OCEAN ECOLOGY DATA REPORT: SUBARCTIC PACIFIC OCEAN, MAY 1984 (Project SUPER)

by

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Canadian Data Report Of Hydrography and Ocean Sciences

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Generally, the reports will contain raw and/or analyzed data but will not contain interpretations of the data. Such compilations will commonly have been prepared in support of work related to the programs and interests of the Ocean Science and Surveys (OSS) sector of the Department of Fisheries and Oceans.

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Les établissements des Sciences et Levés océaniques dans les régions et à l'administration centrale ont cessé de publier leurs diverses séries de rapports depuis décembre 1981. Vous trouverez dans l'index des publications du volume 38 du *Journal canadien des sciences halieutiques et aquatiques*, la liste de ces publications ainsi que le dernier numéro paru dans chaque catégorie. La nouvelle série a commencé avec la publication du Rapport n° 1 en janvier 1982.

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ABSTRACT

Forbes, J.R., K.L. Denman, D.L. Mackas and R.M. Brown. 1988. Ocean Ecology data report: subarctic Pacific Ocean, May 1984 (Project SUPER). Can. Data Rep. Hydrogr. Ocean Sci. 64: 147 p.

The results of a sampling program during May 1984 in the vicinity of Ocean Station P in the subarctic Pacific are presented. Data reported include physical, chemical and biological observations from bottle samples collected with an integrated vertical profiler, and zooplankton counts from samples collected by a Bioness multiple net system. These data were collected as part of the Canadian contribution to the Subarctic Pacific Ecosystem Research project.

Key words: data, oceanographic, Pacific Ocean

RÉSUMÉ

Forbes, J.R., K.L. Denman, D.L. Mackas and R.M. Brown. 1988. Ocean Ecology data report: subarctic Pacific Ocean, May 1984 (Project SUPER). Can. Data Rep. Hydrogr. Ocean Sci. 64: 147 p.

Les résultats d'une étude en Mai 1984 au large de la Station P dans l'Océan Pacifique subarctique sont présentés. Y comprises sont les données physiques, chimiques et biologiques de l'analyse des échantillons d'eau recueillis durant les profiles verticeaux, et les comptes de zooplankton recueillis avec un système Bioness avec des filets multiples. Ces données forment une partie du contribution Canadien au projet de recherche sur l'écosystème du Pacifique subarctique.

Mots-cles: données, océanographique, l'Océan Pacifique

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INTRODUCTION

The Ocean Ecology group at the Institute of Ocean Sciences carried out a research cruise (OE 84-02) to Ocean Station P (50oN, 145oW) from 7 May to 25 May 1984. This cruise was a cooperative operation with the U.S. ship RV Wecoma as part of the Subarctic Pacific Ecosystem Research project (SUPER). The major objectives of the cruise were twofold. The first was to test hypotheses related to the control of phytoplankton production and biomass in the subarctic Pacific. The second was to investigate variability of biological, physical and chemical parameters over moderate length scales of the order of 50km. On the return leg from Station P to the Strait of Juan de Fuca, CTD casts were performed, as part of the continuing set of time series observations along Line P. Physical, chemical and biological data were collected with an integrated oceanographic vertical profiler (OVP) consisting of several electronic sensors, a data acquisition system (DAS), and a remotely triggerable array of Niskin bottles (rosette sampler). In this report we present an inventory of all stations with a record of bottle samples that were collected at each station, the results of the analysis of bottle samples, and selected data from the electronic sensors. Species counts from phytoplankton samples collected by bottle and zooplankton counts collected by Bioness multiple net system are also included.

Additional data were collected on this cruise, but are not presented here. Denman and Gargett (1988) analyzed data from a drogued drifting buoy with a thermister chain and anemometer deployed near Station P from 12 May to 20 May 1984, a continuous record of above surface instantaneous photosynthetically active irradiance (PAR), and vertical microstructure profiles acquired with a free-fall profiler (FLY). Data from continuous underway mapping of temperature, conductivity, phytoplankton fluorescence, and zooplankton-sized particles on grid surveys in the vicinity of Station P and along Line P are available from the Ocean Ecology section at the Institute of Ocean Sciences.

SAMPLING AND ANALYTICAL METHODS

1. Electronic sensors

Sensors mounted on the OVP for this cruise were a Guildline Model 8701 digital CTD, a Variosens III *in situ* fluorometer configured to measure chlorophyll fluorescence, a Sea Tech 25 cm path length transmissometer measuring beam attenuance, and a Licor 193SB spherical quantum irradiance sensor measuring *in situ* PAR. Outputs from these sensors were multiplexed, digitized and communicated in serial mode to the surface via a 7-conductor armored cable. At the surface, data from the DAS were received by a Hewlett Packard 9826 computer, which provided real-time display of temperature, salinity and chlorophyll fluorescence with depth. Data were stored on a hard disk, and simultaneously backed up on magnetic tape and in printed copy. During a typical cast of the OVP, the package was lowered at a speed of 0.5 to 1 m s^{-1} depending on sea conditions. At this time the electronic sensors were being sampled and logged at a frequency of 8 Hz. Decisions on the depths to collect water samples were based on the data acquired on the down-cast. The OVP was raised at a speed of approximately 0.5 m s^{-1} and bottles were tripped while in transit. Data from all sensors were sampled and recorded at the time that each bottle closed.

2. Bottle data

a) Temperature

Duplicate temperatures from protected reversing thermometers were taken periodically as a check on the CTD temperatures. An offset correction was later applied to the CTD temperatures.

b) Salinity

Salinity samples were collected periodically as a check on the CTD conductivity measurement. These samples were analysed on our return from the cruise on an Autosal Model 8400 induction salinometer. An offset correction was later applied to the CTD salinities. All salinities are reported as dimensionless quantities.

c) Chlorophyll

The chlorophyll a content of phytoplankton samples was determined at sea using the fluorometric technique cutlined in Strickland and Parsons (1972). Samples were filtered onto glass fibre filters. Whatman 934AH filters were used for some samples, while Whatman GF/F filters were used for others. 934AH filters have a nominal particle retention size of 1.5 µm. These allowed a significant proportion of smaller cells containing chlorophyll to pass through. The majority of cells, although probably not all (Venrick et al. 1987), were retained on the GF/F filters, which have a nominal retention size of 0.7 µm. A predictive relationship for GF/F-retained chlorophyll concentration from 934AH-retained concentration was obtained by a linear regression of 13 sample pairs analysed using both filter types:

$$Chl_{gf/f} = 1.3037\ (Chl_{934ah}) - 0.0031$$

$$n = 13$$
$$r = 0.979$$

This relationship was used to provide estimates of total chlorophyll a when normalizing photosynthetic parameters, as chlorophyll concentrations for samples that were used for ^{14}C uptake measurement were determined using 934AH filters.

d) Inorganic nutrients

Reactive nitrate-nitrite, phosphate and silicate concentrations were measured following the cruise by colorimetry on a Technicon II Auto-Analyzer. Water samples were quick-frozen immediately after collection and were kept frozen until analysis.

e) Primary productivity

Photosynthetic parameters were estimated from photosynthesis versus irradiance [P(I)] experiments. Water was drawn directly from rosette bottles into dark containers. Subsamples of 60 ml (21 light bottles, 2 dark bottles) were taken in the ship's laboratory. These were inoculated with 0.291 MBq $NaH^{14}CO_3$ and incubated for 2 hours. The subsamples were filtered onto 0.45 µm Millipore HA filters, which were fumed over concentrated HCl for approximately 30 minutes, and placed in scintillation vials to which 15 ml Aquasol (New England Nuclear) was added. Sample activities were determined later using an LKB 1217 scintillation counter, with counting efficiencies determined by the sample channels ratio method.

P(I) data were fitted to the model of Platt et al. (1980) by a non-linear least squares fit using the Marquardt algorithm (Bevington, 1969). The model is of the form:

$$PB = P^{B}_{s} * (1-e^{-\alpha I/Ps})(e^{-\beta I/Ps})$$

where: PB = normalized productivity (mg C (mg Chl a)-1 h-1)

P^{B}_{s} = maximum potential light saturated photosynthetic rate of the population (mg C (mg Chl a)-1 h-1)

α = initial slope (mg C (mg Chl a)-1 h-1 (μEin s-1 m-2)-1)

β = parameter characterizing photoinhibition (mg C (mg Chl a)-1 h-1 (μEin s-1 m-2)-1)

Four derived parameters were calculated from these for each experiment:

$$P^{B}_{m} = P^{B}_{s} (\alpha/(\alpha+\beta)(\beta/(\alpha+\beta))^{(\beta/\alpha)}$$

$$I_m = P^{B}_{s} / \alpha \log_e((\alpha+\beta)/(\beta))$$

$$I_k = P^{B}_{m} / \alpha$$

$$I_b = P^{B}_{s} / \beta$$

P^{B}_{m} is the maximum realized photosynthetic rate. I_m and I_k have utility as indices of photoadaptation, and I_b is an index of photoinhibition, representing the irradiance at which PB = 0.37 P^{B}_{s} in the portion of the curve where $I > I_m$. All photosynthetic parameters have been normalized to chlorophyll concentration. The units of PB, P^{B}_{s} and P^{B}_{m} are mg C (mg Chl a)-1 h-1; the units of α and β are mg C (mg Chl a)-1 h-1 (μEin s-1 m-2); the units of I, I_m, I_k and I_b are μEin s-1 m-2.

For each experiment, the variance of the data about the fitted curve was determined (Forbes et al., 1987), from which the correlation coefficient, r, was calculated.

3. Phytoplankton and zooplankton abundance

a) Phytoplankton

Paired samples were drawn from rosette bottles, with one sample preserved in alkaline Lugol's solution and the other in acid Lugol's solution (Throndsen, 1978). Cells were settled in counting chambers and counted on an inverted microscope. The names of the taxa are abbreviated in some cases and a complete taxonomic list precedes the data records as a guide to taxonomic order and abbreviations. This list includes all taxa recorded by Ocean Ecology surveys in British Columbia coastal waters and the northeast Pacific from 1978 to 1986. It may therefore be considered a reasonably complete checklist of phytoplankton occurring in these waters that can be identified by the technique used here. Samples in the data records are designated by station, rosette bottle number and preservation method. For example, 6-9N represents the sample collected at station 6, bottle 9, which was preserved with alkaline Lugol's solution. 6-9A is the sample from the same bottle preserved with acid Lugol's. If the preservation solution is not recorded, the results reported are combined data, with coccolithophorids enumerated from the alkaline sample and remaining taxa enumerated from the acid sample. Two samples were submitted blind to the analyst from each of station 21-7 and from 21-9. She was requested to count duplicate subsamples from each of these. This resulted in four sets of counts from each rosette bottle. The duplicate pairs from 21-7 are designated as 21-7W and 21-7X, and 21-7Y and 21-7Z respectively. The same numbering system was used for samples and subsamples from 21-9. The counts from all of these include material preserved in both alkaline and acid Lugol's solution. The analyst for all phytoplankton identification and enumeration was Rosemary Waters.

b) Zooplankton

Zooplankton sampling was performed with a Bioness multiple opening and closing net system. As for the phytoplankton data, abbreviations of taxa are used in the data records. A complete taxonomic list, with the abbreviations used, precedes the data records. A full tow consisted of an oblique haul with up to 8 samples acquired from specific depth strata. These samples are designated by station number and net number. For example J-2 represents the sample from net 2 at station J. A table following the the data records provides details of the sample depths for each zooplankton sample. Samples were preserved with buffered formaldehyde. All samples were analyzed by Hugh Sefton.

ESTIMATED ACCURACY AND PRECISION OF DATA

1. CTD and other electronic sensors

The fundamental limit to resolution is given by the 12 bit accuracy (equivalent to 0.025% of full scale) of the analog to digital converter used. Manufacturers give the accuracy and resolution of the sensors as follows:

Variable	Accuracy(±)	Resolution
Pressure	1.25 dbar	0.25 dbar
Temperature	0.01 C	0.003 C
Equivalent salinity	0.01	0.005
% transmission	0.5 %	0.5 %
In situ PAR	7.00 %	0.50 %

2. Chlorophyll

Parsons et al. (1984) estimated that the precision (± 2) of the fluorometric method for replicate measurements at the 0.5 mg m-3 level should be better than 10 %. An estimate of the precision of the method as practised here was made on a previous cruise. The mean of 15 replicate samples (3 from each of 5 rosette bottles tripped at the same depth) was 3.01 ± 0.30 mg Chl *a* m-3 (± 9.8 %). The coefficient of variation was 4.9 %. Analysis of variance indicated no significant difference between samples drawn from one or more bottles tripped at the same depth (F_t = 0.307, F_r = 0.712).

3. Inorganic nutrients

Replicate analyses have been performed for 245 samples selected from four cruises by the Ocean Ecology section. Details are provided in detail in Denman et al. (1985). In summary, the expected percentage error for nitrate plus nitrite was 14.3 %, for phosphate was 9.4 %, and for silicate was 11.5 %.

4. Primary productivity

The mean coefficient of variation for 23 pairs of replicate light bottles incubated under identical irradiance was determined on a previous cruise to be 4.1 %, with a range from 0.02 % to 26.0 %.

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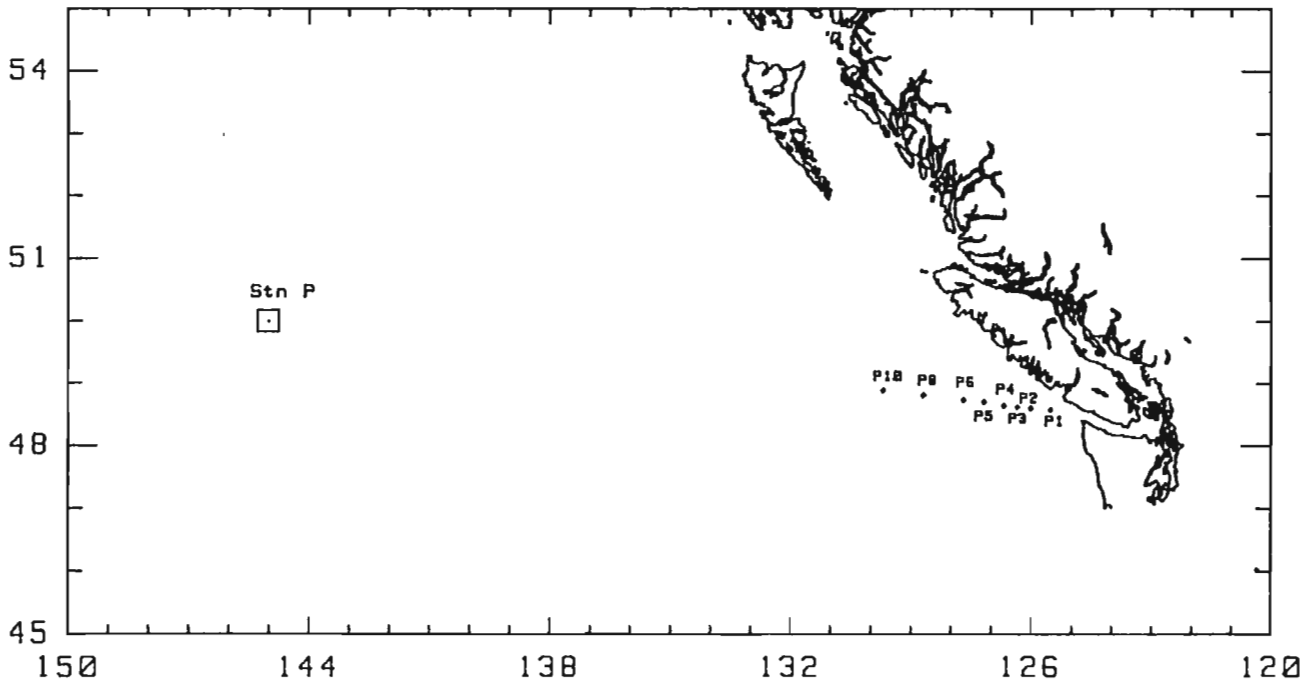
DATA SECTION 1

Plots of a. Location of Station P and line P stations occupied
b. Cruise track in the vicinity of Station P.
c. Location of CTD/rosette casts in the vicinity of Station P

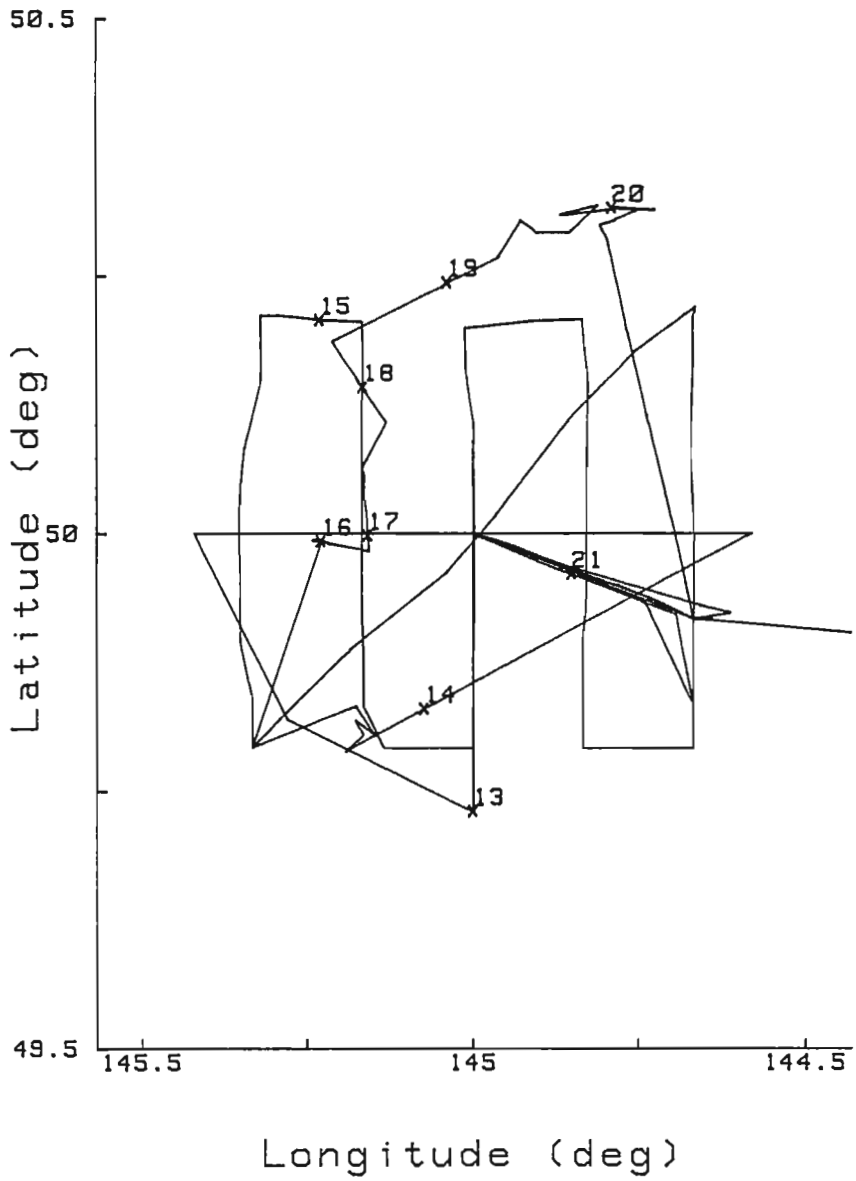
Location of Station P and Line P stations occupied.

84-02: Station P and Line P stations



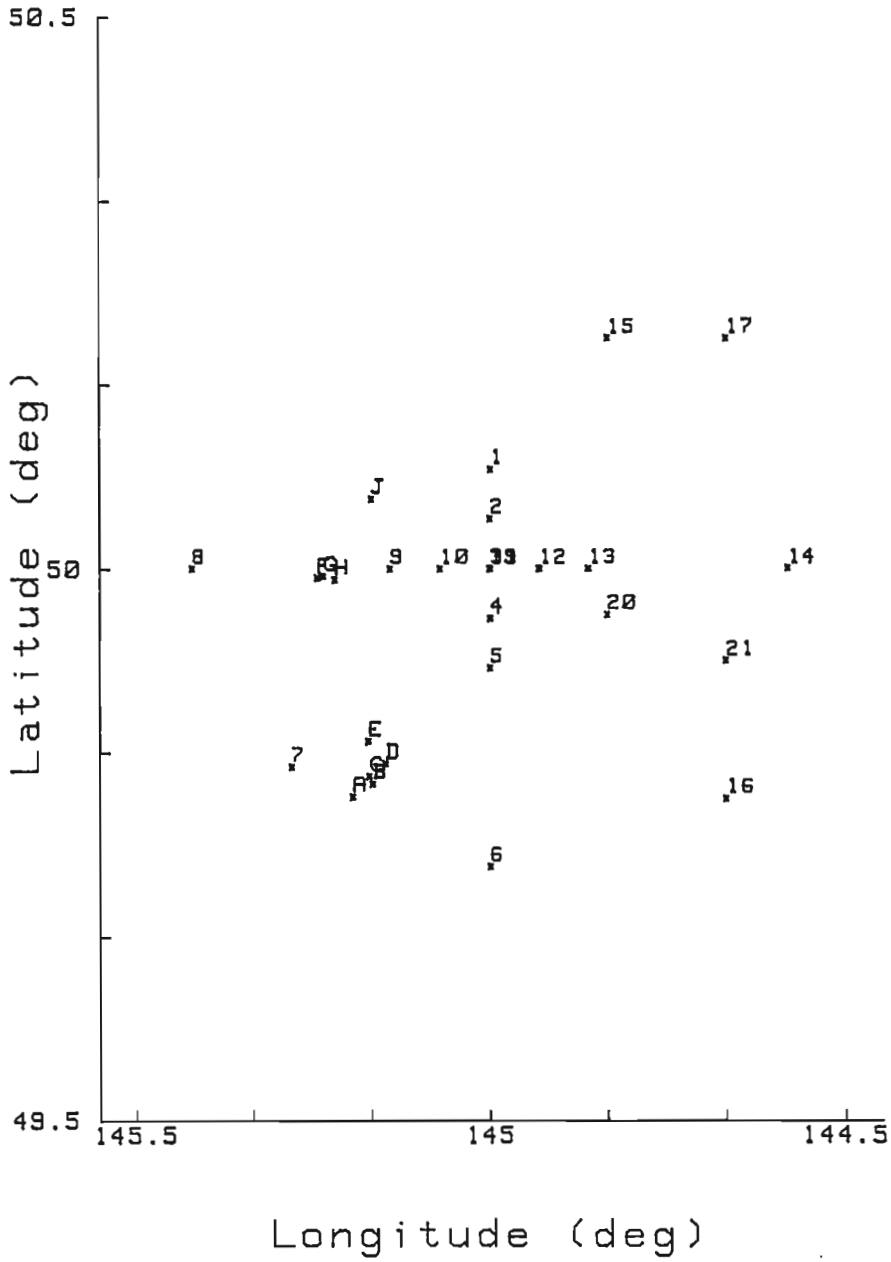
Cruise track in the vicinity of Station P.
Positions are indicated for each day (May 1984) at 1200 PDT.

Cruise Track 84-02



Location of CTD/rosette casts in the vicinity of Station P.

CTD Positions 84-02



DATA SECTION 2

Data inventory

Cruise 84-02

DATA TYPES AVAILABLE
'+' : available, '-' : not available

Stn. No.	Date Da	Mo	Time (PDT)	Latitude	Longitude	CTD	Vario. CHL a	Beam Atten-uance	In Situ Light	Nutri-ents	CHL a	Cl4	Phyto-plank-ton	Zoo-plank-ton
1	12	05	0921	50 05.4'	145 00.0'	+	+	+	+	+	+	+	+	+
2	12	05	1219	50 02.7'	145 00.0'	+	+	+	+	-	-	-	-	-
3A	12	05	1425	50 00.0'	145 00.0'	+	+	+	+	-	+	-	-	-
3B	12	05	1452	50 00.0'	145 00.0'	+	+	+	+	+	+	+	+	+
4	12	05	1642	49 57.3'	145 00.0'	+	+	+	+	-	-	-	-	-
5	12	05	1925	49 54.6'	145 00.0'	+	+	+	+	-	+	+	+	+
6A	13	05	0051	49 43.8'	145 00.0'	+	+	+	-	-	+	-	-	+
6B	13	05	0114	49 43.8'	145 00.0'	+	+	+	-	+	+	+	+	-
7	13	05	0302	49 50.0'	145 17.6'	+	+	+	-	-	-	-	-	+
8A	13	05	0706	50 00.0'	145 25.2'	+	+	+	+	-	+	-	-	+
8B	13	05	0723	50 00.0'	145 25.2'	+	+	+	+	+	+	+	+	-
9	13	05	0955	50 00.0'	145 08.4'	+	+	+	+	-	+	-	-	+
10	13	05	1316	50 00.0'	145 04.2'	+	+	+	+	-	-	-	-	-
11	13	05	1359	50 00.0'	145 00.0'	+	+	+	+	+	+	+	+	+
12	13	05	1624	50 00.0'	144 55.8'	+	+	+	+	-	-	-	-	-
13	13	05	1702	50 00.0'	144 51.6'	+	+	+	+	-	+	-	-	+
14A	13	05	2111	50 00.0'	144 34.8'	+	+	+	+	-	+	-	-	+
14B	13	05	2129	50 00.0'	144 34.8'	+	+	+	+	+	+	+	-	-
A	14	05	0127	49 47.6'	145 11.6'	+	+	+	-	+	+	+	+	-
B	14	05	0439	49 48.3'	145 09.9'	+	+	+	-	-	+	+	-	-
C	14	05	0728	49 48.7'	145 10.2'	+	+	+	+	-	+	+	-	-
D	14	05	1027	49 49.4'	145 08.8'	+	+	+	+	-	+	+	-	-
E	14	05	1322	49 50.6'	145 10.3'	+	+	+	+	+	+	+	+	-
15	15	05	1128	50 12.5'	145 50.0'	+	+	+	+	-	+	-	-	-
16	15	05	1537	49 47.5'	144 40.0'	+	+	+	+	-	+	-	-	-
17	15	05	1842	50 12.5'	144 40.0'	+	+	+	+	-	+	-	-	-
F	16	05	0159	49 59.5'	145 14.6'	+	+	+	-	+	+	+	+	-
G	16	05	0324	49 59.6'	145 14.1'	+	+	+	-	-	+	-	-	+
H	16	05	0603	49 59.4'	145 13.1'	+	+	+	-	-	+	+	-	-
I	16	05	2118	49 58.9'	145 09.3'	-	-	-	-	-	+	-	-	-

J	17 05 1000	50 03.8'	145 10.0'	+	+	+	+	−	+	−	−	+
K	19 05 0530	50 16.1'	144 57.6'	−	−	−	−	−	+	+	+	+
L	19 05 0951	50 18.2'	144 55.6'	−	−	−	−	−	+	+	−	−
M	19 05 1147	50 17.5'	144 54.2'	−	−	−	−	−	+	+	−	−
N	19 05 1500	50 17.5'	144 51.2'	−	−	−	−	−	+	+	−	−
O	19 05 1745	50 19.1'	144 48.6'	−	−	−	−	−	+	+	−	−
P	19 05 2045	50 18.5'	144 52.0'	−	−	−	−	−	+	+	−	−
Q	19 05 2348	50 18.9'	144 47.3'	−	−	−	−	−	+	−	−	−
R	20 05 0405	50 18.8'	144 43.4'	−	−	−	−	−	+	+	+	−
S	20 05 0630	50 19.0'	144 47.0'	−	−	−	−	+	+	+	−	−
T	20 05 1000	50 18.1'	144 45.0'	−	−	−	−	−	+	+	−	−
U	20 05 1312	50 18.2'	144 47.1'	−	−	−	−	−	+	+	−	−
18	20 05 2145	49 55.1'	144 38.3'	−	−	−	−	−	−	−	−	+
19	21 05 0509	50 00.0'	145 00.0'	+	+	+	−	−	+	−	−	−
20	21 05 0805	49 57.5'	144 50.0'	+	+	+	+	+	+	−	−	−
21A	21 05 1029	49 55.0'	144 40.0'	+	+	+	+	+	+	+	+	−
21B	21 05 1106	49 55.0'	144 40.0	+	+	+	+	−	−	−	−	−
P10	23 05 1947	48 53.6'	129 40.0'	+	−	+	−	−	−	−	−	−
P8	24 05 0006	48 49.0'	128 40.0'	+	−	+	−	−	−	−	−	+
P6	24 05 0456	48 44.6'	127 40.0'	+	−	+	−	−	−	−	−	−
P5	24 05 0822	48 42.6'	127 10.0'	+	−	+	−	−	−	−	+	+
P4	24 05 1126	48 39.0'	126 40.0'	+	−	+	−	−	−	−	+	−
P3	24 05 1338	48 37.5'	126 20.0'	+	−	+	−	−	−	−	−	−
P2	24 05 1601	48 36.0'	126 00.0'	+	+	+	+	−	+	−	−	+
P1	24 05 1754	48 34.5'	125 30.0'	+	+	+	+	−	+	−	−	−

DATA SECTION 3

CTD and analytical data

DATABASE LISTING FOR CRUISE 84-02. PAGE 1

* - Indicates that data is from an electronic sensor.

