accidental oil spills is below these prediction levels, the oil risk estimates point to the need for credible pre-spill baseline data. Furthermore, a number of our significant or marginally significant test results are explained by strong seasonality and abundance changes through time (Before-After or During-After interactions or Control-Impact-Year and Control-Impact-Year-Season interactions). The presence of such abundances trends only reinforce the dynamic nature of this unique and productive deltaic system and the need to continue to monitor and track how the ecosystem is changing/evolving through time. For example, if there is a decreasing abundance trend in species A and B, and in the year 2005 a post-oil-spill impact analysis is forced to use the 1978-1995 data set in a Before-After, Control-Impact design, that decreasing abundance trend, if it continued through time, could be erroneously attributed to subsequent LOOP-related activities.

In addition, the extent and importance (historically, culturally, and economically) of our renewable fisheries resources to Louisiana and the nation should not be underestimated, or taken for granted, if they are to be sustained. The coastal marshes of Louisiana are one of the most productive ecosystems in the world, supporting a wide variety of estuarine-dependent organisms. Louisiana leads fishery production within the northern Gulf of Mexico and is second only to Alaska among all states (NMFS 1997). Louisiana is the leader in the United States for the production of shrimp, blue crab, oyster, crawfish, tuna, red snapper, wild catfish, black drum, sea trout, and mullet (McKenzie et al. 1995). Ninety-five percent of the Louisiana fish and shellfish landings are estuarine-dependent species (McKenzie et al. 1995). The fish community of Barataria estuary is the most diverse of any estuary in Louisiana with 191 species from 68 families (Condrey et al. 1995).

Bearing in mind the responsibility above and the experience the last 18 years has brought, we make the following sampling program recommendations.

- **We recommend reducing the number of sampling gears from 4 to 3, the number of sampling protocols from 6 to 3, and the total number of sampling stations from 98 (throughout history of study or from 19 - 21 in recent years) to a total of 14.**

The following monthly sampling stations should be maintained: pipeline and Clovelly Storage Dome impact stations 7, 15, and 38 and control 12, 13, and 14 - all HL sampling stations; Brine Diffuser impact station 36 and control 21 and 22 - all OM sampling stations, and LOOP Offshore Terminal impact stations 55 (OM) and 708 (BH) with controls 52 (OM) and 704 and 706 (BH). These stations have the strongest continuous data sets and are therefore in the best position to accomplish EMP Objectives 1 through 4. If the Brine Diffuser pumping schedule is expected to remain at current low levels, then Brine Diffuser sampling could possibly be discontinued, which would further lower the total number of stations sampled to 11.

- **All station sampling should be replicated a minimum of 3-5 times.**

So as to better estimate the within station variability and thereby increase the power and resolution of statistical analyses, which is in furtherance of EMP Objectives 2 and 3.

- **Monthly samples should be collected each year (with extreme care taken toward ensuring long-term preservation) but routinely worked up (taxonomically) every other year.**

Thus, complete sample sorting and identification of all larval fish and the commercially important decapods (i.e., *Penaeus* spp., *Callinectes* spp., and *Portunus* spp.) and zooplankton biomass estimation (from displacement volume methodology) would be available for an alternating year, time series (trend connection) going back to the present 18 year data set. At the same time the availability of archived samples would insure that at any given point in time, if there were to be a major oil spill or another catastrophic event, the subsequent BACI statistical analysis would have at least a two-year Before period of available samples. The BACI statistical design would also greatly benefit from the increased power that the station sample replication would bring to bear. This recommendation is in furtherance of all EMP Objectives.

- **Supporting environmental data are needed to supplement/complement the zooplankton and ichthyoplankton sampling program.**

Monthly water column profiles at each station for temperature, salinity, conductivity, turbidity, and dissolved oxygen and surface estimates for chlorophyll are needed. In addition, brine and oil spill data for inshore (Clovelly Storage Dome) and LOOP Brine Diffuser and Offshore Terminal sites are needed for future analyses as covariates. This recommendation is in furtherance of EMP Objectives 1 through 4.

- **Moored current meter arrays around the Offshore Terminal are needed to guide adaptive zooplankton and ichthyoplankton sampling responses to predicted major offshore oil spills.**

This recommendation is in furtherance of EMP Objective 3.

- Resource managers need to formulate a specific oil spill response plan for the Offshore Terminal that would include sampling at the long-term monitoring stations in that area at an increased frequency and with additional replication (EMP Objective 2).

- Any new construction or planned discharge scenario should have an adequate Before sampling data collection period (2-3 years of pre-Impact data collection) in furtherance of EMP Objectives 1 through 4.