STN NO.	BOT NO.	DEPTH (dbar)	*TEMP (deg C)	*SAL	CHL (mg/m3) (934)	(GF/F)	Pm	NO3	PO4	SiO4
								(mmol / m3)		
1	01	216.3	4.39	33.88				35.1	2.86	49.5
1	02	125.4	4.96	33.81				19.8	2.46	31.6
1	03	76.4	6.16	32.62		.34		12.8	1.39	19.4
1	04	41.2	6.59	32.58	.29		1.71	11.7	1.33	17.9
1	05	41.4	6.59	32.59						
1	06	24.1	6.77	32.55		.47		11.9	1.30	18.4
1	07	12.3	6.92	32.58		.45		11.9	1.30	18.2
1	08	7.4	6.92	32.58	.27		3.53			
1	09	7.2	6.92	32.58				12.2	1.29	19.2
1	10	2.0	6.92	32.58		.54		12.2	1.36	18.6
2	01	193.8	4.60	33.85						
3A	01	72.9	6.52	32.59		.36				
3A	02	71.9	6.53	32.58						
3A	03	23.5	7.02	32.58		.31				
3A	04	24.2	7.03	32.57						
3A	05	13.0	7.04	32.57		.32				
3A	06	12.8	7.04	32.57						
3A	07	8.6	7.04	32.57		.32				
3A	08	8.8	7.05	32.57						
3A	09	2.1	7.06	32.57		.22				
3A	10	1.9	7.06	32.57						
3B	01	209.0	4.54	33.86				34.7	2.63	48.3
3B	02	144.8	4.75	33.79				31.7	2.48	54.9
3B	03	122.8	4.81	33.72				29.4	2.24	48.7
3B	04	98.8	4.88	33.57				27.4	2.18	42.5
3B	05	71.4	6.61	32.59				12.2	1.31	18.1
3B	06	41.4	6.74	32.57	.25	.31	1.68	11.7	1.27	17.5
3B	07	41.6	6.74	32.57						
3B	08	42.3	6.74	32.57						
3B	09	9.0	7.07	32.57	.23		2.65	11.6	1.27	17.5
3B	10	9.0	7.07	32.57						
5	01	205.8	4.43	33.86						
5	02	64.9	6.68	32.59		.43				
5	03	41.4	6.76	32.57	.39	.48	2.14			
5	04	41.5	6.78	32.57						
5	05	42.1	6.76	32.57						
5	06	20.0	7.06	32.57		.41				
5	07	10.5	7.06	32.57		.42				
5	08	8.0	7.06	32.57	.42					
5	09	8.3	7.06	32.57						
5	10	2.6	7.06	32.57		.43				
6A	01	62.8	6.37	32.60		.54				

DATABASE LISTING FOR CRUISE 84-02. PAGE 2

* - Indicates that data is from an electronic sensor.

STN NO.	BOT NO.	DEPTH (dbar)	*TEMP (deg C)	*SAL	CHL (mg/m3) (934)	(GF/F)	Pm	NO3	PO4	SiO4
								(mmol / m3)		
6A	02	62.8	6.37	32.59						
6A	03	22.1	6.95	32.56		.52				
6A	04	21.2	6.94	32.57						
6A	05	11.0	6.98	32.56		.49				
6A	06	11.4	6.98	32.56						
6A	07	7.1	6.97	32.56		.50				
6A	08	5.8	6.97	32.56						
6A	09	1.2	6.98	32.55						
6A	10	1.7	6.97	32.46						
6B	01	206.9	4.31	33.86				35.5	2.61	49.1
6B	02	150.2	4.60	33.82				34.0	2.63	60.8
6B	03	127.7	4.79	33.78				29.8	2.38	51.4
6B	04	102.8	4.73	33.66				29.5	2.31	48.0
6B	05	75.4	5.88	32.66				13.6	1.44	21.1
6B	06	40.1	6.40	32.59	.43	.58	1.33	12.8	1.35	22.2
6B	07	38.8	6.41	32.59						
6B	08	38.1	6.41	32.59						
6B	09	9.5	6.96	32.57	.49		1.23	10.8	1.22	16.7
6B	10	10.0	6.96	32.56						
8A	01	74.6	6.00	32.64		.29				
8A	02	75.9	5.98	32.65						
8A	03	23.9	6.81	32.57		.64				
8A	04	25.6	6.81	32.58						
8A	05	13.5	6.81	32.57		.63				
8A	06	13.6	6.81	32.57						
8A	07	9.4	6.81	32.57						
8A	08	8.2	6.81	32.58						
8A	09	2.0	6.81	32.57		.56				
8A	10	2.0	6.81	32.57						
8B	01	205.6	4.06	33.84				37.8	2.93	48.2
8B	02	148.7	4.17	33.75				34.4	2.61	45.0
8B	03	118.9	4.28	33.68				31.5	2.42	43.8
8B	04	99.0	4.44	33.59				29.2	2.30	41.4
8B	05	78.0	5.92	32.69				14.4	1.45	21.8
8B	06	41.9	6.26	32.58	.53	.68	1.70	13.0	1.37	20.3
8B	07	39.9	6.28	32.57						
8B	08	41.1	6.26	32.57						
8B	09	9.1	6.78	32.58	.54			12.1	1.31	19.0
8B	10	9.8	6.78	32.58						
9	01	198.8	4.32	33.85						
9	02	67.7	6.32	32.60		.37				
9	03	39.7	6.51	32.58		.58				

DATABASE LISTING FOR CRUISE 94-02. PAGE 3

* - Indicates that data is from an electronic sensor.

STN NO.	BOT NO.	DEPTH (dbar)	*TEMP (deg C)	*SAL	CHL (mg/m3) (934)	(GF/F)	Pm	NO3	PO4	SiO4
								(mmol / m3)		
9	04	21.7	6.94	32.58		.52				
9	05	14.0	6.94	32.57		.48				
9	06	8.5	6.94	32.57						
9	07	2.1	6.95	32.57		.44				
11	01	201.0	4.48	33.85				36.3	2.73	61.0
11	02	148.3	4.67	33.80				32.8	2.49	53.1
11	03	121.6	4.84	33.73				29.2	2.36	47.6
11	04	99.4	4.89	33.58				27.7	2.05	42.5
11	05	73.3	6.62	32.59				11.5	1.32	17.0
11	06	40.9	6.94	32.57	.37		2.22	11.5	1.25	17.4
11	07	41.4	6.92	32.57						
11	08	24.6	6.99	32.57				11.5	1.29	18.3
11	09	8.1	7.03	32.56	.38		1.96	11.6	1.20	17.4
11	10	8.6	7.03	32.57						
13	01	203.6	4.56	33.84						
13	02	68.8	6.70	32.58		.33				
13	03	40.4	6.90	32.58	.45	.60				
13	04	24.2	7.01	32.57		.39				
13	05	12.1	7.07	32.56						
13	06	7.4	7.12	32.56	.47	.59				
13	07	2.0	7.15	32.57		.62				
14A	01	72.7	6.62	32.59		.27				
14A	02	72.3	6.64	32.59						
14A	03	24.0	7.03	32.56		.54				
14A	04	23.7	7.04	32.56						
14A	05	13.3	7.10	32.57		.50				
14A	06	12.7	7.10	32.57						
14A	07	8.9	7.10	32.57		.50				
14A	08	8.6	7.10	32.56						
14A	09	1.6	7.10	32.56		.55				
14A	10	1.5	7.10	32.56						
14B	01	207.8	4.54	33.85				36.2	2.82	49.3
14B	02	148.1	4.93	33.82				32.8	2.52	45.5
14B	03	124.1	5.20	33.81				31.0	2.37	46.8
14B	04	99.0	5.46	33.71				29.5	2.18	42.5
14B	05	74.3	6.37	32.70				13.5	1.35	19.8
14B	06	41.1	6.84	32.56	.66	.57		11.7	1.27	17.9
14B	07	41.1	6.82	32.56						
14B	08	40.6	6.82	32.57						
14B	09	9.6	7.11	32.56	.43		1.16	9.9	1.28	15.3
14B	10	9.0	7.11	32.56						
A	01	204.0	4.03	33.80				36.9	2.82	64.0

DATABASE LISTING FOR CRUISE 84-02. PAGE 4

* - Indicates that data is from an electronic sensor.

STN NO.	BOT NO.	DEPTH (dbar)	*TEMP (deg C)	*SAL	CHL (mg/m3) (934)	(GF/F)	Pm	NO3	PO4	SiO4
								(mmol / m3)		
A	02	152.4	4.11	33.73				32.6	2.47	57.8
A	03	100.0	4.65	33.41				26.3	2.15	41.2
A	04	70.9	6.25	32.67		.44		12.8	1.38	19.4
A	05	42.3	6.68	32.57	.57		.76			
A	06	42.2	6.68	32.57	.61			11.8	1.30	17.9
A	07	21.9	7.00	32.60		.61		11.4	1.28	17.7
A	08	11.4	7.06	32.57	.47		1.17			
A	09	10.6	7.06	32.57	.46			11.7	1.26	18.4
B	01	202.4	4.01	33.81						
B	02	69.2	6.18	32.63		.45				
B	03	41.4	6.64	32.58	.58		.77			
B	04	41.9	6.64	32.57	.56					
B	05	22.4	6.98	32.58		.56				
B	06	9.8	7.05	32.56	.49		1.63			
B	07	9.1	7.05	32.57						
C	01	209.8	4.01	33.80						
C	02	70.8	6.00	32.71		.24				
C	03	40.9	6.67	32.57	.56		2.08			
C	04	40.7	6.68	32.57						
C	05	22.9	6.92	32.57		.52				
C	06	8.8	6.92	32.57	.56		2.06			
C	07	8.9	6.91	32.57						
C	08	8.9	6.92	32.57						
D	01	202.7	4.20	33.84						
D	02	69.2	6.00	32.66						
D	03	40.4	6.42	32.58	.65		1.20			
D	04	41.2	6.44	32.58						
D	05	41.1	6.44	32.59						
D	06	20.6	6.99	32.58		.70				
D	07	8.3	7.01	32.58	.60		1.87			
D	08	8.5	7.01	32.57						
D	09	8.9	7.01	32.58						
E	01	207.3	4.01	33.81				36.9	2.90	51.7
E	02	150.7	4.12	33.75				33.3	2.68	47.8
E	03	101.6	4.39	33.56				24.3	2.26	38.0
E	04	69.6	6.19	32.63		.47				
E	05	39.1	6.79	32.56	.64		2.47	12.0	1.33	19.0
E	06	39.1	6.78	32.59						
E	07	20.9	6.90	32.58		.77		11.4	1.26	17.5
E	08	8.0	6.90	32.57	.64		1.92			
E	09	8.0	6.90	32.58						
E	10	8.2	6.90	32.58						

DATABASE LISTING FOR CRUISE 84-02. PAGE 5

* - Indicates that data is from an electronic sensor.

STN NO.	BOT NO.	DEPTH (dbar)	*TEMP (deg C)	*SAL	CHL (934)	(mg/m3) (GF/F)	Pm	NO3	PO4	SiO4
								(mmol / m3)		
15	01	69.1	6.27	32.63		.44				
15	02	39.2	6.70	32.62		.96				
15	03	23.2	6.87	32.57		1.02				
15	04	13.9	6.87	32.57		.88				
15	05	3.5	6.90	32.55		.93				
16	01	69.7	6.63	32.58		.37				
16	02	42.7	7.01	32.58		.57				
16	03	24.3	7.10	32.55		.61				
16	04	13.9	7.11	32.54		.62				
16	05	1.8	7.14	32.53		.64				
17	01	69.6	6.38	32.59		.42				
17	02	40.1	6.54	32.59		.82				
17	03	24.9	6.81	32.57		1.12				
17	04	13.0	6.85	32.55		.92				
17	05	9.2	6.91	32.54						
17	06	2.8	6.93	32.53		.85				
F	01	203.4	4.06	33.81				35.0	2.73	52.9
F	02	152.5	4.22	33.76				32.2	2.65	57.2
F	03	124.2	4.35	33.70				30.0	2.44	51.2
F	04	101.9	4.72	33.59				21.6	2.20	33.7
F	05	70.2	6.22	32.64				13.2	1.33	19.9
F	06	41.9	6.50	32.59	.53		.66	12.6	1.33	19.4
F	07	42.5	6.51	32.58	.50					
F	08	26.2	6.84	32.57				12.0	1.30	18.4
F	09	9.9	6.94	32.54	.71		1.44	11.8	1.26	19.6
F	10	7.5	6.95	32.53	.64					
G	01	68.9	6.37	32.60		.44				
G	02	22.6	6.87	32.57		.82				
H	01	74.7	6.22	32.61		.39				
H	02	42.5	6.50	32.57	.62		.89			
H	03	40.1	6.53	32.57	.61					
H	04	24.5	6.85	32.58		1.04				
H	05	9.7	6.92	32.54	.84		1.26			
H	06	9.6	6.92	32.55	.90					
I	01	60.0				.66				
I	02	40.0				.88				
I	03	23.0				.80				
I	04	15.0				.79				
I	05	8.0			.67	.84				
I	06	1.0				.82				
J	01	40.0			.56					
J	02	8.0			.72	1.00				

DATABASE LISTING FOR CRUISE 84-02. PAGE 6

* - Indicates that data is from an electronic sensor.

STN NO.	BOT NO.	DEPTH (dbar)	*TEMP (deg C)	*SAL	CHL (934)	(mg/m3) (GF/F)	Pm	NO3	PO4	SiO4
								(mmol / m3)		
K	01	60.0				.42				
K	02	36.0			.76	1.00	.71			
K	03	20.0				.99				
K	04	14.0				.86				
K	05	7.0			.77	.96	1.06			
K	06	1.0				1.04				
L	01	60.0				.61				
L	02	36.0			.73		1.34			
L	03	20.0				1.11				
L	04	7.0			.75		1.69			
M	01	60.0				.63				
M	02	36.0			.73		1.88			
M	03	20.0				.94				
M	04	7.0			.75		1.83			
N	01	60.0				.80				
N	02	36.0			.78					
N	03	20.0				1.01				
N	04	7.0			.70		2.12			
O	01	60.0				.48				
O	02	36.0			.83		.95			
O	03	20.0				1.04				
O	04	7.0			.93		1.42			
P	01	60.0				.45				
P	02	36.0			.77		2.01			
P	03	20.0				1.03				
P	04	7.0			.80		1.95			
Q	01	60.0				.61				
Q	02	36.0			.87					
Q	03	20.0				1.08				
Q	04	7.0			.84					
R	01	60.0				.43				
R	02	36.0			1.04		.83			
R	03	20.0				1.13				
R	04	7.0			1.07		.72			
S	01	60.0				.53		12.3	1.35	19.4
S	02	36.0			.92		1.55	11.8	1.30	19.6
S	03	20.0				1.04		11.5	1.30	19.0
S	04	7.0			.93		1.21	11.9	1.32	19.4
S	05	1.0						11.9	1.31	19.6
T	01	36.0			.79		1.53			
T	02	7.0			.85		1.54			
U	01	36.0			.70		1.85			

DATABASE LISTING FOR CRUISE 84-02. PAGE 7

* - Indicates that data is from an electronic sensor.

STN NO.	BOT NO.	DEPTH (dbar)	*TEMP (deg C)	*SAL	CHL (mg/m3) (934)	(GF/F)	Pm	NO3	PO4	SiO4
								(mmol / m3)		
U	02	7.0			.70		1.63			
19	01	61.5	6.33	32.60	.37	.38				
19	02	62.5	6.32	32.60						
19	03	11.5	7.04	32.55	.37	.52				
19	04	12.2	7.04	32.55						
19	05	10.5	7.04	32.55						
19	06	11.0	7.04	32.55						
19	07	6.2	7.04	32.54	.34	.52				
19	08	6.5	7.04	32.54						
20	01	254.4	4.30	33.88				37.4	2.90	66.6
20	02	199.6	4.57	33.83				31.8	2.49	57.9
20	03	150.8	4.85	33.81				32.9	2.52	57.0
20	04	122.3	4.90	33.75				30.7	2.32	50.6
20	05	99.1	4.74	33.61				28.6	2.17	44.1
20	06	78.8	6.34	32.63		.30		13.6	1.38	20.0
20	07	59.9	7.01	32.53				10.9	1.26	16.8
20	08	37.1	7.09	32.55	.27			11.2	1.27	17.0
20	09	18.2	7.09	32.55	.22			10.8	1.27	16.8
20	10	5.3	7.08	32.54		.28		11.2	1.26	17.7
21A	01	252.8	4.25	33.90				37.9	2.93	47.9
21A	02	194.7	4.54	33.86				35.7	2.77	53.0
21A	03	146.6	4.89	33.83				32.4	2.37	46.4
21A	04	99.5	4.81	33.63				25.1	2.02	38.1
21A	05	73.3	6.34	32.59				12.6	1.38	19.0
21A	06	50.9	7.12	32.55				10.4	1.12	16.8
21A	07	35.6	7.17	32.54	.26		2.11	10.9	1.17	17.5
21A	08	35.5	7.17	32.55						
21A	09	11.9	7.17	32.55	.26			9.8	1.25	15.3
21A	10	10.6	7.17	32.55						
P8	01	508.0								
P6	01	506.4								
P5	01	507.9								
P4	01	503.9								
P3	01	469.3								
P2	01	62.2			.09					
P1	01	36.3			.58					
P1	02	14.5			1.97					

DATA SECTION 4

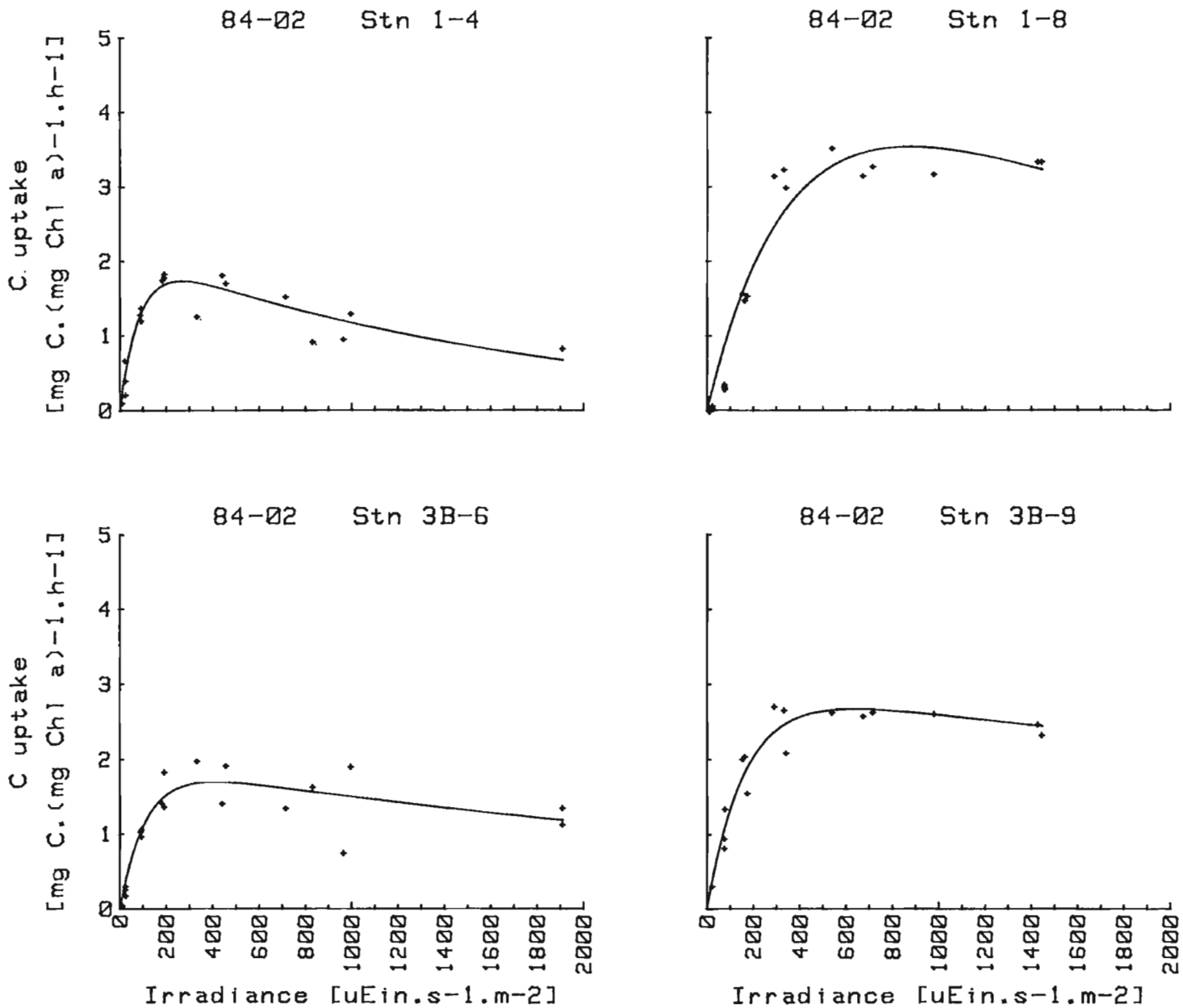
Primary productivity data

```
-----------------------------------------
Cruise:  84-02     Date:  84.05.12
Station: 1-4       Time:       0702 (LAT)
                               0942 (PDT)
                   Depth:     41.2  m
                   Chlor a:    0.4 mg.m-3

Parameter estimates:  Derived parameters:

    Ps =   2.14          Pm =    1.71
     a =   0.024         Im =  264.6
     b =   0.001         Ik =   72.6
                         Ib =   1.59E+03

     n = 19        r =  0.932   (15 d.f.)
```

```
-----------------------------------------
Cruise:  84-02     Date:  84.05.12
Station: 1-8       Time:       0702 (LAT)
                               0942 (PDT)
                   Depth:      7.4  m
                   Chlor a:    0.3 mg.m-3

Parameter estimates:  Derived parameters:

    Ps =   5.39          Pm =    3.53
     a =   0.013         Im =  869.8
     b =   0.002         Ik =  271.1
                        Ib =   2.97E+03

     n = 20        r =  0.967   (16 d.f.)
```

```
-----------------------------------------
Cruise:  84-02     Date:  84.05.12
Station: 3B-6      Time:       1220 (LAT)
                               1510 (PDT)
                   Depth:     41.4  m
                   Chlor a:    0.3 mg.m-3

Parameter estimates:  Derived parameters:

    Ps =   1.94          Pm =    1.68
     a =   0.017         Im =  401.5
     b =   0.001         Ik =  100.2
                         Ib =   3.62E+03

     n = 20        r =  0.904   (16 d.f.)
```

```
-----------------------------------------
Cruise:  84-02     Date:  84.05.12
Station: 3B-9      Time:       1220 (LAT)
                               1510 (PDT)
                   Depth:      9.0  m
                   Chlor a:    0.3 mg.m-3

Parameter estimates:  Derived parameters:

    Ps =   2.97          Pm =    2.65
     a =   0.018         Im =  605.1
     b =   0.000         Ik =  144.3
                        Ib =   6.64E+03

     n = 16        r =  0.953   (12 d.f.)
```


84-02 Stn 1-4
84-02 Stn 1-8
84-02 Stn 3B-6
84-02 Stn 3B-9
C uptake
[mg C.(mg Chl a)-1.h-1]
0
1
2
3
4
5
0
200
400
600
800
1000
1200
1400
1600
1800
2000
Irradiance [uEin.s-1.m-2]

Cruise: 84-02 Date: 84.05.12
Station: 5-3 Time: 1719 (LAT)
1959 (PDT)
Depth: 40.9 m
Chlor a: 0.5 mg.m-3

Parameter estimates:		Derived parameters:	
Ps =	2.39	Pm =	2.1
a =	0.016	Im =	573.9
b =	0.000	Ik =	134.9
		Ib =	6.70E+03

n = 19 r = 0.961 (15 d.f.)

Cruise: 84-02 Date: 84.05.13
Station: 6B-6 Time: 2252 (LAT)
0132 (PDT)
Depth: 40.1 m
Chlor a: 0.6 mg.m-3

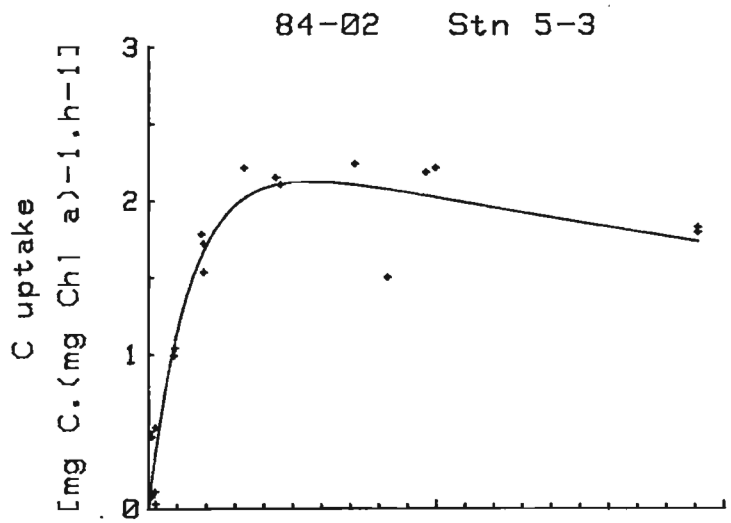
Parameter estimates:		Derived parameters:	
Ps =	1.70	Pm =	1.33
a =	0.013	Im =	380.6
b =	0.001	Ik =	106.3
		Ib =	2.12E+03

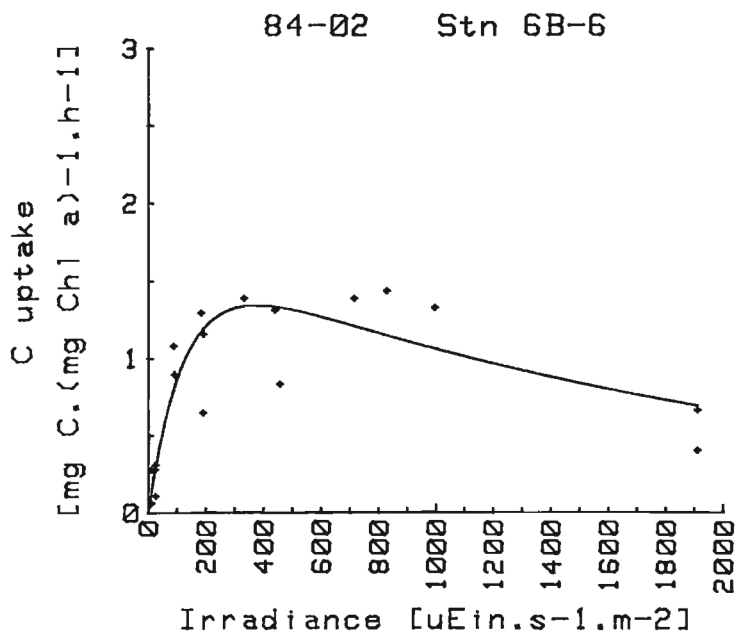
n = 20 r = 0.874 (16 d.f.)

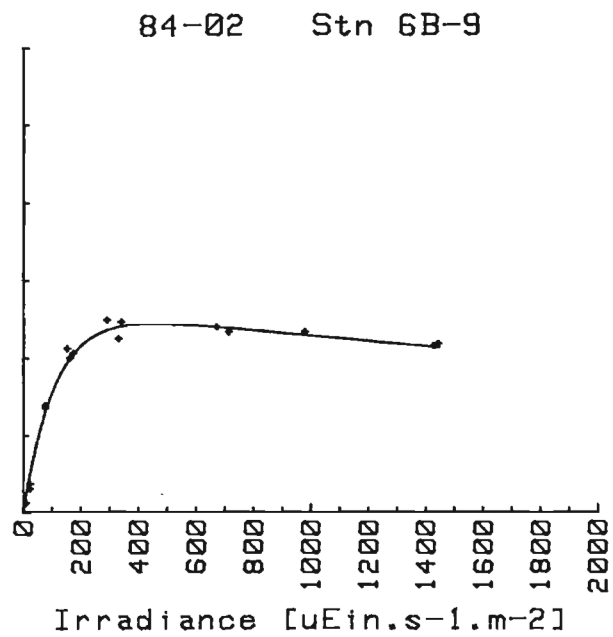
Cruise: 84-02 Date: 84.05.13
Station: 6B-9 Time: 2252 (LAT)
0132 (PDT)
Depth: 9.5 m
Chlor a: 0.6 mg.m-3

Parameter estimates:		Derived parameters:	
Ps =	1.33	Pm =	1.23
a =	0.012	Im =	449.2
b =	0.000	Ik =	99.2
		Ib =	6.90E+03

n = 18 r = 0.992 (14 d.f.)


84-02 Stn 5-3
C uptake
[mg C.(mg Chl a)-1.h-1]
0
1
2
3

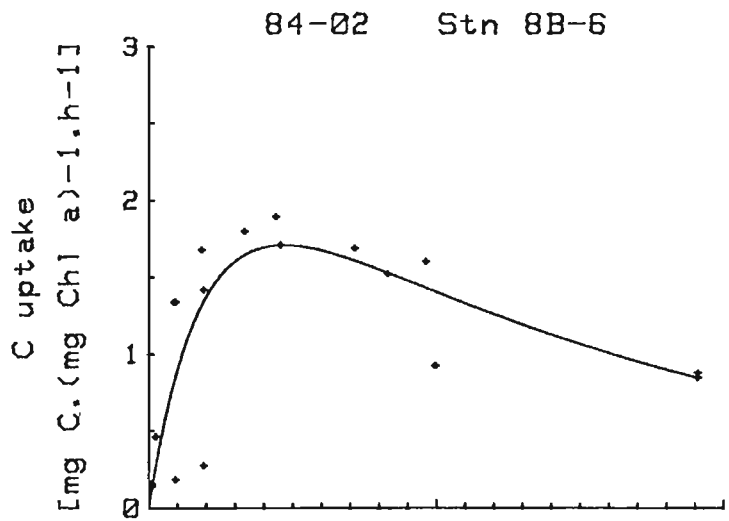

84-02 Stn 6B-6
C uptake
[mg C.(mg Chl a)-1.h-1]
0
1
2
3
0
200
400
600
800
1000
1200
1400
1600
1800
2000
Irradiance [uEin.s-1.m-2]

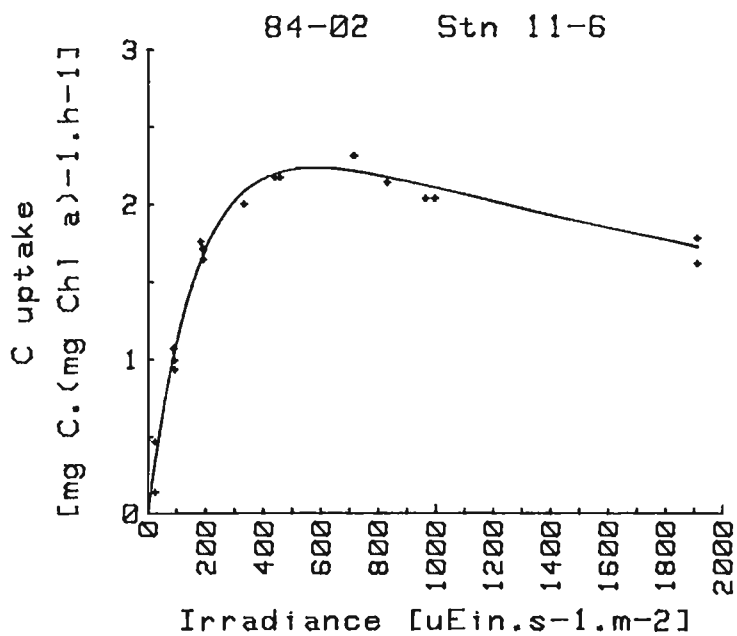

84-02 Stn 6B-9
0
200
400
600
800
1000
1200
1400
1600
1800
2000
Irradiance [uEin.s-1.m-2]

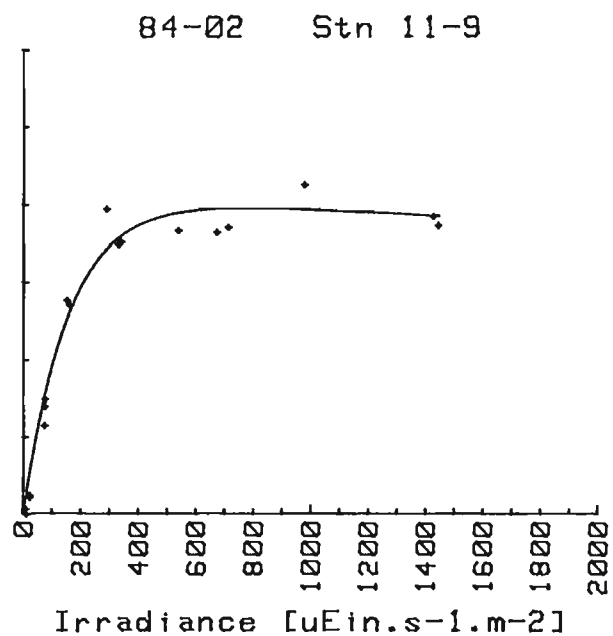
```
-----------------------------------------
Cruise:  84-02     Date:  84.05.13
Station: 8B-6      Time:       0508 (LAT)
                               0748 (PDT)
                   Depth:     41.2  m
                   Chlor a:    0.7 mg.m-3

Parameter estimates:  Derived parameters:

    Ps =   2.48          Pm =    1.7
     a =   0.012         Im =  458.0
     b =   0.001         Ik =  139.9
                         Ib =   1.72E+03

     n = 20         r =  0.792   (16 d.f.)
```

```
-----------------------------------------
Cruise:  84-02     Date:  84.05.13
Station: 11-6      Time:       1138 (LAT)
                               1418 (PDT)
                   Depth:     40.9  m
                   Chlor a:    0.5 mg.m-3

Parameter estimates:  Derived parameters:

    Ps =   2.65          Pm =    2.22
     a =   0.015         Im =  570.9
     b =   0.001         Ik =  149.4
                         Ib =   4.20E+03

     n = 17         r =  0.988   (13 d.f.)
```

```
-----------------------------------------
Cruise:  84-02     Date:  84.05.13
Station: 11-9      Time:       1138 (LAT)
                               1418 (PDT)
                   Depth:      8.1  m
                   Chlor a:    0.5 mg.m-3

Parameter estimates:  Derived parameters:

    Ps =   2.07          Pm =    1.96
     a =   0.013         Im =  762.3
     b =   0.000         Ik =  155.2
                        Ib =   1.70E+04

     n = 18         r =  0.984   (14 d.f.)
```


84-02 Stn 8B-6
C uptake
[mg C.(mg Chl a)-1.h-1]
0
1
2
3

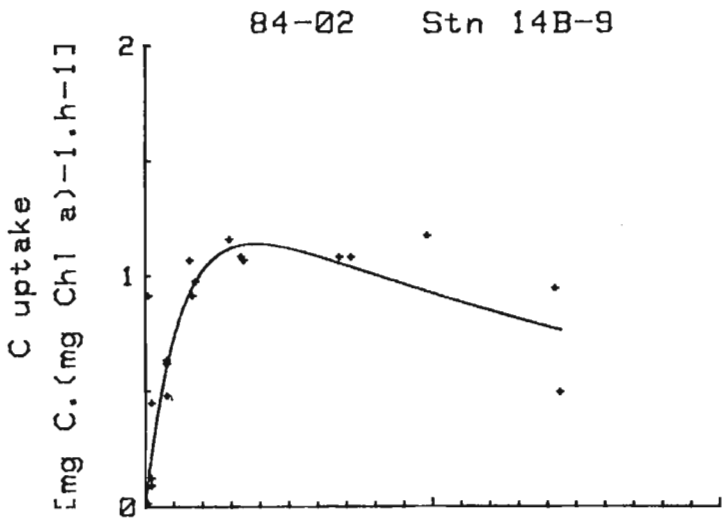

84-02 Stn 11-6
C uptake
[mg C.(mg Chl a)-1.h-1]
0
1
2
3
0
200
400
600
800
1000
1200
1400
1600
1800
2000
Irradiance [uEin.s-1.m-2]

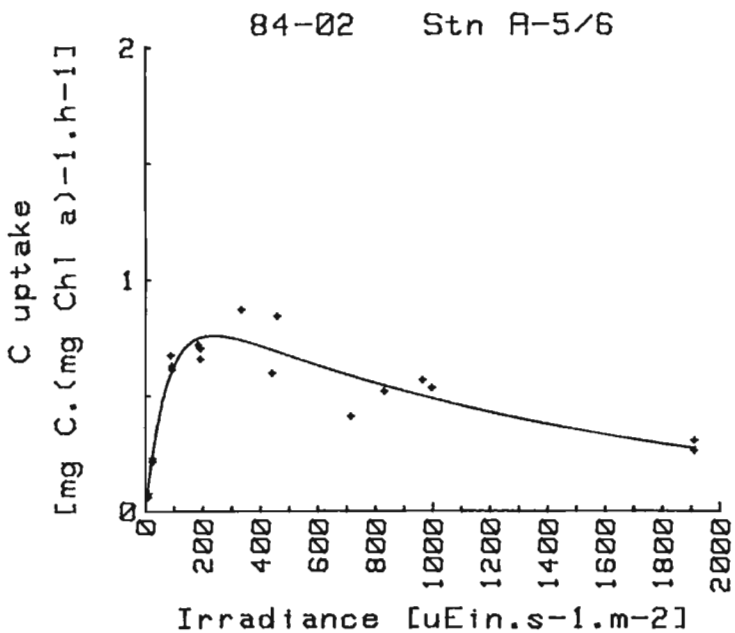

84-02 Stn 11-9
0
200
400
600
800
1000
1200
1400
1600
1800
2000
Irradiance [uEin.s-1.m-2]

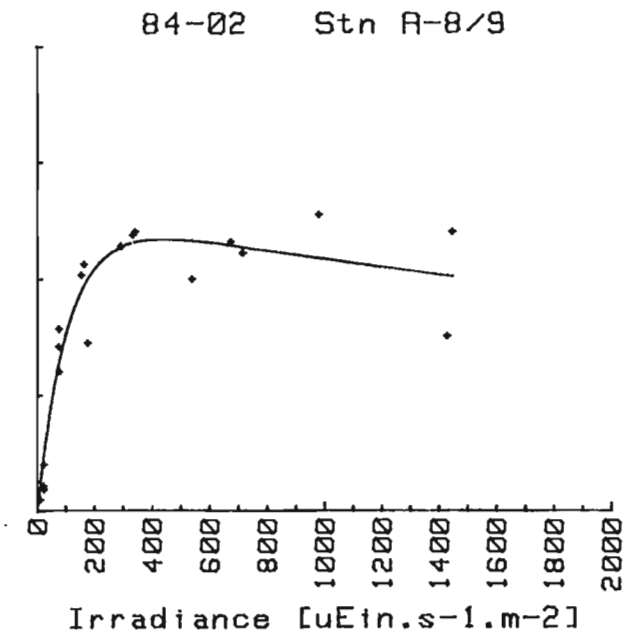
```
-----------------------------------------
Cruise:  84-02     Date:  84.05.13
Station: 14B-9     Time:       1913 (LAT)
                               2153 (PDT)
                   Depth:      9.6  m
                   Chlor a:    0.6 mg.m-3

Parameter estimates:  Derived parameters:

    Ps =   1.41          Pm =    1.2
     a =   0.011         Im =  378.1
     b =   0.001         Ik =  101.2
                         Ib =   2.52E+03

     n = 20        r =  0.808   (16 d.f.)
```

```
-----------------------------------------
Cruise:  84-02     Date:  84.05.14
Station: A-5/6     Time:       2311 (LAT)
                               0151 (PDT)
                   Depth:     42.3  m
                   Chlor a:    0.8 mg.m-3

Parameter estimates:  Derived parameters:

    Ps =   0.93          Pm =    0.76
     a =   0.012         Im =  243.3
     b =   0.001         Ik =   65.5
                         Ib =   1.58E+03

     n = 21        r =  0.951   (17 d.f.)
```

```
-----------------------------------------
Cruise:  84-02     Date:  84.05.14
Station: A-8/9     Time:       2312 (LAT)
                               0152 (PDT)
                   Depth:     11.0  m
                   Chlor a:    0.6 mg.m-3

Parameter estimates:  Derived parameters:

    Ps =   1.27          Pm =    1.17
     a =   0.012         Im =  447.9
     b =   0.000         Ik =   99.8
                         Ib =   6.61E+03

     n = 20        r =  0.948   (16 d.f.)
```


84-02 Stn 14B-9
C uptake
[mg C.(mg Chl a)-1.h-1]
0
1
2


84-02 Stn A-5/6
C uptake
[mg C.(mg Chl a)-1.h-1]
0
1
2
0
200
400
600
800
1000
1200
1400
1600
1800
2000
Irradiance [uEin.s-1.m-2]


84-02 Stn A-8/9
0
200
400
600
800
1000
1200
1400
1600
1800
2000
Irradiance [uEin.s-1.m-2]

Cruise: 84-02 Date: 84.05.14
Station: B-3/4 Time: 0216 (LAT)
0456 (PDT)
Depth: 41.7 m
Chlor a: 0.7 mg.m-3

Parameter estimates: Derived parameters:

Ps =	0.85	Pm =	0.77
a =	0.015	Im =	232.7
b =	0.000	Ik =	52.3
		Ib =	3.31E+03

n = 18 r = 0.954 (14 d.f.)

Cruise: 84-02 Date: 84.05.14
Station: B-6 Time: 0217 (LAT)
0457 (PDT)
Depth: 9.8 m
Chlor a: 0.6 mg.m-3

Parameter estimates: Derived parameters:

Ps =	1.99	Pm =	1.63
a =	0.013	Im =	470.5
b =	0.001	Ik =	125.9
		Ib =	3.15E+03

n = 20 r = 0.989 (16 d.f.)

Cruise: 84-02 Date: 84.05.14
Station: C-3 Time: 0512 (LAT)
0752 (PDT)
Depth: 40.9 m
Chlor a: 0.7 mg.m-3

Parameter estimates: Derived parameters:

Ps =	2.65	Pm =	2.08
a =	0.030	Im =	246.5
b =	0.002	Ik =	68.7
		Ib =	1.38E+03

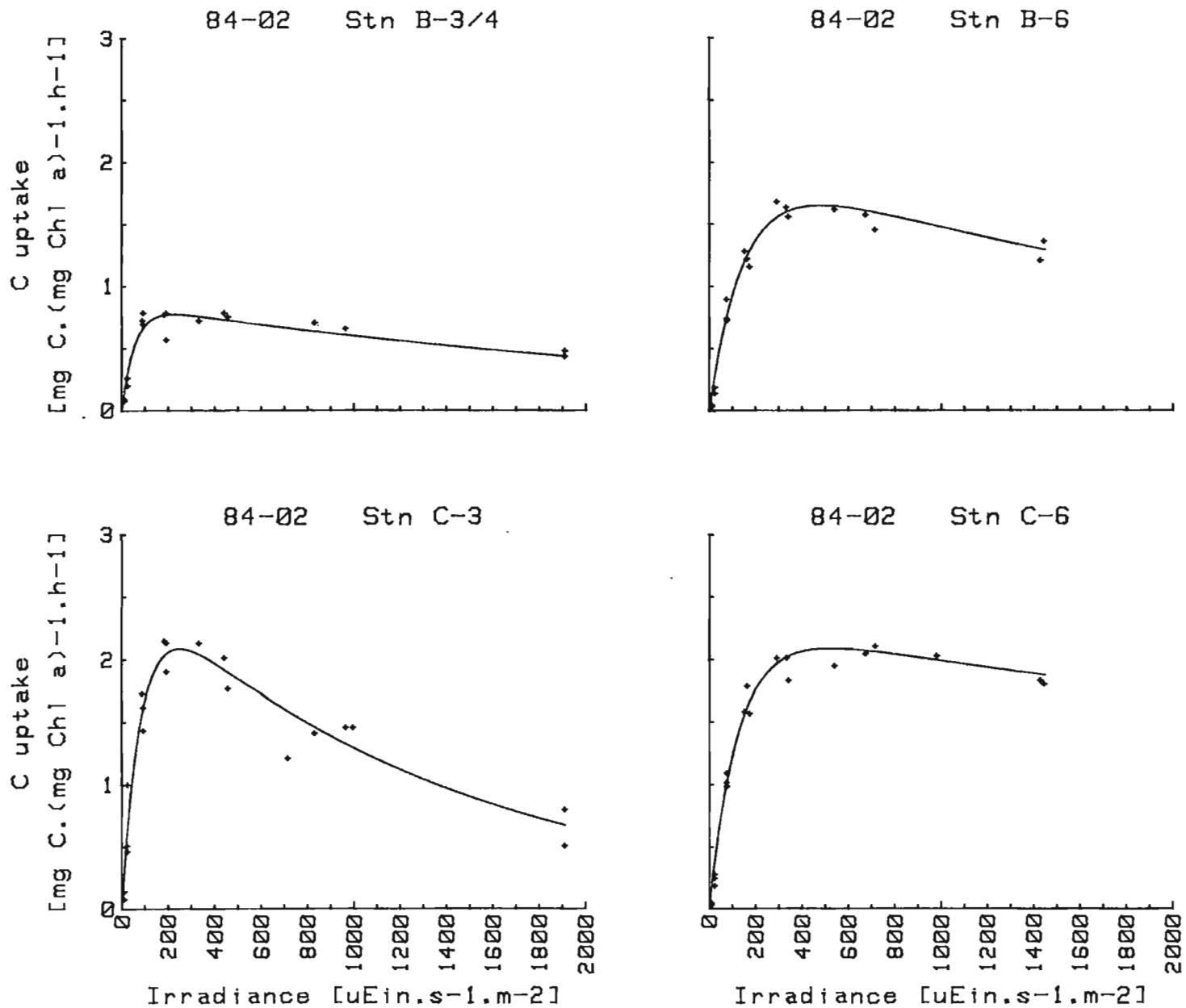
n = 20 r = 0.962 (16 d.f.)

Cruise: 84-02 Date: 84.05.14
Station: C-6 Time: 0514 (LAT)
0754 (PDT)
Depth: 8.8 m
Chlor a: 0.7 mg.m-3

Parameter estimates: Derived parameters:

Ps =	2.27	Pm =	2.06
a =	0.018	Im =	512.7
b =	0.000	Ik =	117.4
		Ib =	6.72E+03

n = 21 r = 0.991 (17 d.f.)


84-02 Stn B-3/4
84-02 Stn B-6
84-02 Stn C-3
84-02 Stn C-6
C uptake
[mg C.(mg Chl a)-1.h-1]
0
1
2
3
0
200
400
600
800
1000
1200
1400
1600
1800
2000
Irradiance [uEin.s-1.m-2]

Cruise: 84-02 Date: 84.05.14
Station: D-3 Time: 0824 (LAT)
1104 (PDT)
Depth: 40.2 m
Chlor a: 0.9 mg.m-3

Parameter estimates: Derived parameters:

Ps = 1.54 Pm = 1.20
a = 0.019 Im = 224.8
b = 0.001 Ik = 63.1
Ib = 1.22E+03

n = 20 r = 0.886 (16 d.f.)

Cruise: 84-02 Date: 84.05.14
Station: D-7 Time: 0826 (LAT)
1106 (PDT)
Depth: 8.3 m
Chlor a: 0.8 mg.m-3

Parameter estimates: Derived parameters:

Ps = 2.13 Pm = 1.87
a = 0.014 Im = 561.0
b = 0.000 Ik = 137.7
Ib = 5.42E+03

n = 21 r = 0.948 (17 d.f.)

Cruise: 84-02 Date: 84.05.14
Station: E-5 Time: 1108 (LAT)
1348 (PDT)
Depth: 39.1 m
Chlor a: 0.8 mg.m-3

Parameter estimates: Derived parameters:

Ps = 2.99 Pm = 2.47
a = 0.023 Im = 400.0
b = 0.001 Ik = 106.3
Ib = 2.76E+03

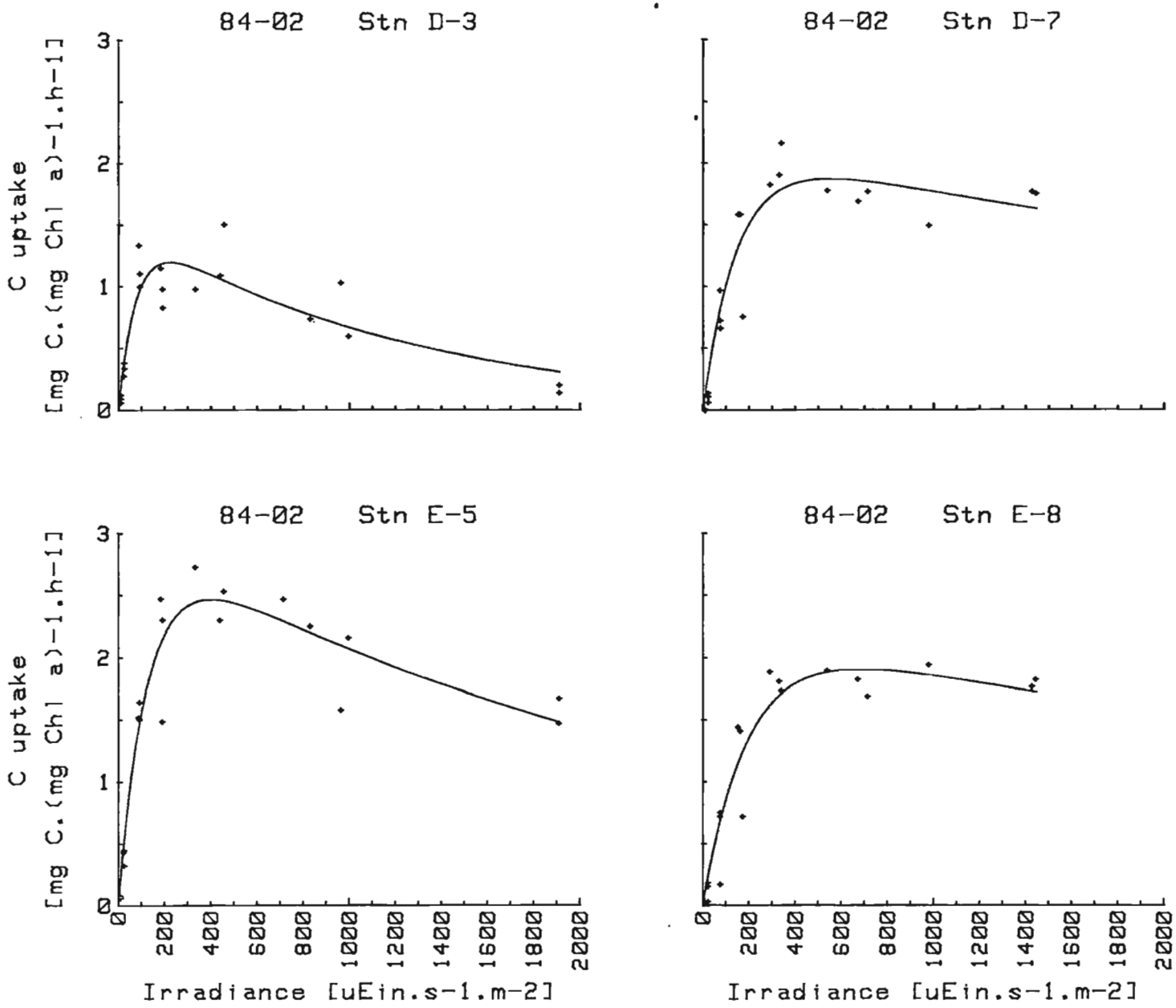
n = 21 r = 0.959 (17 d.f.)

Cruise: 84-02 Date: 84.05.14
Station: E-8 Time: 1109 (LAT)
1349 (PDT)
Depth: 8.0 m
Chlor a: 0.8 mg.m-3

Parameter estimates: Derived parameters:

Ps = 2.23 Pm = 1.92
a = 0.011 Im = 717.2
b = 0.000 Ik = 180.6
Ib = 6.21E+03

n = 21 r = 0.959 (17 d.f.)


84-02 Stn D-3
84-02 Stn D-7
84-02 Stn E-5
84-02 Stn E-8
C uptake
[mg C.(mg Chl a)-1.h-1]
0
1
2
3
0
200
400
600
800
1000
1200
1400
1600
1800
2000
Irradiance [uEin.s-1.m-2]

Cruise: 84-02 Date: 84.05.16
Station: F-6/7 Time: 2318 (LAT)
0159 (PDT)
Depth: 42.2 m
Chlor a: 0.7 mg.m-3

Parameter estimates: Derived parameters:

Ps =	0.80	Pm =	0.66
a =	0.014	Im =	176.0
b =	0.001	Ik =	47.3
		Ib =	1.15E+03

n = 21 r = 0.940 (17 d.f.)

Cruise: 84-02 Date: 84.05.16
Station: F-9/10 Time: 2318 (LAT)
0159 (PDT)
Depth: 8.7 m
Chlor a: 0.9 mg.m-3

Parameter estimates: Derived parameters:

Ps =	1.59	Pm =	1.44
a =	0.012	Im =	542.4
b =	0.000	Ik =	124.8
		Ib =	6.95E+03

n = 21 r = 0.983 (17 d.f.)

Cruise: 84-02 Date: 84.05.16
Station: H-2/3 Time: 0322 (LAT)
0603 (PDT)
Depth: 41.3 m
Chlor a: 0.8 mg.m-3

Parameter estimates: Derived parameters:

Ps =	1.10	Pm =	0.89
a =	0.016	Im =	210.7
b =	0.001	Ik =	57.0
		Ib =	1.35E+03

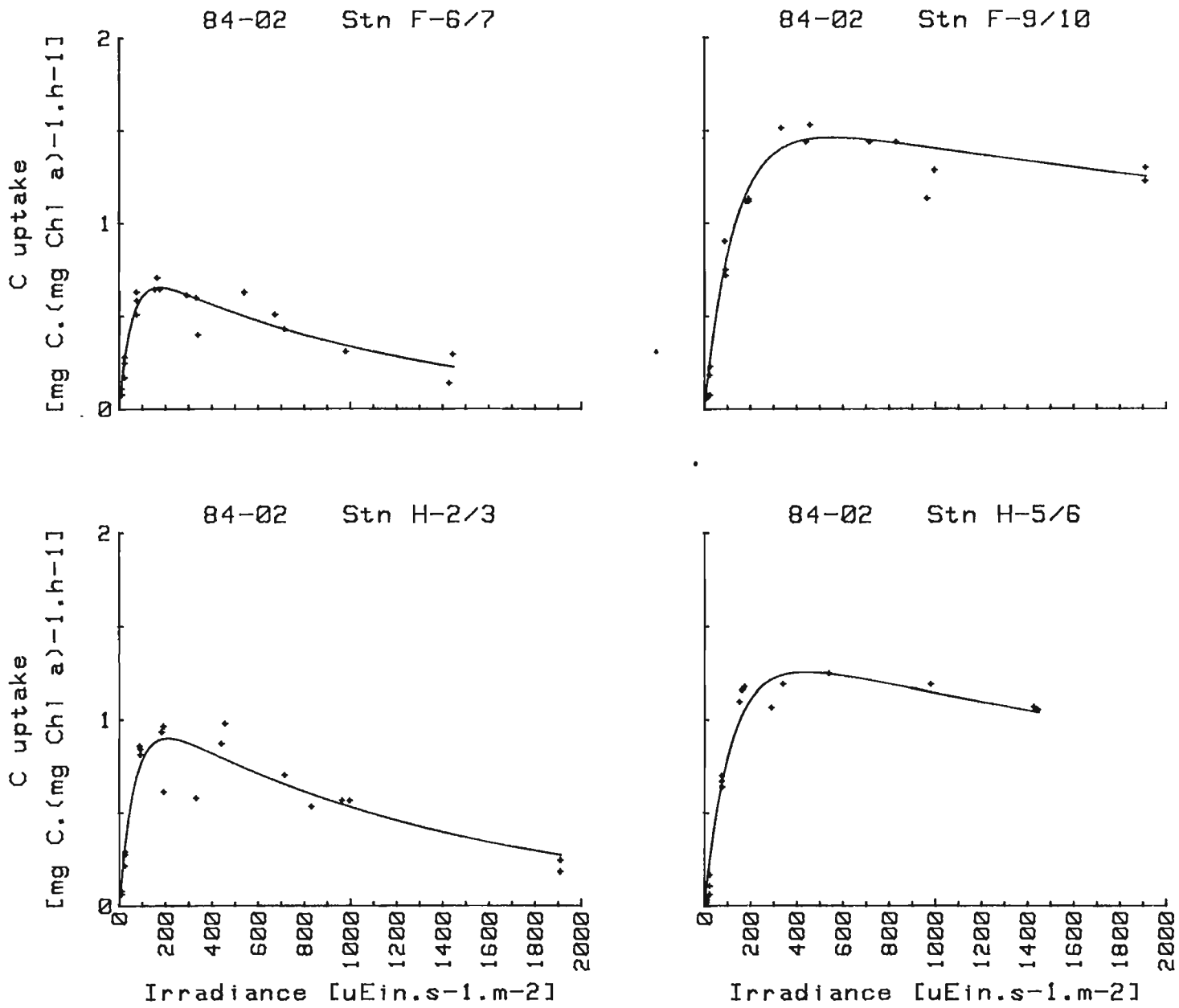
n = 21 r = 0.923 (17 d.f.)

Cruise: 84-02 Date: 84.05.16
Station: H-5/6 Time: 0322 (LAT)
0603 (PDT)
Depth: 9.7 m
Chlor a: 1.1 mg.m-3

Parameter estimates: Derived parameters:

Ps =	1.41	Pm =	1.26
a =	0.012	Im =	440.9
b =	0.000	Ik =	104.0
		Ib =	5.06E+03

n = 18 r = 0.979 (14 d.f.)


84-02 Stn F-6/7
84-02 Stn F-9/10
84-02 Stn H-2/3
84-02 Stn H-5/6
C uptake
[mg C.(mg Chl a)-1.h-1]
0
1
2
0
200
400
600
800
1000
1200
1400
1600
1800
2000
Irradiance [uEin.s-1.m-2]

Cruise: 84-02 Date: 84.05.19
Station: K-2 Time: 0250 (LAT)
0530 (PDT)
Depth: 36.0 m
Chlor a: 1.0 mg.m-3

Parameter estimates: Derived parameters:

Ps =	0.81	Pm =	0.71
a =	0.007	Im =	384.7
b =	0.000	Ik =	95.1
		Ib =	3.61E+03

n = 21 r = 0.937 (17 d.f.)

Cruise: 84-02 Date: 84.05.19
Station: K-5 Time: 0250 (LAT)
0530 (PDT)
Depth: 7.0 m
Chlor a: 1.0 mg.m-3

Parameter estimates: Derived parameters:

Ps =	1.45	Pm =	1.06
a =	0.009	Im =	406.4
b =	0.001	Ik =	119.6
		Ib =	1.80E+03

n = 21 r = 0.939 (17 d.f.)

Cruise: 84-02 Date: 84.05.19
Station: L-2 Time: 0711 (LAT)
0951 (PDT)
Depth: 36.0 m
Chlor a: 1.0 mg.m-3

Parameter estimates: Derived parameters:

Ps =	1.40	Pm =	1.34
a =	0.018	Im =	373.7
b =	0.000	Ik =	73.0
		Ib =	1.02E+04

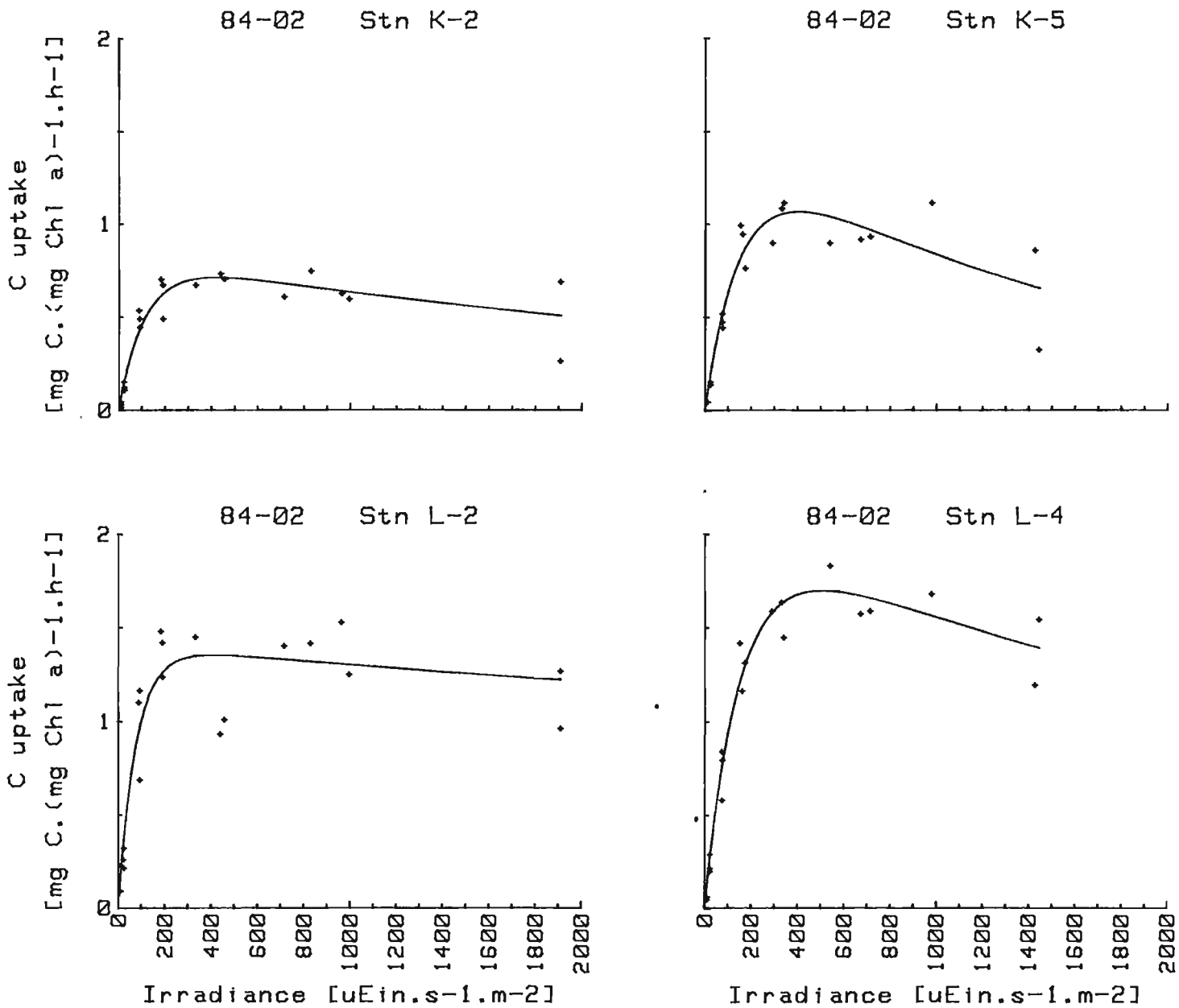
n = 21 r = 0.924 (17 d.f.)

Cruise: 84-02 Date: 84.05.19
Station: L-4 Time: 0711 (LAT)
0951 (PDT)
Depth: 7.0 m
Chlor a: 1.0 mg.m-3

Parameter estimates: Derived parameters:

Ps =	2.00	Pm =	1.69
a =	0.013	Im =	510.1
b =	0.001	Ik =	131.8
		Ib =	3.96E+03

n = 21 r = 0.982 (17 d.f.)


84-02 Stn K-2
84-02 Stn K-5
84-02 Stn L-2
84-02 Stn L-4
C uptake
[mg C.(mg Chl a)-1.h-1]
0
1
2
0
200
400
600
800
1000
1200
1400
1600
1800
2000
Irradiance [uEin.s-1.m-2]

Cruise: 84-02 Date: 84.05.19
Station: M-2 Time: 0907 (LAT)
1147 (PDT)
Depth: 36.0 m
Chlor a: 1.0 mg.m-3

Parameter estimates: Derived parameters:

Ps =	2.14	Pm =	1.88
a =	0.019	Im =	409.4
b =	0.001	Ik =	100.3
		Ib =	4.00E+03

n = 21 r = 0.940 (17 d.f.)

Cruise: 84-02 Date: 84.05.19
Station: M-4 Time: 0907 (LAT)
1147 (PDT)
Depth: 7.0 m
Chlor a: 1.0 mg.m-3

Parameter estimates: Derived parameters:

Ps =	1.97	Pm =	1.83
a =	0.018	Im =	478.0
b =	0.000	Ik =	102.5
		Ib =	8.38E+03

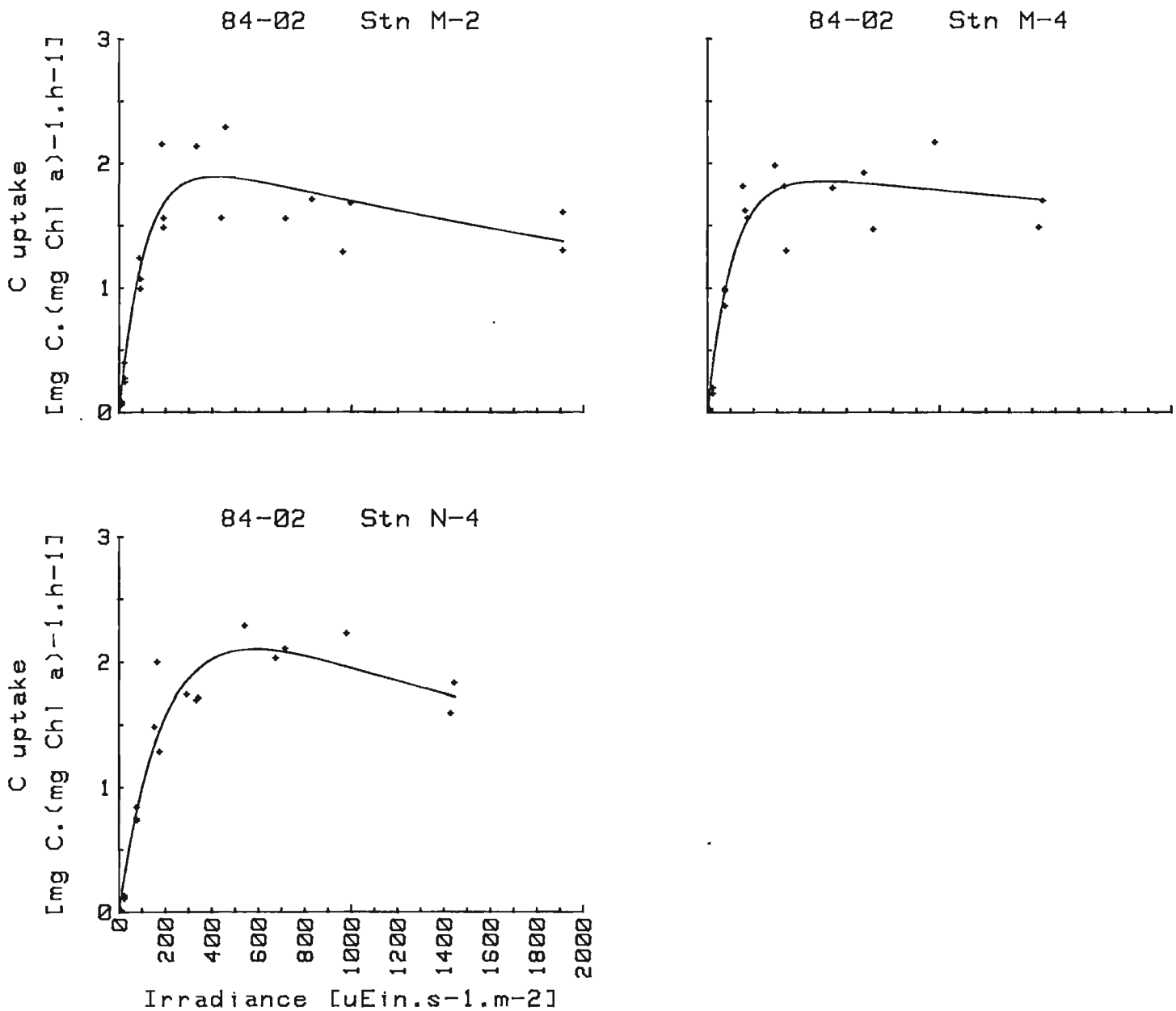
n = 21 r = 0.951 (17 d.f.)

Cruise: 84-02 Date: 84.05.19
Station: N-4 Time: 1221 (LAT)
1500 (PDT)
Depth: 7.0 m
Chlor a: 0.9 mg.m-3

Parameter estimates: Derived parameters:

Ps =	2.66	Pm =	2.1
a =	0.013	Im =	601.4
b =	0.001	Ik =	165.7
		Ib =	2.55E+03

n = 21 r = 0.968 (17 d.f.)


84-02 Stn M-2
84-02 Stn M-4
84-02 Stn N-4
C uptake
[mg C.(mg Chl a)-1.h-1]
0
1
2
3
0
200
400
600
800
1000
1200
1400
1600
1800
2000
Irradiance [uEin.s-1.m-2]

Cruise: 84-02 Date: 84.05.19
Station: O-2 Time: 1506 (LAT)
1745 (PDT)
Depth: 36.0 m
Chlor a: 1.1 mg.m-3

Parameter estimates: Derived parameters:

Ps = 1.20 Pm = 0.95
a = 0.008 Im = 440.8
b = 0.001 Ik = 122.2
Ib = 2.53E+03

n = 21 r = 0.950 (17 d.f.)

Cruise: 84-02 Date: 84.05.19
Station: O-4 Time: 1506 (LAT)
1745 (PDT)
Depth: 7.0 m
Chlor a: 1.2 mg.m-3

Parameter estimates: Derived parameters:

Ps = 1.42 Pm = 1.42
a = 0.016 Im = 856.2
b = 0.000 Ik = 88.3
Ib = 1.42E+06

n = 20 r = 0.865 (16 d.f.)

Cruise: 84-02 Date: 84.05.19
Station: P-2 Time: 1806 (LAT)
2045 (PDT)
Depth: 36.0 m
Chlor a: 1.0 mg.m-3

Parameter estimates: Derived parameters:

Ps = 2.08 Pm = 2.01
a = 0.025 Im = 425.8
b = 0.000 Ik = 79.1
Ib = 1.48E+04

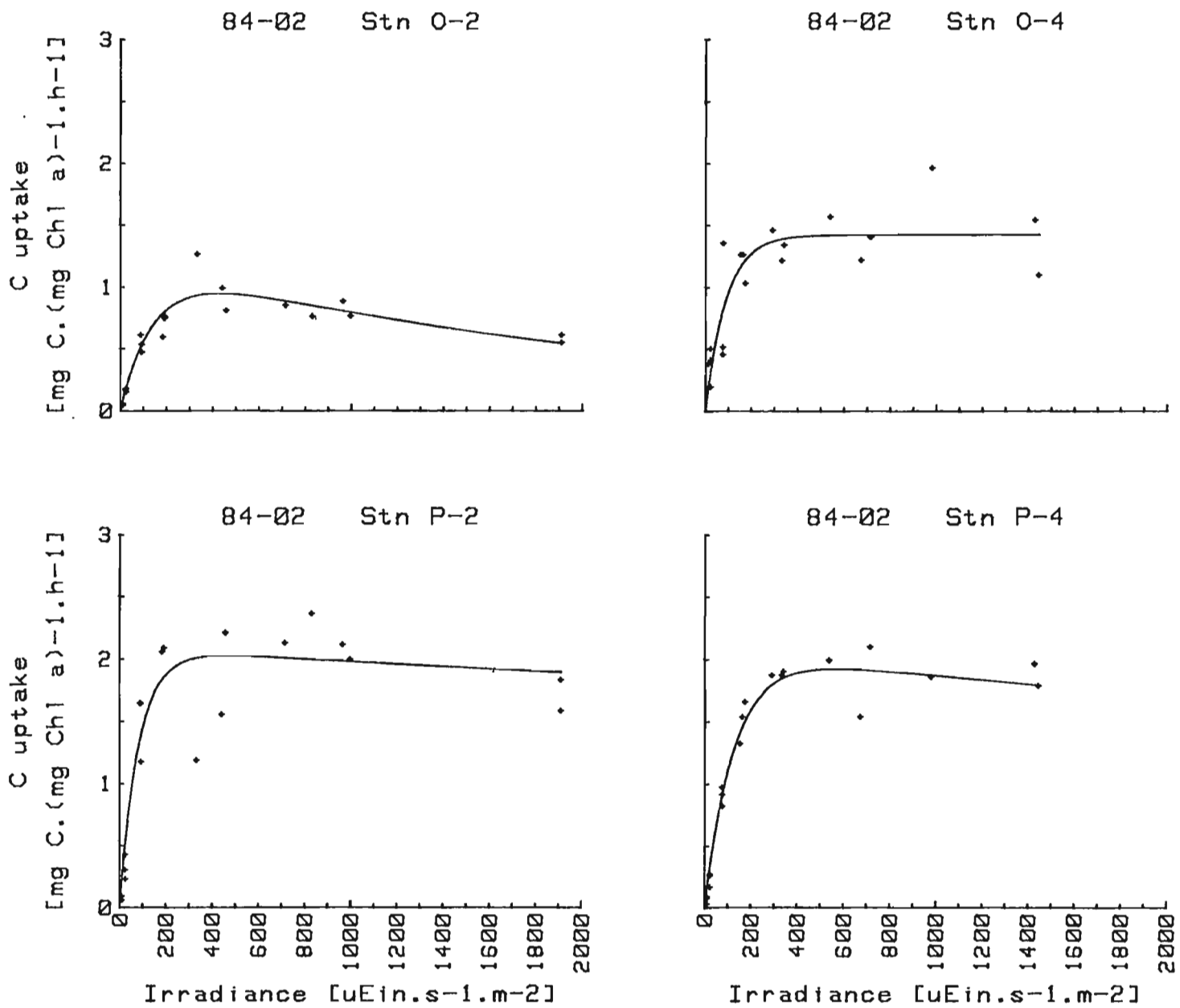
n = 19 r = 0.914 (15 d.f.)

Cruise: 84-02 Date: 84.05.19
Station: P-4 Time: 1806 (LAT)
2045 (PDT)
Depth: 7.0 m
Chlor a: 1.1 mg.m-3

Parameter estimates: Derived parameters:

Ps = 2.06 Pm = 1.95
a = 0.016 Im = 586.0
b = 0.000 Ik = 120.7
Ib = 1.24E+04

n = 21 r = 0.984 (17 d.f.)


84-02 Stn O-2
84-02 Stn O-4
84-02 Stn P-2
84-02 Stn P-4
C uptake
[mg C.(mg Chl a)-1.h-1]
0
1
2
3
0
200
400
600
800
1000
1200
1400
1600
1800
2000
Irradiance [uEin.s-1.m-2]

Cruise: 84-02 Date: 84.05.20
Station: R-2 Time: 0126 (LAT)
0405 (PDT)
Depth: 36.0 m
Chlor a: 1.4 mg.m-3

Parameter estimates: Derived parameters:

Ps =	0.91	Pm =	0.83
a =	0.011	Im =	338.0
b =	0.000	Ik =	76.6
		Ib =	4.64E+03

n = 20 r = 0.966 (16 d.f.)

Cruise: 84+02 Date: 84.05.20
Station: R-4 Time: 0126 (LAT)
0405 (PDT)
Depth: 7.0 m
Chlor a: 1.4 mg.m-3

Parameter estimates: Derived parameters:

Ps =	0.77	Pm =	0.72
a =	0.012	Im =	293.0
b =	0.000	Ik =	61.5
		Ib =	5.68E+03

n = 21 r = 0.940 (17 d.f.)

Cruise: 84-02 Date: 84.05.20
Station: S-2 Time: 0351 (LAT)
0630 (PDT)
Depth: 36.0 m
Chlor a: 1.2 mg.m-3

Parameter estimates: Derived parameters:

Ps =	1.76	Pm =	1.55
a =	0.019	Im =	339.1
b =	0.001	Ik =	82.5
		Ib =	3.41E+03

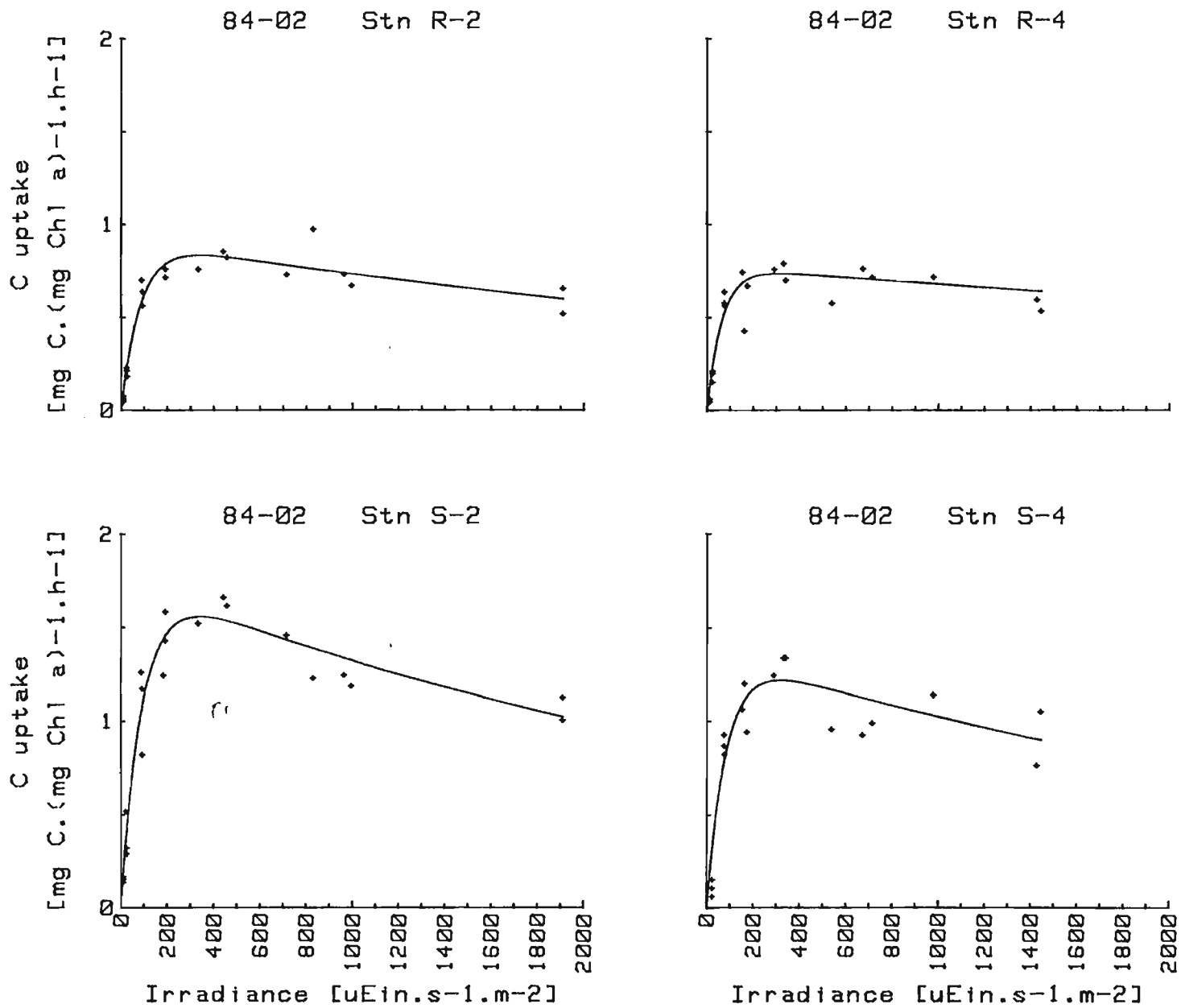
n = 21 r = 0.969 (17 d.f.)

Cruise: 84-02 Date: 84.05.20
Station: S-4 Time: 0351 (LAT)
0630 (PDT)
Depth: 7.0 m
Chlor a: 1.2 mg.m-3

Parameter estimates: Derived parameters:

Ps =	1.37	Pm =	1.21
a =	0.016	Im =	319.0
b =	0.000	Ik =	77.7
		Ib =	3.19E+03

n = 18 r = 0.913 (14 d.f.)


84-02 Stn R-2
84-02 Stn R-4
84-02 Stn S-2
84-02 Stn S-4
C uptake
[mg C.(mg Chl a)-1.h-1]
0
1
2
0
200
400
600
800
1000
1200
1400
1600
1800
2000
Irradiance [uEin.s-1.m-2]

Cruise: 84-02 Date: 84.05.20
Station: T-1 Time: 0721 (LAT)
1000 (PDT)
Depth: 36.0 m
Chlor a: 1.0 mg.m-3

Parameter estimates: Derived parameters:

Ps = 1.58 Pm = 1.53
a = 0.018 Im = 448.1
b = 0.000 Ik = 84.0
Ib = 1.48E+04

n = 21 r = 0.955 (17 d.f.)

Cruise: 84-02 Date: 84.05.20
Station: T-2 Time: 0721 (LAT)
1000 (PDT)
Depth: 7.0 m
Chlor a: 1.1 mg.m-3

Parameter estimates: Derived parameters:

Ps = 1.74 Pm = 1.54
a = 0.014 Im = 443.4
b = 0.000 Ik = 107.2
Ib = 4.58E+03

n = 19 r = 0.953 (15 d.f.)

Cruise: 84-02 Date: 84.05.20
Station: U-1 Time: 1033 (LAT)
1312 (PDT)
Depth: 36.0 m
Chlor a: 0.9 mg.m-3

Parameter estimates: Derived parameters:

Ps = 2.39 Pm = 1.85
a = 0.014 Im = 461.7
b = 0.001 Ik = 130.3
Ib = 2.45E+03

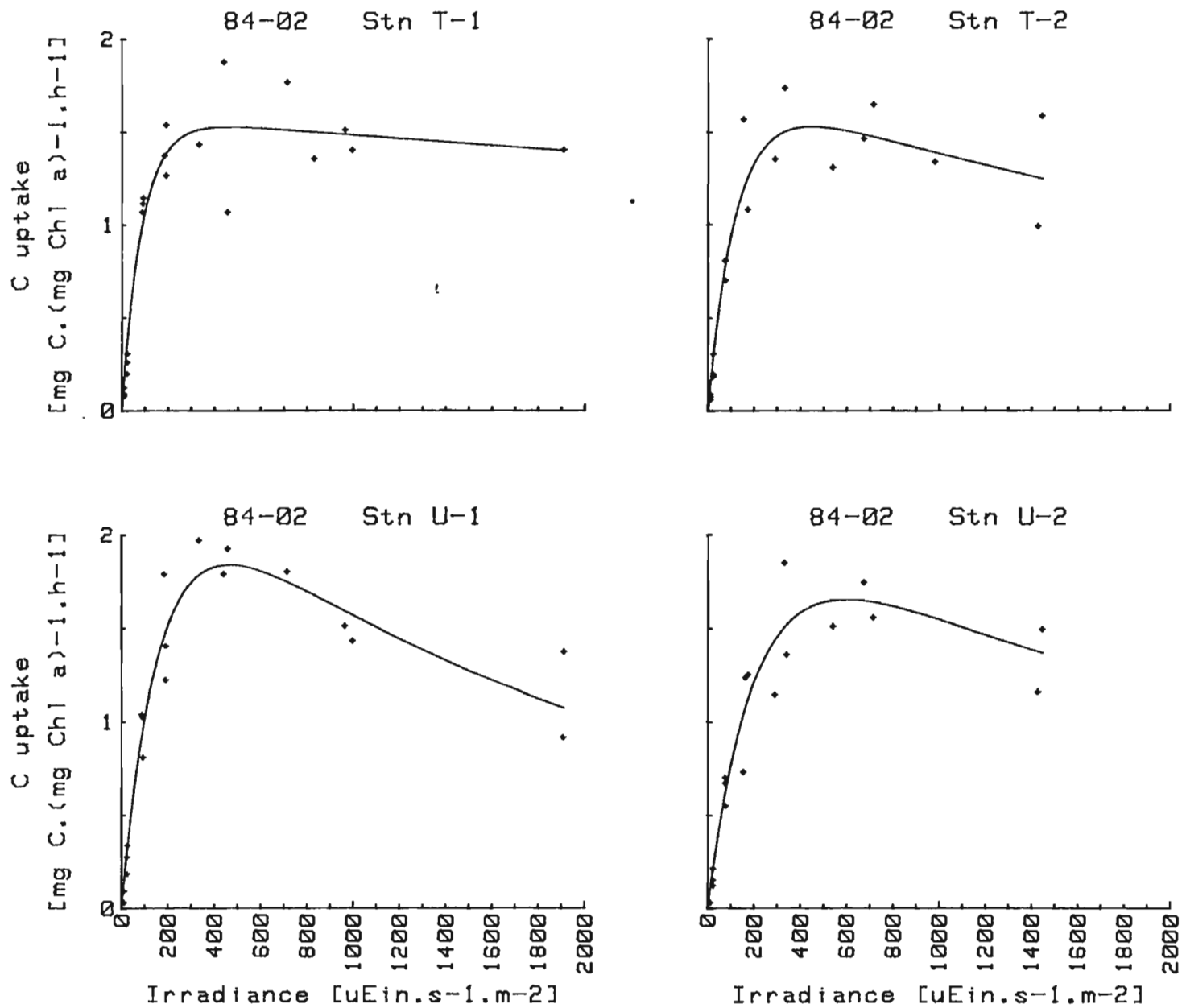
n = 20 r = 0.971 (16 d.f.)

Cruise: 84-02 Date: 84.05.20
Station: U-2 Time: 1033 (LAT)
1312 (PDT)
Depth: 7.0 m
Chlor a: 0.9 mg.m-3

Parameter estimates: Derived parameters:

Ps = 2.08 Pm = 1.63
a = 0.010 Im = 592.8
b = 0.001 Ik = 166.1
Ib = 3.25E+03

n = 20 r = 0.963 (16 d.f.)

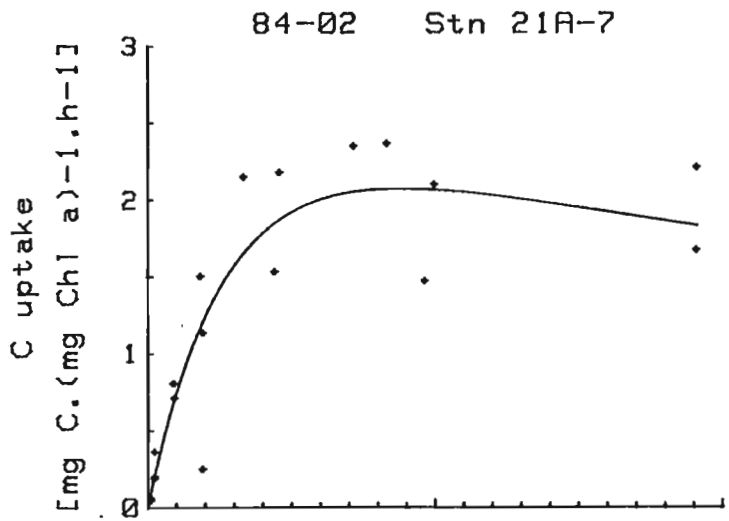

84-02 Stn T-1
84-02 Stn T-2
84-02 Stn U-1
84-02 Stn U-2
C uptake
[mg C.(mg Chl a)-1.h-1]
0
1
2
0
200
400
600
800
1000
1200
1400
1600
1800
2000
Irradiance [uEin.s-1.m-2]

Cruise: 84-02 Date: 84.05.21
Station: 21A-7 Time: 0750 (LAT)
1029 (PDT)
Depth: 35.6 m
Chlor a: 0.3 mg.m-3

Parameter estimates: Derived parameters:

Ps =	2.49	Pm =	2.1
a =	0.009	Im =	902.1
b =	0.000	Ik =	232.7
		Ib =	7.05E+03

n = 20 r = 0.905 (16 d.f.)


84-02 Stn 21A-7
C uptake
[mg C.(mg Chl a)-1.h-1]
3
2
1
0

DATA SECTION 5

Phytoplankton taxonomic list and abundance data

PHYTOPLANKTON TAXONOMIC LIST (WITH ABBREVIATIONS USED IN DATA RECORDS)

		Abbreviations in data records
Cyanobacteria		
Nostocales		
Oscillatoriaceae		
	Oscillatoria spp.	oscillator spp.
Nostocaceae		
	Anabaena spp.	anabaena spp.
	Nostoc sp.	nostoc sp.
Chrysophyta		
Chrysophyceae		
	Soleniocla setigera	soleniocla setigera
Ochromonadales		
Ochromonadaceae		
	Ochromonas spp.	ochromonas spp.
Dinobryaceae		
	Dinobryon divergens	dinobryon divergens
	D. suecicum	dinobryon suecicum
Dictyochales		
Dictyochaceae		
	Dictyocha speculum	dictyocha speculum
Chromulinales		
Pedinellaceae		
	sp.1	chrysophyc sp.1
	sp.2	chrysophyc sp.2
	Apedinella spinifera	apedinella spinifera
Xanthophyta		
Xanthophyceae		
Heterochloridales		
Heterochloridaceae		
	Olisthodiscus sp.	olisthodis sp.
	O. carterae	olisthodis carterae
Mishcococcales		
Pleurochloridaceae		
	Meringosphaera mediterranea	meringosph mediterranea

Haptophyta			
Haptophyceae			
	spp.	haptophyce spp.	
	spp. (naked. 2.5-3.5 um)	haptophyce spp.	naked 2.5-3.5
	(consists of 2 species: Imantonia sp. and Phaeocystis sp.)		
Prymnesiales			
Prymnesiaceae			
	Corymbellus sp	corymbellu sp.	
	C. aureus	corymbellu aureus	
	Chrysochromulina sp.1	chrysochro sp.1	
	C. spp. (4-5.5 um)	chrysochro spp.	4-5.5
	C. spp. (6-10 um)	chrysochro spp.	6-10
Phaeocystaceae			
	Phaeocystis pouchetii	phaeocysti pouchetii	
Isochrysidales			
Gephyrocapsaceae			
	Coccolithus spp.	coccolitha spp.	
	Emiliania huxleyi	emiliania huxleyi	
Coccosphaerales			
Zygosphaeraceae			
	Crystallolithus hyalinus	crystallol hyalinus	
Bacillariophyta			
Bacillariophyceae			
Centrales			
	spp.	centrales spp.	
Cymatosiraceae			
	Leyanella arenaria	leyanella arenaria	
Corethronaceae			
	Corethron criophilum	corethron criophilum	
Leptocylindraceae			
	Schroederalla delicatula	schroedere delicatula	
	Leptocylindrus danicus	leptocylin danicus	
	L. minimus	leptocylin minimus	
	L. mediterraneus	leptocylin mediterraneu	
Coscinodiscaceae			
	Melosira monoliformis	melosira moniliformis	
	Paralia sulcata	paralia sulcata	
	Stephanopyxis spp.	stephanopy spp.	
	S. nipponica	stephanopy nipponica	
	S. palmeriana	stephanopy palmeriana	
	S. turris	stephanopy turris	

	Podosira spp.	podosira spp.
	Cyclotella sp.	cyclotella sp.
	C. caspia	cyclotella caspia
	Skeletonema costatum	skeletonem costatum
	Thalassiosira spp.	thalassios spp.
	T. gravida (syn. T. rotula)	thalassios gravida rotula
	T. cf. condensata	thalassios cf.condensat
	T. cf. elsayedii	thalassios cf.elsayedii
	T. angstii	thalassios angstii
	T. angulata	thalassios angulata
	T. anguste-lineata	thalassios anguste-line
	T. binata	thalassios binata
	T. tenera	thalassios tenera
	T. aestivalis	thalassios aestivalis
	T. baltica	thalassios baltica
	T. decipiens	thalassios decipiens
	T. nordenskioldii	thalassios nordenskiold
	T. pacifica	thalassios pacifica
	T. subtilis	thalassios subtilis
	T. lineata	thalassios lineata
	T. eccentrica	thalassios eccentrica
	T. pseudonana	thalassios pseudonana
	T. incerta	thalassios incerta
	T. mendiolana	thalassios mendiolana
	T. miniscula	thalassios miniscula
	T. conferta	thalassios conferta
	T. leptopus	thalassios leptopus
	T. constricta	thalassios constricta
	T. symmetrica	thalassios symmetrica
	Coscinodiscus spp.	coscinodis spp.
	C. granii	coscinodis granii
	C. polychorda	coscinodis polychorda
Leptocylindraceae		
	Lauderia borealis	lauderia borealis
	Bacteriosira fragilis	bacteriosi fragilis
Actinodiscaceae		
	Actinoptychus undulatus	actinoptyc undulatus
	A. senarius	actinoptyc senarius
Asterolampraceae		
	Asteromphalus heptactis	asterompha heptactis
	A. cf. sarcophagus	cf.asterom sarcophagus

Biddulphiaceae			
	Biddulphia spp.	bidulphia	spp.
	B. aurita	bidulphia	aurita
	B. longioruris	bidulphia	longioruris
	Eucampia spp.	eucampia	spp.
	E. zoodiacus	eucampia	zoodiacus
	Hemiaulus membranaceus	hemiaulus	membranaceus
	Cerataulina pelagica	cerataulin	pelagica
	Ditylum brightwellii	ditylum	brightwellii
Chaetoceraceae			
	Chaetoceros spp. (cells)	chaetocero	spp. cells
	C. spp. (chains)	chaetocero	spp. chains
	C. spp. (spores)	chaetocero	spp. spores
	C. sp. 1	chaetocero	sp.1
	C. cf. meulleri	chaetocero	cf.muelleri
	C. perpusillum	chaetocero	cf.perpusill
	C. rostratum	chaetocero	rostratum
	C. affine	chaetocero	affine
	C. affine v. willei	chaetocero	affine v.willei
	C. atlanticum	chaetocero	atlanticum
	C. boreale	chaetocero	boreale
	C. breve	chaetocero	breve
	C. ceratosporum	chaetocero	ceratosporum
	C. cinctum	chaetocero	cinctum
	C. compressum	chaetocero	compressum
	C. constrictum	chaetocero	constrictum
	C. convolutum	chaetocero	convolutum
	C. curvisetum	chaetocero	curvisetum
	C. danicum	chaetocero	danicum
	C. debile	chaetocero	debile
	C. decipiens	chaetocero	decipiens
	C. decipiens f. singularis	chaetocero	decipiens f.singularis
	C. densum	chaetocero	densum
	C. diadema	chaetocero	diadema
	C. didymum	chaetocero	didymum
	C. eibenii	chaetocero	eibenii
	C. gracile	chaetocero	gracile
	C. laciniosum	chaetocero	laciniosum
	C. lorenzianum	chaetocero	lorenzianum
	C. pelagicum	chaetocero	pelagicum
	C. peruvianum	chaetocero	peruvianum
	C. pseudocrinitum	chaetocero	pseudocrinit

	C. radicans	chaetocero radicans	
	C. seriacanthum	chaetocero seriacanthum	
	C. septentrion	chaetocero septentriona	
	C. simile	chaetocero simile	
	C. socialis	chaetocero socialis	
	C. subtile	chaetocero subtile	
	C. vistulae	chaetocero vistulae	
	C. wighami	chaetocero wighami	
	C. filiforme	chaetocero filiforme	
	C. simplex	chaetocero simplex	
	C. simplex v. calcitrans	chaetocero simplex	v.calcitrans
	C. vixvisibilis	chaetocero vixvisibilis	
Bacteriastraceae			
	Bacteriastrum delicatula	bacteriast delicatula	
Rhizosoleniaceae			
	Rhizosolenia spp.	rhizosolen spp.	
	R. alata f. gracillima	rhizosolen alata	f.gracillima
	R. alata f. indica	rhizosolen alata	f.indica
	R. alata f. alata	rhizosolen alata	f.alata
	R. bergonii	rhizosolen bergonii	
	R. delicatula	rhizosolen delicatula	
	R. fragilissima	rhizosolen fragilissima	
	R. fragilissima v. 1	rhizosolen fragilissima	v.1
	R. hebetata	rhizosolen hebetata	
	R. hebetata f. hiemalis	rhizosolen hebetata	f.hiemalis
	R. hebetata f. semispina	rhizosolen hebetata	f.semispina
	R. setigera	rhizosolen setigera	
	R. stolterfothii	rhizosolen stolterfothi	
	R. styliformis v. styliformis	rhizosolen styliformis	v.styliformi
Pennales			
	spp.	pennales spp.	
	spp. (0-20 um)	pennales spp.	0-20
	spp. (21-40 um)	pennales spp.	21-40
	spp. (›40 um)	pennales spp.	›40
Cymatooyraceae			
	Minutocellus scriptus	minuticell scriptus	
Fragilariaceae			
	Fragilaria spp.	fragilaria spp.	
	F. oceanica	fragilaria oceanica	
	Synedra acus	synedra acus	

	Asterionella glacialis	asterionel	glacialis	
	A. kariana	asterionel	kariana	
	A. formosa	asterionel	formosa	
	A. bleakelyi	asterionel	bleakelyi	
	Thalassiothrix frauenfeldii	thalassiot	frauenfeldii	
	T. longissima	thalassiot	longissima	
	Thalassionema nitzschiodes	thalassion	nitzschoides	
	T. bacillaris	thalassion	bacillaris	
	Licmophora spp.	licmophora	spp.	
	L. abbreviata	licmophora	abbreviata	
	Striatella unipuntata	striatella	unipunctata	
	Grammatophora spp.	grammatoph	spp.	
	Denticulopsis semina	dentioulop	semina	
Naviculaceae				
	Gyrosigma spp. and Pleurosigma spp.	gyrosigma	spp.	pleurosigma
	Navicula spp.	navicula	spp.	
	N. calida	navicula	calida	
	Pleurosigma angulatum	pleurosigm	angulatum	
	P. acutum	pleurosigm	acutum	
	Tropidoneis spp.	tropidonei	spp.	
	T. antartica v. polyplasta	tropidonei	antarotica	v.polyplasta
	T. lepidoptera	tropidonei	lepidoptera	
Cymbellaceae				
	Amphora spp.	amphora	spp.	
	A. pusio v. parvula	amphora	pusio	v.parvula
Nitzschiaceae				
	Nitzschia spp.	nitzschia	spp.	
	N. cf. subcurvata	nitzschia	cf.subcurvat	
	N. cf. subpacifica	nitzschia	cf.subpacifi	
	N. cylindriformis and N. pseudonana	nitzschia	cylindrus	pseudonana
	N. sp. 1	nitzschia	sp.1	
	N. americana	nitzschia	americana	
	N. cuspidata	nitzschia	cuspidata	
	N. norwegica	nitzschia	norwegica	
	N. delicatissima	nitzschia	delicatissim	
	N. longissima	nitzschia	longissima	
	N. pungens	nitzschia	pungens	
	N. seriata	nitzschia	seriata	
	N. seriata v. obtusa	nitzschia	seriata	v.obtusa
	N. heimii	nitzschia	heimii	

	N. turgiduloides	nitzschia turgiduloide	
	N. bicapitata	nitzschia bicapitata	
	N. lineola	nitzschia lineola	
	N. closterium v. stiatula	nitzschia closterium	v.striatula
	N. pseudodelicatissima	nitzschia pseudodelica	
	N. granii v. curvata	nitzschia granii	v.curvata
	N. subfraudulenta	nitzschia subfraudulen	
	N. fraudulenta	nitzschia fraudulenta	
	N. impressa	nitzschia impressa	
	(= N. closterium)	* cylindroth closterium	
Bacillariaceae			
	Cylindrotheca fusiformis	cylindroth fusiformis	
Chlorophyta			
Chlorophyceae			
Volvocales			
Chlamydomonadaceae			
	Carteria spp.	carteria spp.	
Chlorococcales			
Coccystaceae			
	Ankistrodesmus spiralis	ankistrode spiralis	
	A. falcatus v. mirabilis	ankistrode falcatus	v.mirabilis
Scenedesmaceae			
	Scenedesmus acuminatus	scenedesmu acuminatus	v.minor
	S. quadricauda v. longispina	scenedesmu quadricauda	v.longispina
Prasinophyta			
Prasinophyceae			
Pyramimonadales			
Nephroselmidaceae			
	Micromonas pusilla	micromonas pusilla	
	Nephroselmis spp.	nephroselm spp.	
	Bipedinomonas spp.	bipedinomo spp.	
Polyblepharidaceae			
	Pyramimonas spp. (3-8 um)	pyramimona spp.	3-8
	Cymbomonas spp.	cymbomonas spp.	
Halosphaerales			
Pterospermataceae			
	Pterosperma spp.	pterosperm spp.	
Halosphaeraceae			
	Halosphaera spp.	halosphaer spp.	

Euglenophyta			
	spp.	euglenophy spp.	
Euglenophyoeae			
Eutreptiales			
	Eutreptia spp.	eutreptia spp.	
	Eutreptiella spp.	eutreptiel spp.	
Pyrrophyta			
Dinophyoeae			
	spp. (5-15 um)	dinophyoea spp.	5-15
	spp. (16-50 um)	dinophyoea spp.	16-50
Prorooentrales			
Prorooentraceae			
	Prorooentrum spp.	prorooentr spp.	
	P. minimum v. mariae-lebouriae	prorooentr minimum	v.mariae-leb
	P. baltioum	prorocentr baltioum	
	P. graoile	prorooentr graoile	
Dinophysiales			
Dinophysiaceae			
	Dinophysis spp	dinophysis spp.	
Gymnodiniales			
Gymnodiniaceae			
	'Gonyaulax' rugosum	gonyaulax rugosum	
	Amphidinium spp.	amphidiniu spp.	
	Cochlodinium spp.	ooohlodini spp.	
	Gymnodiium spp.	gymnodiniu spp.	
	G. vitiligo	gymnodiniu vitiligo	
	G. nelsonii	gymnodiniu nelsonii	
	G. splendens	gymnodiniu splendens	
	G. graoilentum	gymnodiniu graoilentum	
	Gyrodinium spp.	gyrodinium spp.	
	Katodinium rotundatum	katodinium rotundatum	
Ptyohodisoaoeae			
	Ptyohodisous nootiluca	ptyohodiso nootiluoa	
Peridiniales			
Peridiniaoeae			
	Soripsiella spp. and Glenodinium spp.	soripsiell spp.	glenodinium
	Heterooapsa triquetra	heterocaps triquetra	
Gonyaulaceae			
	Gonyaulax spp.	gonyaulax spp.	
	G. oatenella	gonyaulax oatanella	

Ceratiaceae				
	Ceratium spp.	ceratium	spp.	
	C. furca	ceratium	furca	
	C. fusus	ceratium	fusus	
	C. longipes	ceratium	longipes	
	C. tripos	ceratium	tripos	
	C. lineatum	* chaetoceros	lineatum	
Phytodiniales				
Phytodiniaceae				
	Pyrocystis spp.	pyrocystis	spp.	
Chloromonadophyta				
Chloromonadophyceae				
	Heterosigma akashiwo	heterosigm	akashiwo	
Cryptophyta				
Cryptophyceae				
Cryptomonadales				
	spp.	cryptomona	spp.	
	spp. (5-10 um)	cryptomona	spp.	5-10
	spp. (11-20 um)	cryptomona	spp.	11-20
	spp. (21-30 um)	cryptomona	spp.	21-30
	Isoselmis spp. and hemiselmis spp. (4-6 um)	isoselmis	spp.	hemiselmis 4-6
Cryptomonadaceae				
	Cryptomonas ovata	cryptomona	ovata	
FLAGELLATES (autotrophic, unidentified)				
	spp.	flagellate	spp.	
	spp. (1-2 um)	flagellate	spp.	1-2
	spp. (2-5 um)	flagellate	spp.	2-5
	spp. (6-15 um)	flagellate	spp.	6-15
Protozoa				
	Mesodinium rubrum	mesodinium	rubrum	

um = micrometres
syn = synonym
v. = variety
f. = form
cf. = similar to

* In some data records Nitzschia closterium is listed as Cylindrotheca closterium
Ceratium lineatum is incorrectly listed in data records as Chaetoceros lineatum

Cruise 84-02

Total Abundance (no./litre)

Taxon	1-4N	1-9N	3-6	3-9	3-9N
chrysophyc sp.2	2.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cochromonas spp.	9.10E+04	7.85E+04	1.11E+05	7.60E+04	7.80E+04
olisthodis carterae	8.30E+04	2.66E+04	3.80E+04	1.78E+04	6.45E+04
haptophyce spp. naked 2.5-3.5	9.80E+05	9.92E+05	1.28E+06	8.85E+05	7.14E+05
corymbellu aureus	0.00E+00	0.00E+00	1.20E+03	2.50E+03	0.00E+00
chrysochro sp.1	0.00E+00	0.00E+00	3.20E+03	1.70E+03	0.00E+00
chrysochro spp. 4-5.5	2.09E+05	1.62E+05	1.99E+05	1.76E+05	1.51E+05
chrysochro spp. 6-10	5.50E+04	4.55E+04	1.06E+05	7.70E+04	1.27E+04
phaeocysti pouchetii	0.00E+00	0.00E+00	3.10E+03	3.70E+03	0.00E+00
emiliania huxleyi	9.80E+03	6.00E+03	6.40E+03	3.80E+03	5.70E+03
leyanella arenaria	0.00E+00	0.00E+00	1.14E+04	0.00E+00	0.00E+00
thalassios spp.	3.00E+02	7.00E+02	0.00E+00	4.00E+02	2.00E+02
thalassios conferta	2.00E+02	1.00E+02	0.00E+00	0.00E+00	0.00E+00
nitzsohia cylindrus pseudonana	6.00E+03	3.90E+03	4.00E+04	1.72E+04	2.02E+04
nitzsohia lineola	0.00E+00	2.00E+02	4.00E+02	0.00E+00	0.00E+00
nitzsohia closterium v.striatula	1.80E+03	1.00E+02	1.10E+03	3.90E+03	4.80E+03
denticulop semina	3.00E+02	0.00E+00	0.00E+00	6.00E+02	1.00E+02
micromonas pusilla	0.00E+00	6.14E+05	0.00E+00	0.00E+00	0.00E+00
nephroselm spp.	0.00E+00	0.00E+00	4.60E+03	3.10E+03	0.00E+00
prorocentr baltioum	1.00E+03	3.00E+02	9.00E+02	1.20E+03	1.10E+03
gymnodiniu spp.	1.20E+03	4.00E+02	1.00E+03	1.30E+03	1.50E+03
gymnodiniu gracilentum	3.30E+03	1.40E+03	2.70E+03	1.40E+03	2.10E+03
cryptomona spp. 5-10	0.00E+00	0.00E+00	2.00E+02	3.00E+02	0.00E+00
cryptomona spp. 11-20	0.00E+00	0.00E+00	9.00E+02	4.00E+02	3.00E+02

Cruise 84-02

Total Abundance (no./litre)

Taxon	5-4N	5-8N	6-6	6-9A	6-9N
chrysophyc sp.2	0.00E+00	0.00E+00	0.00E+00	7.00E+02	1.00E+02
ochromonas spp.	1.90E+05	1.09E+05	1.50E+05	1.90E+05	2.16E+05
olisthodis carterae	6.85E+04	1.57E+04	6.85E+04	2.44E+04	4.10E+04
meringosph mediterranea	0.00E+00	0.00E+00	1.00E+02	0.00E+00	0.00E+00
haptophyce spp. naked 2.5-3.5	2.16E+06	1.20E+06	1.46E+06	2.09E+06	1.68E+06
corymbellu aureus	0.00E+00	0.00E+00	6.80E+03	9.90E+03	0.00E+00
chrysochro sp.1	2.70E+03	0.00E+00	5.80E+04	3.20E+03	0.00E+00
chrysochro spp. 4-5.5	3.67E+05	2.00E+05	1.76E+05	1.22E+06	4.12E+05
chrysochro spp. 6-10	2.50E+04	1.10E+04	1.42E+04	1.91E+05	1.51E+05
phaeocysti pouchetii	0.00E+00	1.65E+04	2.82E+04	7.70E+03	0.00E+00
emiliania huxleyi	8.20E+03	1.05E+04	2.09E+04	9.30E+03	1.27E+04
leyanella arenaria	3.92E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
corethron criophilum	0.00E+00	0.00E+00	2.00E+02	0.00E+00	0.00E+00
thalassios spp.	0.00E+00	0.00E+00	3.00E+02	4.00E+02	0.00E+00
thalassios conferta	0.00E+00	4.00E+02	0.00E+00	0.00E+00	6.00E+02
rhizosolen alata f.gracillima	0.00E+00	3.00E+02	0.00E+00	0.00E+00	0.00E+00
nitzschia cylindrus pseudonana	1.80E+04	5.30E+04	3.78E+05	2.32E+04	2.22E+04
nitzschia lineola	0.00E+00	1.30E+03	3.00E+02	7.00E+02	3.00E+02
nitzschia closterium v.striatula	2.80E+03	1.00E+03	1.09E+04	2.09E+04	1.80E+04
denticulop semina	0.00E+00	0.00E+00	3.00E+02	4.00E+03	2.70E+03
micromonas pusilla	9.22E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00
nephroselm spp.	0.00E+00	0.00E+00	2.20E+03	1.30E+03	0.00E+00
pyramimona spp. 3-8	0.00E+00	0.00E+00	0.00E+00	1.00E+03	0.00E+00
pterosperm spp.	0.00E+00	0.00E+00	2.00E+02	0.00E+00	0.00E+00
prorocentr balticum	2.60E+03	1.00E+03	1.50E+03	2.70E+03	3.00E+03
gymnodiniu spp.	1.10E+03	4.00E+02	4.30E+03	1.90E+03	1.80E+03
gymnodiniu gracilentum	3.70E+03	4.20E+03	3.40E+03	5.00E+03	5.60E+03
cryptomona spp. 5-10	1.10E+03	4.00E+02	1.00E+03	1.10E+03	2.40E+03
cryptomona spp. 11-20	2.00E+02	1.00E+02	1.50E+03	9.00E+02	4.00E+02

Cruise 84-02

Total Abundance (no./litre)

Taxon	8-7A	8-7N	8-9	11-6A	11-6N
chrysophyc sp.2	0.00E+00	0.00E+00	5.00E+02	0.00E+00	0.00E+00
cochromonas spp.	2.30E+05	1.99E+05	3.78E+05	1.82E+05	1.58E+05
olisthodis carterae	4.80E+04	5.75E+04	1.02E+05	4.44E+04	6.80E+03
haptophyce spp. naked 2.5-3.5	2.10E+06	2.14E+06	3.20E+06	1.97E+06	1.58E+06
corymbellu aureus	1.00E+03	0.00E+00	9.00E+03	2.10E+03	0.00E+00
chrysochro sp.1	1.44E+04	1.48E+04	2.30E+04	6.50E+03	0.00E+00
chrysochro spp. 4-5.5	2.77E+05	2.63E+05	3.70E+05	3.19E+05	3.00E+05
chrysochro spp. 6-10	3.80E+04	4.20E+04	1.98E+04	2.00E+04	2.20E+04
phaeocysti pouchetii	6.00E+03	0.00E+00	4.70E+03	3.80E+03	0.00E+00
emiliania huxleyi	1.86E+04	2.67E+04	5.40E+03	6.10E+03	4.60E+03
thalassios spp.	4.00E+02	3.00E+02	7.00E+02	0.00E+00	0.00E+00
chaetocero peruvianum	0.00E+00	0.00E+00	0.00E+00	2.00E+02	3.00E+02
chaetocero simplex v.calcitrans	0.00E+00	5.00E+02	0.00E+00	0.00E+00	0.00E+00
nitzschia cylindrus pseudonana	3.28E+05	3.51E+05	3.53E+05	1.02E+05	1.27E+05
nitzschia longissima	0.00E+00	0.00E+00	2.00E+02	0.00E+00	0.00E+00
nitzschia closterium v.striatula	8.10E+03	6.40E+03	1.94E+04	4.00E+03	4.80E+03
nephroselm spp.	3.80E+03	0.00E+00	1.70E+03	3.00E+03	0.00E+00
prorocentr balticum	9.00E+02	4.00E+02	6.00E+02	4.00E+02	3.00E+02
gymnodiniu spp.	3.90E+03	4.50E+03	3.30E+03	3.00E+02	5.00E+02
gymnodiniu gracilentum	4.10E+03	4.90E+03	4.30E+03	8.00E+02	1.20E+03
cryptomona spp. 5-10	1.00E+03	7.00E+02	2.30E+03	1.10E+03	1.10E+03
cryptomona spp. 11-20	1.10E+03	1.20E+03	1.40E+03	9.00E+02	7.00E+02

Cruise 84-02

Total Abundance (no./litre)

Taxon	11-9	14-6	14-9
chrysophyc sp.2	0.00E+00	7.00E+02	1.00E+03
ochromonas spp.	2.44E+05	2.49E+05	2.38E+05
olisthodis carterae	3.02E+04	6.85E+04	2.30E+04
meringosph mediterranea	0.00E+00	2.00E+02	4.00E+02
haptophyce spp. naked 2.5-3.5	2.31E+06	2.20E+06	1.71E+06
corymbellu aureus	1.70E+03	1.10E+03	0.00E+00
chrysochro sp.1	1.37E+04	3.38E+04	2.78E+04
chrysochro spp. 4-5.5	3.78E+05	5.35E+05	1.02E+05
chrysochro spp. 6-10	2.96E+04	3.88E+04	1.60E+04
phaeocysti pouchetii	5.10E+03	4.40E+03	6.40E+03
emiliania huxleyi	1.40E+04	3.84E+04	9.25E+04
corethron criophilum	1.00E+02	0.00E+00	0.00E+00
thalassios spp.	0.00E+00	0.00E+00	1.10E+03
thalassios conferta	0.00E+00	1.60E+03	8.00E+02
coscinodis spp.	0.00E+00	2.00E+02	0.00E+00
chaetocero peruvianum	0.00E+00	5.00E+02	1.20E+03
nitzschia cylindrus pseudonana	1.33E+05	9.10E+04	1.23E+06
nitzschia longissima	0.00E+00	3.00E+02	0.00E+00
nitzschia lineola	0.00E+00	1.90E+03	0.00E+00
nitzschia closterium v.striatula	5.40E+03	3.08E+04	4.62E+04
denticulop semina	0.00E+00	0.00E+00	4.00E+02
nephroselm spp.	2.50E+03	2.30E+03	9.00E+02
halosphaer spp.	0.00E+00	1.00E+02	4.00E+02
prorocentr balticum	2.10E+03	9.00E+02	1.60E+03
gymnodiniu spp.	8.00E+02	4.80E+03	3.40E+03
gymnodiniu gracilentum	1.90E+03	4.70E+03	1.85E+04
cryptomona spp. 5-10	7.00E+02	2.00E+03	5.00E+03
cryptomona spp. 11-20	4.00E+02	1.10E+03	4.10E+03

Cruise 84-02

Total Abundance (no./litre)

Taxon	21-7W	21-7X	21-7Y	21-7Z
chrysophyc sp.2	1.00E+02	0.00E+00	2.00E+02	0.00E+00
ochromonas spp.	9.15E+04	8.80E+04	4.95E+04	4.40E+04
olisthodis carterae	1.14E+04	1.35E+04	1.00E+04	1.27E+04
meringosph mediterranea	0.00E+00	0.00E+00	2.00E+02	0.00E+00
haptophyce spp. naked 2.5-3.5	7.20E+05	6.58E+05	5.35E+05	5.99E+05
chrysochro sp.1	4.00E+03	2.40E+03	1.60E+03	1.80E+03
chrysochro spp. 4-5.5	6.25E+04	7.40E+04	9.90E+04	9.00E+04
chrysochro spp. 6-10	4.10E+03	5.70E+03	1.62E+04	1.16E+04
emiliania huxleyi	2.02E+04	1.81E+04	1.80E+03	2.17E+04
thalassios spp.	0.00E+00	4.00E+02	0.00E+00	0.00E+00
thalassios conferta	4.00E+02	5.00E+02	1.00E+03	8.00E+02
coscinodis spp.	4.00E+02	0.00E+00	2.00E+02	5.00E+02
chaetocero peruvianum	4.00E+02	3.00E+02	6.00E+02	4.00E+02
chaetocero simplex v.calcitrans	0.00E+00	0.00E+00	3.00E+02	0.00E+00
nitzschia cylindrus pseudonana	1.51E+05	1.81E+05	2.24E+05	2.18E+05
nitzschia longissima	0.00E+00	0.00E+00	2.00E+02	0.00E+00
nitzschia pungens	2.00E+02	0.00E+00	0.00E+00	0.00E+00
nitzschia lineola	0.00E+00	3.00E+02	5.00E+02	2.00E+02
nitzschia closterium v.striatula	8.00E+03	7.00E+03	5.10E+03	6.00E+03
denticulop semina	2.00E+02	0.00E+00	5.00E+02	7.00E+02
nephroselm spp.	3.60E+03	4.10E+03	0.00E+00	1.10E+03
halosphaer spp.	0.00E+00	0.00E+00	3.00E+02	0.00E+00
prorocentr balticum	5.00E+03	7.20E+03	3.50E+03	6.30E+03
gymnodiniu spp.	2.20E+03	1.60E+03	5.70E+03	4.30E+03
gymnodiniu gracilentum	2.80E+03	5.40E+03	2.70E+03	4.30E+03
cryptomona spp. 5-10	2.00E+02	8.00E+02	1.40E+03	1.10E+03
cryptomona spp. 11-20	9.00E+02	7.00E+02	3.80E+03	4.40E+03

Cruise 84-02

Total Abundance (no./litre)

Taxon	21-9W	21-9X	21-9Y	21-9Z
chrysophyc sp.2	8.00E+02	1.40E+03	0.00E+00	0.00E+00
ochromonas spp.	7.35E+04	6.75E+04	1.01E+05	8.70E+04
olisthodis carterae	6.20E+03	6.50E+03	1.48E+04	1.29E+04
haptophyce spp. naked 2.5-3.5	7.00E+05	6.69E+05	6.80E+05	6.86E+05
chrysochro sp.1	5.00E+03	4.20E+03	2.10E+03	1.60E+03
chrysochro spp. 4-5.5	1.71E+05	2.48E+04	8.20E+04	7.70E+04
chrysochro spp. 6-10	8.80E+03	8.00E+03	8.00E+03	8.60E+03
emiliania huxleyi	1.11E+04	9.00E+03	1.90E+04	2.36E+04
thalassios spp.	4.00E+02	6.00E+02	5.00E+02	3.00E+02
thalassios conferta	3.00E+02	0.00E+00	0.00E+00	0.00E+00
coscinodis spp.	0.00E+00	0.00E+00	0.00E+00	5.00E+02
chaetocero peruvianum	4.00E+02	3.00E+02	0.00E+00	0.00E+00
nitzschia cylindrus pseudonana	2.90E+05	2.49E+05	2.10E+05	1.99E+05
nitzschia longissima	2.00E+02	1.00E+02	0.00E+00	0.00E+00
nitzschia lineola	6.00E+02	4.00E+02	1.60E+03	2.70E+03
nitzschia closterium v.striatula	6.00E+03	8.10E+03	6.60E+03	7.20E+03
nitzschia granii v.curvata	0.00E+00	0.00E+00	2.00E+02	1.00E+02
denticulop semina	1.00E+02	0.00E+00	0.00E+00	0.00E+00
nephroselm spp.	3.20E+03	2.10E+03	1.80E+03	1.00E+03
halosphaer spp.	0.00E+00	0.00E+00	1.00E+02	3.00E+02
prorocentr balticum	2.70E+03	1.80E+03	1.90E+03	2.40E+03
gymnodiniu spp.	2.30E+03	1.70E+03	2.10E+03	2.00E+03
gymnodiniu gracilentum	1.20E+03	1.70E+03	2.60E+03	2.10E+03
cryptomona spp. 5-10	6.00E+02	7.00E+02	0.00E+00	0.00E+00
cryptomona spp. 11-20	2.00E+02	3.00E+02	6.00E+02	8.00E+02

Cruise 84-02

Total Abundance (no./litre)

Taxon	A2-5A	A2-5N	A2-8	E5	E8
chrysophyc sp.2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.00E+02
ochromonas spp.	2.73E+05	2.66E+05	2.69E+05	1.75E+05	3.08E+05
olisthodis carterae	7.55E+04	5.55E+04	5.16E+04	5.70E+04	6.80E+04
meringosph mediterranea	6.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
haptophyce spp. naked 2.5-3.5	2.65E+06	2.39E+06	2.45E+06	1.79E+06	2.66E+06
corymbellu aureus	5.10E+03	3.50E+03	0.00E+00	0.00E+00	2.80E+03
chrysochro sp.1	2.24E+04	1.76E+04	5.00E+03	3.36E+04	7.70E+03
chrysochro spp. 4-5.5	5.82E+05	5.01E+05	3.36E+05	3.00E+05	4.42E+05
chrysochro spp. 6-10	3.94E+04	6.35E+04	1.90E+04	3.40E+04	2.05E+05
phaeocysti pouchetii	1.60E+03	0.00E+00	2.50E+03	7.10E+03	5.10E+03
emiliania huxleyi	2.05E+04	3.06E+04	7.25E+04	2.90E+04	2.95E+04
thalassios spp.	2.00E+02	0.00E+00	0.00E+00	0.00E+00	1.00E+03
chaetocero peruvianum	6.10E+03	4.30E+03	3.00E+03	1.20E+03	1.00E+03
nitzschia cylindrus pseudonana	2.62E+05	2.10E+05	1.55E+05	2.73E+05	4.00E+05
nitzschia lineola	2.30E+03	1.80E+03	2.00E+02	1.40E+03	1.20E+03
nitzschia closterium v.striatula	3.13E+04	2.40E+04	1.54E+04	2.12E+04	1.82E+04
nephroselm spp.	5.00E+03	4.10E+03	0.00E+00	1.80E+03	6.30E+03
pterosperm spp.	0.00E+00	0.00E+00	0.00E+00	8.00E+02	0.00E+00
prorocentr balticum	3.20E+03	3.30E+03	4.10E+03	3.00E+02	1.20E+03
gymnodiniu spp.	1.68E+04	8.80E+03	1.70E+03	1.90E+03	8.00E+02
gymnodiniu gracilentum	5.20E+03	6.00E+03	2.80E+03	9.00E+02	8.00E+02
cryptomona spp. 5-10	8.00E+02	5.00E+02	1.10E+03	6.00E+02	0.00E+00
cryptomona spp. 11-20	0.00E+00	0.00E+00	6.00E+02	1.20E+03	7.00E+02

Cruise 84-02

Total Abundance (no./litre)

Taxon	F2-6	F2-9	K7	K36	K36N
chrysophyc sp.2	0.00E+00	8.00E+02	1.20E+03	1.80E+03	1.50E+03
ochromonas spp.	1.46E+05	3.50E+05	2.60E+05	2.58E+05	2.44E+05
olisthodis carterae	1.19E+05	4.52E+04	1.15E+04	5.70E+04	4.55E+04
meringosph mediterranea	0.00E+00	0.00E+00	0.00E+00	2.00E+02	0.00E+00
haptophyce spp. naked 2.5-3.5	1.51E+06	3.35E+06	2.36E+06	2.30E+06	1.94E+06
corymbellu aureus	1.50E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
chrysochro sp.1	2.26E+04	1.12E+04	4.58E+04	5.68E+04	4.10E+04
chrysochro spp. 4-5.5	4.59E+05	4.96E+05	8.60E+05	5.60E+05	8.78E+05
chrysochro spp. 6-10	2.32E+04	1.12E+05	1.78E+05	5.02E+04	9.00E+04
phaeocysti pouchetii	3.60E+03	9.40E+03	0.00E+00	0.00E+00	0.00E+00
emiliania huxleyi	1.93E+04	2.88E+04	1.63E+04	2.76E+04	3.80E+04
thalassios spp.	0.00E+00	4.00E+02	1.20E+03	1.90E+03	5.00E+02
thalassios conferta	0.00E+00	4.00E+02	0.00E+00	0.00E+00	0.00E+00
chaetocero peruvianum	0.00E+00	1.30E+03	8.00E+02	7.00E+02	2.00E+02
nitzschia cylindrus pseudonana	2.03E+05	3.75E+05	6.36E+05	5.57E+05	1.82E+05
nitzschia pungens	0.00E+00	3.00E+02	0.00E+00	0.00E+00	0.00E+00
nitzschia lineola	0.00E+00	0.00E+00	1.30E+03	3.00E+02	0.00E+00
nitzschia closterium v.striatula	2.49E+04	2.16E+04	2.14E+04	3.54E+04	2.30E+04
nitzschia granii v.curvata	0.00E+00	0.00E+00	0.00E+00	2.00E+02	0.00E+00
denticulop semina	3.00E+02	0.00E+00	0.00E+00	5.00E+02	1.00E+02
nephroselm spp.	0.00E+00	2.40E+03	1.85E+04	6.90E+03	0.00E+00
pterosperm spp.	2.00E+02	7.00E+02	5.00E+02	0.00E+00	0.00E+00
halosphaer spp.	0.00E+00	2.00E+02	0.00E+00	0.00E+00	0.00E+00
prorocentr balticum	0.00E+00	3.60E+03	1.00E+03	1.20E+03	1.60E+03
prorocentr gracile	8.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
gymnodiniu spp.	5.50E+03	4.80E+03	1.30E+04	7.00E+03	6.00E+03
gymnodiniu gracilentum	3.40E+03	1.20E+03	9.50E+03	6.60E+03	5.80E+03
cryptomona spp. 5-10	1.00E+03	0.00E+00	1.10E+03	3.00E+02	4.00E+02
cryptomona spp. 11-20	6.00E+02	8.00E+02	1.90E+03	5.00E+02	5.00E+02

Cruise 84-02

Total Abundance (no./litre)

Taxon	OA	R7	R36	P4
chrysophyc sp.2	0.00E+00	4.00E+02	1.00E+03	0.00E+00
ochromonas spp.	0.00E+00	4.54E+05	4.59E+05	0.00E+00
olisthodis carterae	0.00E+00	5.45E+04	4.56E+04	0.00E+00
haptophyce spp. naked 2.5-3.5	0.00E+00	4.70E+06	3.76E+06	0.00E+00
chrysochro sp.1	0.00E+00	2.00E+02	3.42E+04	0.00E+00
chrysochro spp. 4-5.5	0.00E+00	7.31E+05	5.38E+05	0.00E+00
chrysochro spp. 6-10	0.00E+00	4.40E+04	3.06E+04	0.00E+00
emiliania huxleyi	0.00E+00	4.20E+03	2.95E+04	0.00E+00
thalassios spp.	0.00E+00	4.00E+02	5.00E+02	0.00E+00
thalassios conferta	0.00E+00	5.00E+02	1.20E+03	0.00E+00
chaetocero peruvianum	0.00E+00	1.70E+03	7.00E+02	0.00E+00
nitzschia cylindrus pseudonana	0.00E+00	7.62E+05	7.53E+05	0.00E+00
nitzschia closterium v.striatula	0.00E+00	1.25E+04	1.08E+04	0.00E+00
nitzschia granii v.curvata	0.00E+00	2.00E+02	4.00E+02	0.00E+00
denticulop semina	0.00E+00	0.00E+00	4.00E+02	0.00E+00
nephroselm spp.	0.00E+00	2.70E+04	1.90E+04	0.00E+00
pterosperm spp.	0.00E+00	9.00E+02	0.00E+00	0.00E+00
prorocentr balticum	0.00E+00	1.70E+03	8.00E+02	0.00E+00
gymnodiniu spp.	0.00E+00	1.48E+04	1.27E+04	0.00E+00
gymnodiniu gracilentum	0.00E+00	2.70E+03	9.70E+03	0.00E+00
cryptomona spp. 5-10	0.00E+00	1.70E+03	2.00E+03	0.00E+00
cryptomona spp. 11-20	0.00E+00	7.00E+02	1.30E+03	0.00E+00

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Total Abundance (no./litre)

Taxon	P5A1	P5A2
ochromonas spp.	2.04E+05	1.75E+05
olisthodis carterae	2.20E+03	1.80E+03
haptophyce spp. naked 2.5-3.5	1.72E+06	1.78E+06
chrysochro spp. 4-5.5	3.30E+05	3.11E+05
chrysochro spp. 6-10	1.65E+04	2.10E+04
thalassios spp.	6.00E+02	2.00E+02
thalassios conferta	0.00E+00	3.00E+02
cerataulin pelagica	8.00E+02	3.00E+02
chaetocero compressum	0.00E+00	6.00E+02
chaetocero convolutum	0.00E+00	2.00E+02
chaetocero decipiens	0.00E+00	6.00E+02
chaetocero peruvianum	2.90E+03	6.00E+02
rhizosolen alata f.gracillima	1.04E+04	2.40E+03
rhizosolen fragilissima	7.00E+02	2.00E+02
rhizosolen stolterfothi	2.80E+03	3.60E+03
rhizosolen styliformis v.styliformi	1.80E+03	0.00E+00
licmophora abbreviata	2.00E+03	2.60E+03
nitzschia cylindrus pseudonana	3.42E+04	2.80E+04
nitzschia closterium v.striatula	4.80E+03	5.40E+03
pterosperm spp.	0.00E+00	3.00E+02
halosphaer spp.	0.00E+00	2.00E+02
gymnodiniu spp.	2.10E+03	3.10E+03
cryptomona spp. 5-10	3.48E+04	3.00E+04
cryptomona spp. 11-20	8.00E+02	1.20E+03

DATA SECTON 6

Zooplankton taxonomic list, abundance data and sample identification

ZOOPLANKTON TAXONOMIC LIST (WITH ABBREVIATIONS USED IN DATA RECORDS)

		Abbreviations in data records		
Pyrrophyta				
Dinophyceae				
Peridiniales				
Noctilucaceae				
	Noctiluca spp.	noctiluca	spp.	
Sarcodina				
Actinopodea				
Radiolaria				
	Unidentified	sar:act:ra	radiolaria	
Cnidaria				
Hydrozoa				
	Unidentified (medusae)	medusae	unidentified	
	Unidentified (medusae, juvenile)	medusae	juvenile	unidentified
Hydroida				
Corynidae				
	Sarsia sp.	sarsia	sp.	
Leptomedusae				
	Aequorea spp.	aequorea	spp.	
	Phialidium sp.	phialidium	sp.	
Limnomedusae				
	Proboscidactyla sp.	proboscida	sp.	
Trachylida				
Trachymedusae				
	Aglantha sp.	aglantha	sp.	
Narcomedusae				
	Aegina sp.	aegina	sp.	
Siphonophora				
	Unidentified (planula)	siphonopho	planula	
	Unidentified (pneumatophore)	siphonopho	pneumatoph	
	Unidentified (nectophore bracts)	nectophore	bracts	
Ctenophora				
Tentaculata				
Cydippida				
Pleurobrachiidae				
	Unidentified (juvenile)	pleurobran	juvenile	
	Pleurobrachia sp.	pleurobrac	sp.	
Nuda				
Beroida				
	Beroe spp.	beroe	spp.	

Annelida				
Polychaeta				
	Unidentified (larvae)	polychaeta	larvae	
Tomopteridae				
	Tomopteris septentrionalis	tomopteris	septentriona	
Mollusca				
Gastropoda				
Pteropoda				
	Unidentified	pteropod	unidentified	
	Unidentified (large, triangular)	pteropod	big	triangle
	Unidentified (small, triangular)	pteropod	small	triangle
	Peraclis sp.	peraclis	sp.	
Thecosomata				
Limacinidae				
	Limacina sp. (1)	limacina	sp.	
	Limacina sp. (2: large)	limacina	large	
Cymbuliidae				
	Unidentified	gastropoda	cymbulidae	
Gymnosomata				
Clionidae				
	Clione sp.	clione	sp.	
Bivalvia				
	Unidentified (larvae)	bivalva	larva	
Cephalopoda				
	Unidentified	mollusca	cephalopod	
Coleoidea				
(squid)				
	Unidentified (juvenile)	squid	juvenile	
Octopoda				
	Unidentified (juvenile)	octopod	juvenile	
Arthropoda				
Crustacea				
Branchiopoda				
Cladocera				
Polyphemidae				
	Evadne sp.	evadne	sp.	
	Podon sp.	podon	sp.	
Ostracoda				
Myodocopa				
Conchoaeidae				
	Cochoecia sp.	conchoecia	sp.	

Copepoda			
	Unidentified	crust:cope	unidentified
	Unidentified nauplii	copepod	nauplii
Calanoida			
	Unknown sp. (1)	calanoida	calanoi(1)
	Unknown sp. (2)	calanoida	calanoi(2)
	Aetidius armatus	aetidius	armatus
	Acartia californiens	acartia	californiens
	A. clausii	acartia	clausii
	A. danae	acartia	danae
	A. longiremis	acartia	longiremis
	Bradyidius sp.	bradyidius	sp.
	Calanus sp.	calanus	sp.
	C. marshallae	calanus	marshallae
	C. pacificus	calanus	pacificus
	C. marshallae/pacificus	calanus	marsha/pacif
	Candacia sp.	candacia	sp.
	C. bipinnata	candacia	bipinnata
	C. columbiae	candacia	columbiae
	Centraugaptilus macrodus	centraugap	macrodus
	Centropages abdominalis	centropage	abdominalis
	Chiridius gracilis	chiridius	gracilis
	Clausocalanus lividus (sp. 1)	clausocala	sp.
	C. parapergens (sp. 2)	clausocala	sp. (2)
	Ctenocalanus vanus	ctenocalan	vanus
	Epilabidocera sp.	epilabidoc	sp.
	E. amphitrite	epilabidoc	amphitrite
	Eucalanus bungi	eucalanus	bungi
	Euchaeta sp.	euchaeta	sp.
	E. japonica (= E. elongata)	euchaeta	japonica
	E. media	euchaeta	media
	E. sp. (large)	euchaeta	(big)
	Euchirella sp.	euchirella	sp.
	E. pseudopulchra	euchirella	pseudopulchra
	E. rostrata	euchirella	rostrata
	Gaetanus sp.	gaetanus	sp.
	Gaidius columbiae	gaidius	columbiae
	G. variabilis	gaidius	variablis
	Haloptilus pseudooxycephalus	haloptilus	pseudooxycep
	Heterohabdus sp. (1)	heterohabd	sp.
	H. sp. (2)	heterohabd	sp.(2)
	H. sp. (3)	heterohabd	sp.(3)
	H. tanneri	heterohabd	tanneri
	Heterostylites sp.	heterostyl	sp.
	Lophothrix sp.	lophothrix	sp.
	L. frontalis	lophothrix	frontalis
	Lucicutia sp.	lucicutia	sp.
	L. ovalis	lucicutia	ovalis
	Mesocalanus tenuicornis (ex. Calanus)	calanus	tenuicornis
	Metridia sp.	metridia	sp.
	M. okhotensis	metridia	okhotensis
	M. pacifica	metridia	pacifica
	Microcalanus sp.	microcalan	sp.

	Neocalanus spp.	neocalanus	spp.	
	N. cristatus	neocalanus	cristatus	
	N. plumchrus	neocalanus	plumchrus	
	N. plumchrus var. 1/2	neocalanus	plumchrus var.1/2	
	N. flemingeri	neocalanus	plumchrus var.2	
	Paracalanus sp.	paracalanu	sp.	
	Paraeuchaeta glacialis	paraeuchae	glacialis	
	P. spinifera	paraeuchae	spinifera	
	Pleuromamma sp. (1)	pleuromamm	sp.	
	P. sp. (2)	pleuromamm	sp.(2)	
	P. sp. (3)	pleuromamm	sp.(3)	
	P. scutullata	pleuromamm	scutullata	
	Pseudocalanus sp.	pseudocala	sp.	
	Racovitzanus antarcticus	racovitzan	antarcticus	
	Scaphocalanus sp.	scaphocala	sp.	
	S. brevicornis	scaphocala	brevicornis	
	S. magnus	scaphocala	magnus	
	Scolecithricella minor	scolecithr	minor	
	Scottocalanus sp.	scottocala	sp.	
	Spinocalanus sp.	spinocalan	sp.	
	S. brevicaudatus	spinocalan	brevicaudatu	
	Tortanus discaudatus	tortanus	discaudatus	
	Undinella sp.	undinella	sp.	
Harpacticoida				
	Aegisthus sp.	aegisthus	sp.	
	Microsetella spp.	microsetel	spp.	
Cyclopoida				
	Corycaeus sp.	corycaeus	sp.	
	Oithona helgolandica	oithona	helgolandica	
	O. spinirostris	oithona	spinirostris	
	Oncaea sp.	oncaea	sp.	
Cirripedia				
Thoracica				
Balanomorpha				
Balanidae				
	Unidentified (nauplii)	barnacle	nauplii	
	Unidentified (cyprids)	barnacle	cyprids	
Cumacea				
	Unidentified	crust:mala	cumacea	
Isopoda				
Cryptoniscidae				
	Unidentified	crust:mala	isopoda	cryptoniscid
Amphipoda				
	Unidentified sp. (1)	amphipoda	unidentified	
	Unidentified sp. (2: shovel-head)	amphipoda	shovel_head	
	Unidentified (juveniles)	amphipoda	unidentified	juveniles

Gammaridea				
	Unidentified sp.	amphi:gamm	gammari(1)	
	Calliopius sp.	calliopius	sp.	
	Cyphocaris sp.	cyphocaris	sp.	
	Melphidippa sp.	melphidipp	sp.	
	Orchomenella sp.	orchomenel	sp.	
Hyperiidea				
	Unidentified sp.	amphi:hype	hyperii(1)	
	Euprimno sp.	euprimno	sp.	
	Hyperia sp.	hyperia	sp.	
	Parathemisto sp.	parathemis	sp.	
	Phronima spp.	phronima	spp.	
	Scina sp.	scina	sp.	
Peracarida				
Mysidacea				
	Unidentified	pera:mysid	mysid	
Eucarida				
Euphausiacea				
	Unidentified	euphausid	unidentified	
	Unidentified (juveniles)	crust:mala	euphausiac	juveniles
	Unidentified (larvae)	euphausid	larva	
	Euphausia pacifica	euphausia	pacifica	
	Nematoscelis sp.	nematoscel	sp.	
	Tessarabrachion oculatus	tessarabra	oculatus	
	Thysanoessa longipes	thysanoess	longipes	
	T. raschii	thysanoess	raschii	
	T. spinifera	thysanoess	spinifera	
	T. inspinata	thysanoess	inspinata	
Decapoda				
	Unidentified (larvae)	decapod	larva	
Natantia				
	Unidentified spp.	deca:natan	natantia	
Galatheidae				
	Munida sp. (larvae)	galatheoid	munida	larva
Chaetognatha				
	Unidentified	chaetognat	unidentified	
	Unidentified (juveniles)	chaetognat	unidentified	juveniles
	Eukrohnia hamata	eukrohnia	hamata	
	Sagitta elegens	sagitta	elegens	
	S. scrippsae	sagitta	scrippsae	

Chordata			
Urochordata			
Thaliacea			
Salpida			
	Unidentified spp.	chord:uroc	thali:salp
Appendicularia			
	Unidentified spp.	larvacean	larvaceans
Gnathostomata			
	Unidentified (eggs)	vert:fish	eggs
	Unidentified (larvae)	vert:fish	larvae
Unclassified/unknown taxa			
	Unidentified nauplii	nauplius	unidentified
	Unidentified eggs	unidentifi	eggs
	Cyphonaute larvae (Bryozoan)	cyphonaute	larva
	Echinopluteus larvae (Echinoderm et al.)	echinoplut	larvae
	Trochophore larvae (Mollusc/Annelid et al.)	trochophor	larva
	Funny thing	"funny	thing"

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Total Abundance (no./m**3)

Taxon	1-1	1-2	1-3	1-4	1-5
parathemis sp.	0.3	0.1	0.1	0.0	0.2
euprimno sp.	0.1	0.1	0.0	0.0	0.0
chaetognat unidentified juveniles	1.5	4.6	2.4	1.8	3.7
sagitta elegans	0.2	0.4	0.1	0.1	0.1
eukrohnia hamata	3.9	4.0	1.6	1.4	11.8
copepod nauplii	0.0	0.1	0.3	0.0	0.0
euphausid larva	3.2	0.2	0.0	7.7	29.3
decapod larva	0.0	0.0	0.0	0.3	0.0
amphipoda unidentified juveniles	2.2	0.2	0.0	1.4	1.5
larvacean larvaceans	2.0	1.9	2.6	1.4	1.5
aglantha sp.	0.6	0.0	9.3	3.1	0.5
conchoecia sp.	5.9	10.5	7.6	4.9	0.0
nectophore bracts	0.7	0.5	1.8	1.7	0.8
calanus sp. s1/2	0.0	0.0	0.0	0.7	0.0
calanus tenuicornis .le.s4	0.0	0.0	0.0	0.0	0.8
eucalanus bungi s3	2.2	1.0	0.3	0.7	1.5
eucalanus bungi s4	5.4	4.1	6.6	14.6	22.5
eucalanus bungi s5m	5.9	3.4	4.5	5.6	28.5
eucalanus bungi s5f	5.9	1.4	5.5	4.5	26.2
eucalanus bungi s6m	1.0	1.9	0.5	0.7	0.0
eucalanus bungi s6f	3.1	1.3	3.2	5.8	3.8
euchaeta japonica s1/2	0.0	0.3	0.0	0.0	0.0
euchaeta japonica s3	0.2	0.0	0.5	0.0	0.0
euchaeta japonica s4	0.0	0.0	0.3	0.0	0.0
euchaeta japonica s5m	0.1	0.1	0.0	0.0	0.0
euchaeta japonica s5f	0.1	0.1	0.0	0.0	0.0
euchaeta japonica s6m	0.1	0.1	0.0	0.0	0.0
euchaeta japonica s6f	0.2	0.2	0.0	0.0	0.1
metridia sp. .le.s3	6.4	9.7	44.9	15.6	6.0
metridia sp. s4	1.5	4.1	14.5	17.4	1.5
metridia pacifica s5m	3.7	0.8	5.5	7.6	2.3
metridia pacifica s5f	0.7	0.3	1.6	1.7	2.3
metridia pacifica s6m	0.5	0.4	0.0	0.7	0.0
metridia pacifica s6f	4.4	1.5	6.8	21.8	9.0
neocalanus cristatus s1	0.0	0.3	0.3	0.0	2.2

neocalanus cristatus s2	0.0	0.0	0.0	0.5	2.2
neocalanus cristatus s3	0.2	0.0	0.5	0.3	6.0
neocalanus cristatus s4	0.7	0.4	4.7	1.4	10.1
neocalanus cristatus s5	2.7	5.6	1.3	0.4	0.8
neocalanus plumchrus s4	17.2	0.0	1.8	1.4	20.3
neocalanus plumchrus s5	8.7	0.0	0.9	1.0	0.0
oithona helgolanoica	3.2	0.0	2.9	8.0	64.5
oithona spinirostris	4.9	0.1	4.5	20.2	88.5
pseudocala sp. .le.s3	0.7	0.0	0.0	0.0	0.8
pseudocala sp. s4	4.9	0.0	0.0	0.0	1.5
pseudocala sp. s5m	1.0	0.0	0.0	0.7	0.0
pseudocala sp. s5f	1.5	0.0	0.0	0.0	1.5
pseudocala sp. s6m	0.0	0.0	0.0	0.0	1.5
pseudocala sp. s6f	8.6	0.0	0.5	0.7	3.8
scolecithr minor .le.s4	0.5	0.1	0.8	2.8	3.0
scolecithr minor s5	1.0	0.0	0.5	1.4	4.5
scolecithr minor s6m	0.2	0.0	0.0	0.7	0.8
scolecithr minor s6f	0.5	0.2	0.5	3.5	3.0
aegisthus sp.	0.0	0.0	0.3	0.0	0.0
aetideus armatus s6f	0.0	0.0	1.3	0.0	0.0
aetideus armatus s6m	0.0	0.1	0.0	0.0	0.0
mollusca bivalva larva	0.0	0.0	0.0	0.3	0.0
candacia columbiae s6f	0.0	0.1	0.0	0.0	0.0
candacia columbiae s6m	0.1	0.1	0.0	0.0	0.0
clione sp.	1.2	0.7	15.8	2.4	0.8
corycaeus sp.	0.0	0.1	0.3	0.0	1.5
crust:mala isopoda cryptoniscid	0.0	0.3	0.0	0.0	0.0
vert:fish larvae	0.1	0.1	0.1	0.0	0.0
gaetanus sp. .le.s4	0.7	1.9	0.0	0.0	0.0
heterorhab tanneri s6f	0.0	0.2	0.0	0.0	0.0
heterorhab tanneri s6m	0.0	0.1	0.0	0.0	0.0
lucicutia sp. .le.s4	0.0	0.0	0.0	0.0	1.5
lucicutia sp. s5	0.0	0.0	0.0	0.0	0.8
microcalan sp. s5	1.2	0.1	3.7	6.9	6.0
microcalan sp. .le.s4	0.0	0.0	0.3	0.3	1.5
microcalan sp. s6f	0.0	0.3	0.0	0.0	0.0
nematoscel sp.	0.0	0.1	0.0	0.0	0.0
oncaea sp.	1.2	0.6	0.0	2.1	9.7
annelida polychaeta larvae	0.5	0.0	0.3	0.0	0.0
racovitzan antarcticus s6f	0.2	0.8	1.3	0.0	0.0
racovitzan antarcticus s5	1.2	0.3	0.0	0.0	0.0
racovitzan antarcticus .le.s4	0.0	0.9	0.0	0.0	0.0
sagitta scrippsae	0.0	0.1	0.0	0.0	0.0
chord:uroc thali:salp	0.7	0.0	0.0	0.1	0.0
tomopteris septentriona	0.1	0.1	0.1	0.5	0.0
arthropoda crust:cope unidentified	0.0	0.8	0.0	2.1	0.0
limacina sp.	0.2	0.0	2.4	4.2	6.7
decapoda squid juvenile	0.0	0.1	0.0	0.1	0.0
neocalanus plumchrus var.1/2 1/2	3.7	0.0	0.0	0.0	2.2

neocalanus plumchrus var.1/2 3	10.1	0.0	0.0	0.0	15.8
neocalanus plumchrus var.2 3	0.0	0.0	0.0	0.0	0.0
neocalanus plumchrus var.2 4	0.0	0.0	0.0	0.0	0.0
neocalanus plumchrus var.2 5	19.4	0.8	1.1	0.7	2.2
"funny thing"	1.0	0.7	6.0	0.3	0.0
heterostyl sp. 6f	0.1	0.0	0.0	0.0	0.0
amphipoda shovel_head	0.1	0.0	0.0	0.0	0.0

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Total Abundance (no./m**3)

Taxon	1-6	1-7
parathemis sp.	0.5	0.0
chaetognat unidentified juveniles	2.0	1.0
sagitta elegans	0.9	0.1
eukrohnia hamata	11.6	0.2
euphausid larva	17.9	0.0
amphipoda unidentified juveniles	2.0	0.0
larvacean larvaceans	0.0	0.8
aglantha sp.	0.6	0.2
calanus pacifious .le.s5	0.0	0.8
eucalanus bungi s3	0.5	0.2
eucalanus bungi s4	4.5	0.4
eucalanus bungi s5m	5.5	0.2
eucalanus bungi s5f	6.0	0.4
eucalanus bungi s6m	0.5	0.0
metridia sp. .le.s3	29.8	2.3
metridia sp. s4	13.9	0.0
metridia pacifica s5m	41.8	0.0
metridia pacifica s5f	2.0	0.0
neocalanus cristatus s3	0.1	0.0
neocalanus cristatus s5	1.6	0.2
neocalanus plumchrus s4	111.4	41.9
neocalanus plumchrus s5	105.4	45.7
oithona helgolanoica	29.8	10.7
oithona spinirostris	6.0	0.0
pseudocala sp. .le.s3	9.9	1.5
pseudocala sp. s4	37.8	16.8
pseudocala sp. s5m	31.8	13.0
pseudocala sp. s5f	21.9	7.6
pseudocala sp. s6m	19.9	4.6
pseudocala sp. s6f	200.9	25.9
scolecithr minor s5	2.0	0.0
clausocala sp. s6f	6.0	0.0
clausocala sp. s6m	21.9	0.0
clausocala sp. s5	8.0	0.0
clausocala sp. .le.s4	4.0	0.0

olione sp.	13.9	4.6
oncaea sp.	29.8	0.8
annelida polychaeta larvae	2.1	0.0
racovitzan antarcticus s5	0.0	0.8
arthropoda crust:cope unidentified	17.9	4.6
limacina sp.	15.9	14.5
neocalanus plumchrus var.1/2 1/2	35.8	32.0
neocalanus plumchrus var.1/2 3	41.8	37.4
neocalanus plumchrus var.2 4	2.0	0.8
neocalanus plumchrus var.2 5	35.8	83.1
"funny thing"	2.0	0.0

Cruise 84-02

Total Abundance (no./m**3)

Taxon	3-1	3-2	3-3	3-4	3-5
parathemis sp.	0.3	0.4	0.1	0.0	1.3
euprimno sp.	0.0	0.1	0.0	0.0	0.0
chaetognat unidentified juveniles	3.5	3.4	0.0	1.1	1.9
sagitta elegans	1.2	0.1	0.0	0.0	0.2
eukrohnia hamata	2.4	1.7	2.3	14.6	26.7
unidentifi eggs	0.0	6.5	0.0	0.0	0.0
euphausid larva	2.4	0.0	8.3	18.6	10.4
amphipoda unidentified juveniles	0.0	0.1	1.0	1.4	1.3
larvacean larvaceans	5.1	0.0	5.2	17.8	11.7
aglantha sp.	0.1	0.7	0.0	0.3	0.1
proboscida sp.	0.0	0.0	0.8	0.0	0.0
conohoecia sp.	4.2	8.8	6.2	2.6	0.0
nectophore bracts	1.3	0.8	2.1	0.3	0.0
calanus tenuicornis s6f	0.4	0.0	0.0	0.0	0.0
eucalanus bungi s3	1.1	0.9	1.9	0.0	0.0
eucalanus bungi s4	5.3	4.2	6.0	8.0	11.7
eucalanus bungi s5m	2.4	1.2	2.2	4.6	14.3
eucalanus bungi s5f	2.7	1.6	2.3	6.0	11.3
eucalanus bungi s6m	0.0	0.6	0.3	0.0	0.0
eucalanus bungi s6f	1.7	1.2	2.4	6.2	4.9
euchaeta japonica s3	0.0	0.0	0.1	0.0	0.0
euchaeta japonica s4	0.0	0.1	0.0	0.0	0.0
euchaeta japonica s6m	0.1	0.0	0.0	0.0	0.0
euchaeta japonica s6f	0.1	0.1	0.0	0.0	0.0
metridia sp. .le.s3	13.5	11.2	103.5	15.2	36.4
metridia sp. s4	3.3	5.8	28.6	1.7	1.3
metridia pacifica s5m	8.6	2.1	21.9	4.9	40.3
metridia pacifica s5f	4.4	2.1	12.5	1.1	13.0
metridia pacifica s6f	2.4	1.3	15.6	0.6	0.0
neocalanus cristatus s1	0.0	0.0	0.0	0.3	0.0
neocalanus cristatus s2	0.9	0.0	0.0	0.3	0.0
neocalanus cristatus s3	0.2	0.0	0.4	1.1	0.0
neocalanus cristatus s4	2.7	0.3	2.7	6.9	0.0
neocalanus cristatus s5	1.7	3.8	1.6	3.3	0.3
neocalanus cristatus s6m	0.2	0.0	0.0	0.0	0.0

neocalanus plumchrus s4	8.8	0.0	0.0	25.2	91.0
neocalanus plumchrus s5	5.7	0.0	0.1	1.4	42.9
oithona helgolanoica	10.2	0.9	19.2	44.7	214.4
oithona spinirostris	1.5	0.1	14.5	10.3	1.3
pseudocala sp. .le.s3	1.1	0.0	0.0	0.0	0.0
pseudocala sp. s4	5.1	0.0	0.0	0.0	13.0
pseudocala sp. s5m	0.7	0.0	0.0	0.0	13.0
pseudocala sp. s5f	1.3	0.0	0.0	1.7	6.5
pseudocala sp. s6m	0.7	0.0	0.0	0.3	9.1
pseudocala sp. s6f	3.5	0.0	0.0	0.6	18.2
scolecithr minor .le.s4	0.0	0.4	1.0	1.1	0.0
scolecithr minor s5	0.0	0.0	1.0	0.3	1.3
scolecithr minor s6m	0.0	0.0	0.5	0.0	1.3
scolecithr minor s6f	0.7	0.1	3.6	1.4	1.3
aetideus armatus s5	0.0	0.1	0.0	0.0	0.0
candacia columbiae .le.s4	0.2	0.1	0.0	0.0	0.0
clausocala sp. s6f	0.0	0.0	0.0	0.9	3.9
clausocala sp. s5	0.0	0.0	0.0	0.0	3.9
clausocala sp. .le.s4	0.0	0.0	0.0	0.0	2.6
clione sp.	0.7	1.4	7.3	0.9	3.9
corycaeus sp.	0.0	0.0	0.0	0.6	0.0
crust:mala isopoda cryptonisoid	0.2	0.1	0.5	0.3	0.0
vert:fish larvae	0.1	0.0	0.0	0.0	0.0
gaetanus sp. .le.s4	0.7	0.9	0.0	0.0	0.0
heterorhab tanneri s6f	0.0	0.1	0.0	0.0	0.0
microcalan sp. s5	0.9	0.5	6.2	2.3	0.0
microcalan sp. .le.s4	0.0	0.1	0.0	0.3	0.0
microcalan sp. s6f	0.2	0.5	0.5	0.0	0.0
microcalan sp. s6m	0.0	0.0	0.5	0.0	0.0
nematoscel sp.	0.0	0.1	0.1	0.0	0.0
oncaea sp.	0.2	0.0	1.0	5.2	1.3
annelida polychaeta larvae	0.2	0.0	0.0	0.0	1.3
racovitzan antarctious s6f	0.4	0.4	0.0	0.0	0.0
racovitzan antarctious s5	0.0	0.1	0.0	0.0	0.0
sagitta scrippsae	0.0	0.1	0.0	0.0	0.0
chord:uroc thali:salp	0.2	0.5	0.0	2.7	0.0
tomopteris septentriona	0.2	0.1	0.1	0.0	0.0
arthropoda crust:cope unidentified	0.0	0.9	0.5	0.0	5.2
limacina sp.	0.9	0.1	1.0	7.5	22.1
phronima spp.	0.1	0.0	0.0	0.0	0.0
neocalanus plumchrus var.1/2 1/2	3.8	0.3	3.1	2.9	22.3
neocalanus plumchrus var.1/2 3	9.3	0.0	0.0	17.8	68.9
neocalanus plumchrus var.2 4	0.2	0.0	0.0	0.0	0.0
neocalanus plumchrus var.2 5	14.4	0.6	1.6	3.2	71.4
"funny thing"	0.2	1.3	2.1	0.3	0.0
amphipoda shovel_head	0.1	0.0	0.0	0.0	0.0

Cruise 84-02

Total Abundance (no./m**3)

Taxon	3-6	3-7
parathemis sp.	0.5	0.0
chaetognat unidentified juveniles	0.5	0.6
sagitta elegans	1.2	0.0
eukrohnia hamata	0.4	0.1
euphausid larva	2.1	0.5
amphipoda unidentified juveniles	0.0	0.5
nectophore bracts	0.5	0.0
acartia longiremis s6f	2.1	0.0
calanus pacificus .le.s5	0.0	0.5
eucalanus bungi s3	0.0	0.5
eucalanus bungi s4	1.0	0.5
eucalanus bungi s5m	1.0	0.3
eucalanus bungi s5f	1.0	0.8
eucalanus bungi s6f	0.0	0.5
metridia sp. .le.s3	21.2	2.5
metridia sp. s4	0.0	0.5
metridia pacifica s5m	16.9	0.5
metridia pacifica s5f	4.2	0.5
metridia pacifica s6f	0.0	0.5
neocalanus cristatus s5	0.1	0.1
neocalanus plumchrus s4	59.3	30.0
neocalanus plumchrus s5	65.6	12.0
oithona helgolanoica	465.8	213.4
oithona spinirostris	0.0	1.5
pseudocala sp. .le.s3	19.1	10.5
pseudocala sp. s4	59.3	12.0
pseudocala sp. s5m	25.4	12.0
pseudocala sp. s5f	16.9	5.0
pseudocala sp. s6m	14.8	0.5
pseudocala sp. s6f	65.6	7.5
clausocala sp. s6f	2.1	0.5
clausocala sp. .le.s4	0.0	0.5
clione sp.	4.2	1.5
microcalan sp. s5	0.0	0.5
arthropoda crust:cope unidentified	0.0	1.5

limacina sp.	19.1	22.5
neocalanus plumchrus var.1/2 1/2	61.4	76.9
neocalanus plumchrus var.1/2 3	53.0	57.4
neocalanus plumchrus var.2 4	0.0	2.0
neocalanus plumchrus var.2 5	152.4	49.4

Cruise 84-02

Total Abundance (no./m**3)

Taxon	5-1	5-2	5-3	5-4	5-5
parathemis sp.	0.6	0.3	0.1	0.1	1.2
euprimno sp.	0.1	0.1	0.0	0.0	0.0
cyphocaris sp.	0.1	0.0	0.0	0.0	0.0
chaetognat unidentified juveniles	1.6	1.0	1.9	3.1	2.1
sagitta elegans	0.1	0.1	0.1	0.0	0.3
eukrohnia hamata	4.2	1.8	2.3	6.6	14.4
copepod nauplii	0.0	0.0	0.3	0.0	0.0
euphausid larva	3.3	0.2	7.5	24.5	23.3
amphipoda unidentified juveniles	0.2	0.2	0.0	0.2	1.3
euphausia pacifica	0.1	0.0	0.0	0.0	0.0
larvacean larvaceans	0.9	0.1	0.3	0.5	0.0
aglantha sp.	0.4	0.0	0.3	0.7	0.3
conchoecia sp.	9.8	3.5	2.5	1.4	2.5
nectophore bracts	1.4	0.3	1.7	0.0	0.0
acartia longiremis s6f	0.0	0.0	0.0	0.0	0.5
calanus pacifious .le.s5	0.2	0.0	0.0	0.0	0.0
calanus tenuicornis s5	0.2	0.0	0.6	1.4	0.0
calanus tenuicornis s6m	0.0	0.0	0.3	0.0	0.0
calanus tenuicornis s6f	0.0	0.0	0.3	0.0	0.0
eucalanus bungi s3	2.1	1.0	2.2	4.1	0.5
eucalanus bungi s4	10.3	2.0	9.2	20.4	27.4
eucalanus bungi s5m	6.3	1.1	6.7	4.5	13.7
eucalanus bungi s5f	6.1	0.7	8.3	9.5	12.2
eucalanus bungi s6m	0.7	0.2	0.0	0.0	0.0
eucalanus bungi s6f	3.8	1.1	5.1	4.5	6.9
euchaeta japonica s1/2	0.0	0.1	0.3	0.0	0.0
euchaeta japonica s4	0.0	0.1	0.0	0.0	0.0
euchaeta japonica s5m	0.1	0.1	0.0	0.0	0.0
euchaeta japonica s5f	0.1	0.1	0.0	0.0	0.0
euchaeta japonica s6m	0.1	0.1	0.0	0.0	0.0
euchaeta japonica s6f	0.1	0.2	0.0	0.0	0.0
metridia sp. .le.s3	7.7	8.5	78.3	27.3	9.1
metridia sp. s4	4.7	2.8	12.5	5.9	0.0
metridia pacifica s5m	11.0	4.1	25.3	28.2	4.1
metridia pacifica s5f	4.9	1.8	10.3	8.2	2.0

metridia pacifica s6m	0.0	0.1	0.0	0.0	0.0
metridia pacifica s6f	6.1	1.3	2.2	4.1	7.6
neocalanus cristatus s1	0.7	0.0	0.0	5.9	2.1
neocalanus cristatus s2	0.2	0.0	0.0	0.0	0.5
neocalanus cristatus s3	0.0	0.0	0.3	2.7	12.2
neocalanus cristatus s4	2.8	0.7	6.1	5.8	16.0
neocalanus cristatus s5	3.6	2.2	3.8	0.5	3.1
neocalanus plumchrus s4	17.7	0.1	0.3	0.4	33.5
neocalanus plumchrus s5	15.6	0.2	1.1	2.0	24.9
oithona helgolanoica	0.7	0.5	16.4	43.6	44.1
oithona spinirostris	4.0	0.2	22.8	91.3	19.8
pseudocala sp. .le.s3	0.7	0.0	0.0	0.0	0.0
pseudocala sp. s4	6.8	0.0	0.0	0.0	3.6
pseudocala sp. s5m	2.3	0.0	0.0	0.0	2.0
pseudocala sp. s5f	2.6	0.0	0.6	0.0	4.6
pseudocala sp. s6m	0.2	0.1	0.0	0.9	1.0
pseudocala sp. s6f	11.2	0.1	0.0	2.7	5.6
scolecithr minor .le.s4	1.2	0.1	0.8	13.2	5.1
scolecithr minor s5	1.2	0.1	1.1	6.4	2.0
scolecithr minor s6m	0.2	0.0	0.6	0.0	0.5
scolecithr minor s6f	2.3	0.2	1.1	4.1	0.5
aetideus armatus s6f	0.0	0.2	0.0	0.0	0.0
aetideus armatus s5	0.2	0.0	0.0	0.0	0.0
candacia columbiae s6f	0.2	0.1	0.0	0.0	0.0
candacia columbiae s6m	0.0	0.1	0.0	0.0	0.0
candacia columbiae .le.s4	0.0	0.7	0.0	0.0	0.0
clausocala sp. s6f	0.0	0.0	0.0	0.5	0.0
clione sp.	1.2	0.3	15.3	1.4	0.5
crust:mala isopoda cryptoniscid	0.0	0.0	1.1	0.0	0.0
gaetanus sp. .le.s4	0.7	0.5	0.0	0.0	0.0
heterorhab sp. s5	0.0	0.0	0.3	0.0	0.0
heterorhab tanneri s6f	0.2	0.1	0.0	0.0	0.0
microcalan sp. s5	1.2	0.3	5.3	5.0	0.5
microcalan sp. s6f	0.0	0.1	0.0	0.0	0.0
nematoscel sp.	0.1	0.0	0.2	0.0	0.0
oncaea sp.	0.7	0.2	0.6	3.6	1.0
racovitzan antarcticus s6f	0.7	0.6	0.0	0.0	0.0
racovitzan antarcticus s5	0.7	0.1	0.0	0.0	0.0
racovitzan antarcticus .le.s4	0.0	0.1	0.0	0.0	0.0
sagitta scrippsae	0.0	0.1	0.0	0.0	0.0
chord:uroc thali:salp	0.2	0.3	0.0	0.0	0.1
tomopteris septentriona	0.1	0.1	0.3	0.1	0.0
arthropoda crust:cope unidentified	0.0	0.5	0.0	0.0	0.0
limacina sp.	1.6	0.0	1.7	3.6	19.3
decapoda squid juvenile	0.0	0.0	0.1	0.0	0.0
neocalanus plumchrus var.1/2 1/2	2.8	0.0	1.1	0.0	7.3
neocalanus plumchrus var.1/2 3	11.9	0.1	0.0	4.5	27.4
neocalanus plumchrus var.2 5	36.4	0.8	2.2	3.8	15.7
"funny thing"	0.2	1.0	5.3	0.5	0.0

amphipoda shovel_head	0.1	0.0	0.0	0.0	0.0

Cruise 84-02

Total Abundance (no./m**3)

Taxon	5-6
parathemis sp.	0.4
euprimno sp.	0.2
sagitta elegans	0.4
eukrohnia hamata	0.4
euphausid larva	1.0
amphipoda unidentified juveniles	0.5
larvacean larvaceans	20.8
aglantha sp.	0.1
eucalanus bungi s4	0.5
eucalanus bungi s5m	0.5
eucalanus bungi s5f	0.5
eucalanus bungi s6f	0.2
metridia sp. .le.s3	11.9
metridia pacifica s5m	17.8
metridia pacifica s5f	5.0
metridia pacifica s6f	6.9
neocalanus cristatus s4	0.2
neocalanus cristatus s5	0.1
neocalanus plumchrus s4	26.8
neocalanus plumchrus s5	63.4
oithona helgolandica	169.5
pseudocala sp. .le.s3	9.9
pseudocala sp. s4	19.8
pseudocala sp. s5m	8.9
pseudocala sp. s5f	6.9
pseudocala sp. s6m	4.0
pseudocala sp. s6f	24.8
scolecithr minor s5	1.0
scolecithr minor s6m	1.0
scolecithr minor s6f	1.0
clausocala sp. s5	3.0
clausocala sp. .le.s4	2.0
clione sp.	1.9
chord:uroc thali:salp	2.0
arthropoda crust:cope unidentified	2.0

limacina sp.	1.7
neocalanus plumchrus var.1/2 1/2	41.6
neocalanus plumchrus var.1/2 3	31.7
neocalanus plumchrus var.2 5	92.2

Cruise 84-02

Total Abundance (no./m**3)

Taxon	6-1	6-2	6-3	6-4	6-5
parathemis sp.	0.2	0.1	0.1	0.3	0.2
euprimno sp.	0.1	0.1	0.3	0.2	0.0
cyphocaris sp.	0.1	0.1	0.0	0.0	0.0
chaetognat unidentified juveniles	1.8	2.4	1.8	1.5	4.4
sagitta elegans	0.1	0.1	0.1	0.3	0.0
eukrohnia hamata	3.0	6.0	2.6	10.9	20.3
unidentifi eggs	0.0	2.4	0.0	0.0	0.0
euphausid larva	3.2	0.2	10.2	10.8	21.1
crust:mala euphausiac juveniles	0.0	0.0	0.3	0.0	0.0
amphipoda unidentified juveniles	0.2	0.4	0.9	0.8	4.4
euphausia pacifica	0.1	0.0	0.0	0.1	1.2
thysanoess spinifera	0.1	0.0	0.0	0.0	0.0
larvacean larvaceans	4.2	0.4	3.0	6.2	11.4
aglantha sp.	0.3	0.0	0.1	0.1	0.1
conchoecia sp.	4.6	10.1	3.9	6.9	0.0
nectophore bracts	1.6	2.3	3.3	0.8	0.0
acartia longiremis s6f	0.2	0.0	0.0	0.0	0.0
calanus pacificus .le.s5	0.2	0.1	0.0	0.8	0.0
calanus tenuicornis .le.s4	0.0	0.0	0.6	0.8	0.0
calanus tenuicornis s5	0.0	0.0	0.0	0.0	0.9
eucalanus bungi s3	0.5	0.7	0.9	3.9	2.6
eucalanus bungi s4	7.8	3.4	12.1	32.3	48.3
eucalanus bungi s5m	6.2	1.8	6.9	15.4	23.7
eucalanus bungi s5f	4.2	2.6	6.3	23.8	45.8
eucalanus bungi s6m	0.0	1.3	0.0	0.0	0.0
eucalanus bungi s6f	2.5	1.8	8.0	15.8	16.0
euchaeta japonica s1/2	0.0	0.4	0.0	0.0	0.0
euchaeta japonica s3	0.0	0.1	0.3	0.0	0.0
euchaeta japonica s5m	0.1	0.1	0.0	0.1	0.0
euchaeta japonica s5f	0.0	0.1	0.0	0.1	0.0
euchaeta japonica s6m	0.1	0.1	0.2	0.1	0.0
euchaeta japonica s6f	0.1	0.2	0.1	0.1	0.0
metridia sp. .le.s3	5.8	6.6	76.3	67.8	37.8
metridia sp. s4	8.3	4.5	29.0	9.2	0.9
metridia pacifica s5m	3.7	2.4	13.6	13.8	9.7

metridia pacifica s5f	3.4	1.3	5.1	6.2	5.3
metridia pacifica s6f	3.7	2.3	12.4	25.4	21.1
neocalanus cristatus s1	0.0	0.0	0.0	12.3	7.0
neocalanus cristatus s2	0.7	0.0	0.0	0.0	1.8
neocalanus cristatus s3	0.4	0.0	0.3	1.9	9.7
neocalanus cristatus s4	0.8	0.6	1.2	2.6	19.3
neocalanus cristatus s5	2.0	3.3	1.9	0.1	5.1
neocalanus plumchrus s4	9.5	0.0	0.0	1.5	14.9
neocalanus plumchrus s5	2.4	0.2	0.6	0.0	3.5
oithona helgolanoica	1.1	1.2	13.9	38.5	99.3
oithona spinirostris	7.6	2.6	25.9	108.5	115.1
pseudocala sp. .le.s3	0.4	0.0	0.0	0.0	0.0
pseudocala sp. s4	2.6	0.0	0.0	0.0	0.0
pseudocala sp. s5m	1.6	0.1	0.0	0.8	6.2
pseudocala sp. s5f	1.4	0.0	0.0	0.8	2.6
pseudocala sp. s6m	0.9	0.0	0.0	0.0	3.5
pseudocala sp. s6f	5.6	0.0	0.0	0.0	7.9
scolecithr minor .le.s4	1.6	0.1	1.5	12.3	6.2
scolecithr minor s5	0.7	0.5	1.2	4.6	2.6
scolecithr minor s6m	0.2	0.0	1.2	1.5	0.0
scolecithr minor s6f	0.2	0.4	3.9	3.9	3.5
aetideus armatus s6f	0.2	0.0	0.3	0.0	0.0
aetideus armatus s6m	0.2	0.2	0.0	0.0	0.0
candacia columbiae s6f	0.0	0.1	0.0	0.1	0.1
candacia columbiae s6m	0.0	0.2	0.0	0.1	0.0
candacia columbiae s5	0.0	0.0	0.0	0.8	0.0
candacia columbiae .le.s4	0.0	0.0	0.6	0.8	0.0
clausocala sp. s6f	0.2	0.0	0.0	0.0	0.0
clausocala sp. s5	0.0	0.0	0.0	0.0	0.9
clione sp.	0.9	0.3	10.0	1.5	0.9
corycaeus sp.	0.0	0.0	0.0	0.0	0.9
echinoplut larvae	0.0	0.0	0.0	0.0	0.9
vert:fish larvae	0.1	0.1	0.0	0.1	0.0
gaetanus sp. s6f	0.2	0.2	0.0	0.0	0.0
gaetanus sp. .le.s4	0.7	0.8	0.0	0.0	0.0
heterorhab tanneri s6f	0.1	0.1	0.3	0.0	0.0
heterorhab tanneri s6m	0.0	0.1	0.0	0.0	0.0
lucicutia sp. s5	0.0	0.0	0.0	1.5	0.0
microcalan sp. s5	0.9	0.7	5.1	17.7	8.8
microcalan sp. s6f	0.0	1.1	0.0	0.0	0.0
nematoscel sp.	0.1	0.0	0.1	0.1	0.1
oncaea sp.	0.0	0.1	0.0	0.0	4.4
pleuromamm sp.	0.2	0.0	0.0	0.0	0.0
pleuromamm scutullata s6f	0.2	0.2	0.0	0.0	0.0
pleuromamm scutullata s6m	0.0	0.2	0.0	0.0	0.0
pleuromamm scutullata s5	0.0	0.1	0.0	0.0	0.0
annelida polychaeta larvae	0.0	0.1	0.6	0.0	1.8
racovitzan antarcticus s6f	0.7	0.9	0.0	0.0	0.0
racovitzan antarcticus s5	0.7	0.5	0.0	0.0	0.0

racovitzan antarcticus .le.s4	0.0	0.1	0.0	0.0	0.0
sagitta scrippsae	0.1	0.1	0.0	0.0	0.0
chord:uroo thali:salp	0.6	0.3	0.0	0.0	0.0
tomopteris septentriona	0.1	0.0	1.2	3.9	0.2
arthropoda crust:cope unidentified	1.2	0.1	0.0	0.0	1.8
limacina sp.	0.2	0.1	3.6	11.5	14.1
decapoda squid juvenile	0.1	0.1	0.0	0.0	0.1
pleuromamm sp.(3) .le.4	0.0	0.5	0.0	0.0	0.0
pleuromamm sp.(3) 6f	0.0	0.1	0.0	0.0	0.0
neocalanus plumchrus var.1/2 1/2	1.1	0.0	0.3	0.0	0.0
neocalanus plumchrus var.1/2 3	7.4	0.0	0.0	3.9	7.0
neocalanus plumchrus var.2 4	0.0	0.0	0.3	0.0	0.0
neocalanus plumchrus var.2 5	7.9	0.8	0.6	0.4	0.0
"funny thing"	0.2	0.8	6.0	1.5	0.0

Cruise 84-02

Total Abundance (no./m**3)

Taxon	6-6	6-7
parathemis sp.	0.7	0.0
chaetognat unidentified juveniles	0.9	0.0
sagitta elegans	0.1	0.0
eukrohnia hamata	2.6	0.0
euphausid larva	5.3	0.0
amphipoda unidentified juveniles	0.9	0.0
euphausia pacifica	0.6	0.0
larvacean larvaceans	8.8	0.0
aglantha sp.	3.0	0.0
eucalanus bungi s3	0.9	0.0
eucalanus bungi s4	5.2	0.0
eucalanus bungi s5m	4.3	0.0
eucalanus bungi s5f	3.5	0.0
eucalanus bungi s6f	1.1	0.0
metridia sp. .le.s3	88.3	0.0
metridia sp. s4	1.8	0.0
metridia pacifica s5m	8.8	0.0
metridia pacifica s5f	1.8	0.0
metridia pacifica s6f	1.8	0.0
neocalanus cristatus s3	1.8	0.0
neocalanus cristatus s4	1.7	0.0
neocalanus cristatus s6f	1.3	0.0
neocalanus plumchrus s4	51.1	0.0
neocalanus plumchrus s5	40.8	0.0
oithona helgolanoica	305.1	0.0
oithona spinirostris	12.3	0.0
pseudocala sp. .le.s3	12.3	0.0
pseudocala sp. s5m	31.7	0.0
pseudocala sp. s5f	28.2	0.0
pseudocala sp. s6m	24.7	0.0
pseudocala sp. s6f	49.4	0.0
scolecithr minor .le.s4	3.5	0.0
scolecithr minor s5	5.3	0.0
scolecithr minor s6f	1.8	0.0
clausocala sp. s5	1.8	0.0

olione sp.	3.5	0.0
chord:uroo thali:salp	1.1	0.0
tomopteris septentriona	0.1	0.0
arthropoda orust:cope unidentified	5.3	0.0
limacina sp.	12.3	0.0
neocalanus plumchrus var.1/2 1/2	68.8	0.0
neocalanus plumchrus var.1/2 3	60.0	0.0
neocalanus plumchrus var.2 5	88.5	0.0

Cruise 84-02

Total Abundance (no./m**3)

Taxon	7-1	7-2	7-3	7-4	7-5
parathemis sp.	0.4	0.0	0.0	0.1	0.2
euprimno sp.	0.1	0.1	0.0	0.0	0.0
cyphocaris sp.	0.1	0.1	0.2	0.1	0.1
chaetognat unidentified juveniles	3.2	3.6	0.7	1.6	0.0
sagitta elegans	0.1	0.1	0.0	0.0	1.5
eukrohnia hamata	8.1	7.8	2.5	8.9	0.1
euphausid larva	1.8	0.1	1.2	11.3	3.5
decapod larva	0.0	0.1	0.0	0.0	0.0
amphipoda unidentified juveniles	0.0	0.6	1.7	1.6	0.9
euphausia pacifica	5.0	0.1	0.1	0.0	3.0
larvacean larvaceans	0.9	0.6	0.3	0.4	0.0
aglantha sp.	0.1	0.1	0.1	0.0	3.3
conchoecia sp.	9.5	17.0	19.3	11.8	0.0
nectophore bracts	0.2	0.5	2.6	2.4	0.0
calanus pacificus .le.s5	0.0	0.1	0.0	0.0	3.5
eucalanus bungi s3	1.4	0.5	0.8	3.2	0.0
eucalanus bungi s4	11.1	6.3	5.2	25.3	0.0
eucalanus bungi s5m	2.3	0.4	2.3	6.9	1.7
eucalanus bungi s5f	5.9	1.6	6.6	9.5	0.0
eucalanus bungi s6m	0.7	1.8	0.0	0.0	0.0
eucalanus bungi s6f	3.8	1.1	9.6	8.7	0.0
euchaeta japonica s1/2	0.0	0.3	0.0	0.0	0.0
euchaeta japonica s3	0.0	0.3	0.1	0.0	0.0
euchaeta japonica s4	0.1	0.0	0.0	0.1	0.0
euchaeta japonica s5m	0.0	0.1	0.0	0.0	0.2
euchaeta japonica s5f	0.0	0.0	0.0	0.0	0.1
euchaeta japonica s6m	0.1	0.1	0.1	0.2	0.4
euchaeta japonica s6f	0.2	0.1	0.1	0.1	1.2
metridia sp. .le.s3	3.2	3.6	11.2	9.9	15.9
metridia sp. s4	2.9	1.1	4.0	3.8	5.3
metridia pacifica s5m	1.3	0.3	2.3	0.6	3.5
metridia pacifica s5f	0.9	0.1	0.9	0.8	1.8
metridia pacifica s6f	1.6	0.1	0.7	1.4	3.5
neocalanus cristatus s1	0.0	0.0	0.0	3.4	0.0
neocalanus cristatus s2	0.0	0.0	0.0	3.2	0.0

neocalanus cristatus s3	0.0	0.0	0.3	0.0	0.0
neocalanus cristatus s4	1.2	1.2	1.0	3.0	0.0
neocalanus cristatus s5	2.6	2.3	0.4	3.6	0.3
neocalanus plumchrus s4	15.5	0.0	0.2	1.2	88.4
neocalanus plumchrus s5	6.7	0.1	0.2	0.4	69.0
oithona helgolanoica	0.7	2.9	2.1	14.0	311.3
oithona spinirostris	2.5	2.3	20.7	44.4	3.5
pseudocala sp. .le.s3	0.0	0.0	0.0	0.0	14.2
pseudocala sp. s4	2.3	0.0	0.0	0.4	42.5
pseudocala sp. s5m	2.0	0.1	0.0	0.2	15.9
pseudocala sp. s5f	2.1	0.0	0.0	0.6	1.8
pseudocala sp. s6m	0.2	0.0	0.0	0.4	21.2
pseudocala sp. s6f	4.6	0.0	0.5	1.4	49.5
scolecithr minor .le.s4	0.9	0.1	1.1	6.7	0.0
scolecithr minor s5	0.7	0.3	0.0	4.5	0.0
scolecithr minor s6m	0.0	0.0	0.0	1.4	0.0
scolecithr minor s6f	1.1	0.5	0.9	3.8	1.8
aetideus armatus s6f	0.0	0.2	0.2	0.0	0.0
candacia bipinnata .le.s4	0.0	0.0	0.9	0.0	0.0
candacia columbiae s6f	0.0	0.1	0.0	0.1	0.0
candacia columbiae s6m	0.0	0.1	0.0	0.0	0.1
candacia columbiae .le.s4	0.0	0.4	0.0	1.6	0.0
chiridius gracilis .le.s4	0.0	0.0	0.0	0.0	1.8
clausocala sp. s6f	0.0	0.0	0.1	0.2	0.0
clausocala sp. s5	0.2	0.0	0.0	0.4	1.8
clausocala sp. .le.s4	0.2	0.0	0.0	0.0	0.0
clione sp.	0.5	1.2	7.2	2.6	1.8
corycaeus sp.	0.0	0.1	0.0	0.0	0.0
crust:mala isopoda cryptoniscid	0.0	0.0	0.1	0.0	0.0
vert:fish larvae	0.0	0.0	0.1	0.0	0.0
gaetanus sp. s6f	0.0	0.2	3.5	0.4	0.0
gaetanus sp. s5	0.0	0.1	0.1	0.0	0.0
gaetanus sp. .le.s4	2.4	0.9	0.0	0.0	0.0
heterorhab sp. s6f	0.0	0.1	0.0	0.0	0.0
heterorhab tanneri s6f	0.2	0.1	0.0	0.0	0.0
heterorhab tanneri s6m	0.2	0.2	0.0	0.0	0.0
hyperia sp.	0.1	0.0	0.0	0.0	0.0
lucicutia sp. s5	0.0	0.0	0.1	0.0	0.0
microcalan sp. s5	0.0	1.0	2.1	3.2	0.0
microcalan sp. s6f	0.0	0.4	0.1	0.0	0.0
pera:mysid mysid	0.0	0.1	0.0	0.0	0.0
deca:natan natantia	0.1	0.0	0.1	0.0	0.0
nematoscel sp.	0.1	0.1	0.1	0.1	1.7
oncaea sp.	1.6	1.4	0.1	0.8	0.0
pleuromamm sp.	0.0	0.1	0.2	0.0	0.0
pleuromamm scutullata s6f	1.1	1.6	5.6	0.0	0.0
pleuromamm scutullata s6m	0.0	0.2	0.1	0.0	0.0
pleuromamm scutullata s5	0.0	0.0	0.1	0.0	0.0
pleuromamm scutullata .le.s4	0.0	0.2	0.2	0.0	0.0

podon sp.	0.9	0.0	0.0	0.0	0.0
annelida polychaeta larvae	0.0	0.1	0.1	0.1	0.0
racovitzan antarcticus s6f	0.9	0.9	0.0	0.0	0.0
racovitzan antarcticus s5	0.4	0.7	0.1	0.0	0.0
racovitzan antarcticus .le.s4	0.0	0.2	0.0	0.0	0.0
sagitta sorippsae	0.0	0.1	0.0	0.0	0.0
chord:uroc thali:salp	0.9	0.0	0.0	0.2	0.5
tessarabra oculatus	0.0	0.0	0.0	0.2	0.1
tomopteris septentriona	0.1	0.1	0.1	0.3	0.1
arthropoda crust:cope unidentified	0.0	0.1	0.0	0.0	0.0
arthropoda euphausid unidentified	0.0	0.0	0.1	0.0	0.0
limacina sp.	0.7	0.0	1.0	2.6	3.5
decapoda squid juvenile	0.1	0.1	0.1	0.0	0.1
pleuromamm sp.(3) 6f	0.0	0.0	0.0	0.2	0.0
lophothrix sp.	0.0	0.1	0.0	0.0	0.0
microsetel spp.	0.0	0.0	0.1	0.0	0.0
amphi:hype hyperii(1)	0.0	0.0	0.0	0.1	0.0
neocalanus spp. s1/2	0.0	0.3	0.0	0.0	0.0
neocalanus plumchrus var.1/2 1/2	0.0	0.0	0.5	0.0	69.0
neocalanus plumchrus var.1/2 3	11.8	0.1	0.2	0.2	91.9
neocalanus plumchrus var.2 4	0.0	0.0	0.0	0.0	1.8
neocalanus plumchrus var.2 5	11.6	0.3	0.8	0.6	91.9
"funny thing"	0.0	1.1	5.3	1.4	0.0
amphipoda shovel_head	0.1	0.0	0.0	0.0	0.0

Cruise 84-02

Total Abundance (no./m**3)

Taxon	7-6	7-7
parathemis sp.	2.5	0.0
sagitta elegans	1.5	0.0
amphipoda unidentified juveniles	7.2	0.0
euphausia pacifica	3.6	0.0
thysanoess spinifera	0.1	0.0
aglantha sp.	2.2	0.0
acartia longiremis s6m	1.8	0.0
calanus pacifious .le.s5	3.6	0.0
euchaeta japonica s6m	1.0	0.0
euchaeta japonica s6f	1.1	0.0
metridia sp. .le.s3	16.3	0.0
metridia sp. s4	1.8	0.0
metridia pacifica s5m	3.6	0.0
metridia pacifica s6f	3.6	0.0
neocalanus cristatus s5	0.1	0.0
neocalanus plumchrus s4	92.3	0.0
neocalanus plumchrus s5	83.2	0.0
oithona helgolanoica	608.0	0.0
pseudocala sp. .le.s3	41.6	0.0
pseudocala sp. s4	79.6	0.0
pseudocala sp. s5m	32.6	0.0
pseudocala sp. s5f	14.5	0.0
pseudocala sp. s6m	19.9	0.0
pseudocala sp. s6f	117.6	0.0
aegina sp.	0.1	0.0
nematoscel sp.	0.5	0.0
chord:uroc thali:salp	0.5	0.0
tomopteris septentriona	2.3	0.0
arthropoda crust:cope unidentified	1.8	0.0
limacina sp.	1.8	0.0
neocalanus plumchrus var.1/2 1/2	59.7	0.0
neocalanus plumchrus var.1/2 3	68.8	0.0
neocalanus plumchrus var.2 5	66.9	0.0

Cruise 84-02

Total Abundance (no./m**3)

Taxon	8-1	8-2	8-3	8-4	8-5
parathemis sp.	0.2	0.1	0.0	0.1	0.7
euprimno sp.	0.1	0.1	0.1	0.0	0.0
cyphocaris sp.	0.1	0.1	0.1	0.0	0.0
chaetognat unidentified juveniles	0.4	6.4	0.2	0.8	0.0
sagitta elegans	0.1	0.1	0.1	0.1	0.2
eukrohnia hamata	3.2	6.3	0.2	2.5	3.0
euphausid larva	1.5	0.2	1.3	18.3	9.0
amphipoda unidentified juveniles	0.9	0.2	1.2	1.3	0.6
euphausia pacifica	0.1	0.0	0.0	0.0	0.3
thysanoess spinifera	0.1	0.1	0.0	0.0	0.1
larvacean larvaceans	1.2	0.9	4.1	6.5	0.0
aglantha sp.	0.4	0.1	0.1	0.2	0.3
conchoecia sp.	8.3	12.5	3.9	3.5	0.0
nectophore bracts	2.7	1.7	3.7	7.3	0.0
calanus pacificus .le.s5	0.2	0.2	0.0	0.0	0.0
eucalanus bungi s3	2.8	1.6	0.9	1.9	3.4
eucalanus bungi s4	7.8	11.7	2.6	10.5	19.0
eucalanus bungi s5m	1.9	1.2	1.8	10.8	18.5
eucalanus bungi s5f	3.3	1.7	2.6	9.4	24.6
eucalanus bungi s6m	1.3	1.2	0.0	0.0	0.0
eucalanus bungi s6f	2.3	1.6	4.2	15.4	7.9
euchaeta japonica s1/2	0.0	0.5	0.0	0.0	0.0
euchaeta japonica s3	0.0	0.1	0.0	0.0	0.0
euchaeta japonica s4	0.0	0.1	0.0	0.0	0.0
euchaeta japonica s5m	0.0	0.0	0.0	0.1	0.0
euchaeta japonica s5f	0.0	0.1	0.0	0.2	0.0
euchaeta japonica s6m	0.1	0.1	0.1	0.1	0.1
euchaeta japonica s6f	0.1	0.1	0.0	0.0	0.1
metridia sp. .le.s3	6.4	5.6	4.9	17.8	35.3
metridia sp. s4	3.3	2.0	2.7	1.3	9.0
metridia pacifica s5m	1.2	0.5	0.3	1.1	1.7
metridia pacifica s5f	0.3	0.3	0.7	0.5	1.7
metridia pacifica s6f	2.1	0.9	3.7	4.9	5.0
neocalanus cristatus s1	0.0	0.0	0.7	4.0	0.6
neocalanus cristatus s2	0.2	0.0	0.3	1.9	2.2

neocalanus cristatus s3	0.0	0.0	0.2	1.9	3.4
neocalanus cristatus s4	0.7	0.9	1.6	0.8	5.0
neocalanus cristatus s5	1.9	2.0	0.5	0.8	2.1
neocalanus plumchrus s4	4.5	0.1	0.4	0.3	15.7
neocalanus plumchrus s5	1.8	0.0	0.1	0.0	2.2
oithona helgolanoica	1.8	0.2	3.5	12.4	161.7
oithona spinirostris	1.9	2.1	7.4	37.4	7.8
pseudocala sp. .le.s3	1.0	0.0	0.0	0.0	3.9
pseudocala sp. s4	8.1	0.0	0.2	0.0	6.1
pseudocala sp. s5m	2.8	0.0	0.0	0.0	2.2
pseudocala sp. s5f	1.6	0.0	0.0	0.0	3.9
pseudocala sp. s6m	2.4	0.0	0.1	0.0	1.7
pseudocala sp. s6f	8.4	0.0	0.2	0.5	10.1
scolecithr minor .le.s4	0.6	0.3	0.5	4.0	3.9
scolecithr minor s5	0.7	0.4	0.3	0.8	0.0
scolecithr minor s6m	0.0	0.1	0.0	0.0	0.0
scolecithr minor s6f	0.5	0.4	0.4	2.7	3.9
aegina sp.	0.0	0.1	0.0	0.0	0.0
aetideus armatus s6f	0.0	0.1	0.0	0.0	0.0
aetideus armatus s5	0.0	0.1	0.0	0.0	0.0
candacia columbiae .le.s4	0.0	0.5	0.8	1.3	0.0
clione sp.	1.3	1.9	1.7	0.5	0.6
crust:mala isopoda cryptoniscid	0.2	0.2	0.6	0.0	0.0
vert:fish larvae	0.0	0.0	0.0	0.0	0.6
gaetanus sp. s6f	0.0	0.3	0.0	0.0	0.0
gaetanus sp. s5	0.0	0.1	0.0	0.0	0.0
gaetanus sp. .le.s4	1.0	1.4	0.1	0.0	0.0
heterorhab sp. s6f	0.0	0.1	0.0	0.0	0.0
heterorhab sp. s6m	0.0	0.1	0.0	0.0	0.0
heterorhab tanneri s6f	0.0	0.1	0.0	0.1	0.0
heterorhab tanneri s6m	0.0	0.2	0.1	0.0	0.0
heterorhab tanneri s5	0.0	0.1	0.0	0.0	0.0
microcalan sp. s5	0.3	1.3	0.4	10.2	2.8
microcalan sp. .le.s4	0.0	0.1	0.0	0.0	0.0
microcalan sp. s6f	0.2	0.7	0.1	0.0	0.0
microcalan sp. s6m	0.2	0.0	0.0	0.0	0.0
deca:natan natantia	0.0	0.1	0.0	0.0	0.0
nematoscel sp.	0.1	0.1	0.1	0.1	0.3
oncaea sp.	1.3	1.8	0.1	1.1	3.9
pleuromamm sp.	0.1	0.7	0.0	0.0	0.0
pleuromamm scutullata s6f	0.3	0.3	0.1	0.0	0.0
pleuromamm scutullata s6m	0.1	0.0	0.0	0.0	0.0
annelida polychaeta larvae	0.0	0.1	0.1	0.5	0.0
racovitzan antarcticus s6f	0.2	0.2	0.0	0.0	0.0
racovitzan antarcticus s5	0.9	1.1	0.0	0.0	0.0
racovitzan antarcticus .le.s4	0.3	0.2	0.0	0.0	0.0
chord:uroc thali:salp	1.7	0.1	0.0	0.8	2.0
scaphocala brevicornis s6f	0.0	0.1	0.0	0.0	0.0
tessarabra oculatus	0.0	0.0	0.0	0.1	0.0

tomopteris septentriona	0.1	0.1	0.4	0.1	0.0
arthropoda crust:cope unidentified	0.0	0.7	0.1	0.0	0.0
limacina sp.	0.9	0.0	0.6	4.6	9.0
decapoda squid juvenile	0.1	0.0	0.0	0.0	0.0
lophothrix sp.	0.0	0.2	0.0	0.0	0.0
neocalanus plumchrus var.1/2 1/2	2.7	0.2	0.1	0.0	6.7
neocalanus plumchrus var.1/2 3	6.9	0.1	0.1	0.3	22.4
neocalanus plumchrus var.2 4	0.2	0.0	0.1	0.0	0.0
neocalanus plumchrus var.2 5	9.5	0.2	0.3	0.3	18.4
"funny thing"	0.2	0.7	5.4	7.0	0.0
heterostyl sp. .le.4	1.6	0.0	0.0	0.0	0.0
heterostyl sp. 6f	0.1	0.0	0.0	0.0	0.0
amphipoda shovel_head	0.1	0.0	0.0	0.0	0.0
scaphocala magnus 5	0.1	0.0	0.0	0.0	0.0
scaphocala magnus 6f	0.2	0.0	0.0	0.0	0.0
lophothrix frontalis 6f	0.1	0.0	0.0	0.0	0.0

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Total Abundance (no./m**3)

Taxon	8-6	8-7
parathemis sp.	0.2	3.9
chaetognat unidentified juveniles	0.7	3.9
sagitta elegans	1.8	2.0
eukrohnia hamata	0.0	0.1
aglantha sp.	0.0	0.1
neotophore bracts	0.0	1.3
calanus pacifious .le.s5	1.3	0.0
eucalanus bungi s3	0.7	2.6
eucalanus bungi s4	7.2	8.8
eucalanus bungi s5m	0.7	2.7
eucalanus bungi s5f	3.9	3.8
eucalanus bungi s6f	0.1	2.0
euchaeta japonica s6f	0.1	0.0
metridia sp. .le.s3	24.9	42.7
metridia sp. s4	9.2	6.3
metridia pacifica s5m	3.9	2.5
metridia pacifica s5f	2.0	0.0
neocalanus cristatus s4	0.7	0.0
neocalanus cristatus s5	1.1	1.3
neocalanus plumchrus s4	21.7	16.4
neocalanus plumchrus s5	2.0	20.1
oithona helgolanoica	299.6	605.4
oithona spinirostris	0.7	5.0
pseudocala sp. .le.s3	25.5	66.5
pseudocala sp. s4	37.4	65.3
pseudocala sp. s5m	20.3	15.0
pseudocala sp. s5f	18.4	11.3
pseudocala sp. s6m	11.1	11.3
pseudocala sp. s6f	51.8	90.4
microcalan sp. s6f	0.7	0.0
nematoscel sp.	0.3	1.7
oncaea sp.	0.0	1.3
chord:uroc thali:salp	2.4	1.5
limacina sp.	0.7	2.5
neocalanus plumchrus var.1/2 1/2	37.4	51.5

neocalanus plumchrus var.1/2 3	23.0	27.7
neocalanus plumchrus var.2 5	93.8	113.0

Cruise 84-02

Total Abundance (no./m**3)

Taxon	9-1	9-2	9-3	9-4	9-5
parathemis sp.	0.1	0.1	0.1	0.2	0.3
euprimno sp.	0.0	0.0	0.0	0.1	0.0
chaetognat unidentified juveniles	0.0	3.4	0.3	0.0	2.0
sagitta elegans	0.1	0.0	0.0	0.0	0.0
eukrohnia hamata	4.1	2.2	0.3	1.6	7.1
copepod nauplii	0.0	0.1	0.0	0.0	0.0
euphausid larva	0.8	0.0	4.1	15.0	9.8
amphipoda unidentified juveniles	0.0	0.0	1.5	3.0	3.9
larvacean larvaceans	8.7	2.6	21.7	43.2	3.0
aglantha sp.	0.2	0.2	0.6	0.1	0.0
conchoecia sp.	10.5	5.2	6.4	0.5	0.0
nectophore bracts	0.8	3.1	4.4	2.5	0.0
acartia longiremis s6m	0.0	0.0	0.0	0.0	1.0
calanus pacificus .le.s5	0.0	0.0	0.2	0.0	0.0
calanus tenuicornis s5	0.0	0.0	0.0	0.5	0.0
calanus tenuicornis s6f	0.0	0.0	0.0	0.5	0.0
eucalanus bungi s3	0.5	0.5	0.6	3.0	2.0
eucalanus bungi s4	5.0	1.5	4.3	15.4	24.9
eucalanus bungi s5m	3.8	0.8	2.1	15.0	11.9
eucalanus bungi s5f	4.8	1.1	3.8	21.9	14.4
eucalanus bungi s6m	0.4	0.8	0.0	0.0	0.0
eucalanus bungi s6f	2.5	1.1	4.5	14.1	3.2
euchaeta japonica s1/2	0.0	0.1	0.0	0.0	0.0
euchaeta japonica s3	0.0	0.1	0.2	0.0	0.0
euchaeta japonica s6f	0.1	0.0	0.0	0.0	0.0
metridia sp. .le.s3	10.5	8.6	29.7	52.3	50.9
metridia sp. s4	4.6	3.2	5.7	15.0	16.6
metridia pacifica s5m	3.3	0.6	2.6	9.0	3.9
metridia pacifica s5f	1.5	0.2	0.9	2.5	7.8
metridia pacifica s6m	0.5	0.3	0.0	0.0	0.0
metridia pacifica s6f	1.5	0.8	1.4	4.5	1.0
neocalanus cristatus s1	0.0	0.0	0.0	2.5	0.0
neocalanus cristatus s2	0.3	0.0	0.4	1.5	2.0
neocalanus cristatus s3	0.0	0.0	0.4	1.5	2.0
neocalanus cristatus s4	1.5	0.8	1.9	0.5	6.0

neocalanus cristatus s5	1.9	0.0	0.6	0.3	2.3
neocalanus plumchrus s4	19.9	0.1	0.4	0.0	55.8
neocalanus plumchrus s5	9.9	0.0	0.3	0.0	59.7
oithona helgolanoica	1.5	0.5	3.9	16.4	89.1
oithona spinirostris	1.5	1.7	9.9	48.8	37.2
pseudocala sp. .le.s3	0.0	0.0	0.0	0.0	2.0
pseudocala sp. s4	3.8	0.1	0.0	0.0	22.5
pseudocala sp. s5m	0.8	0.0	0.2	0.0	12.7
pseudocala sp. s5f	2.0	0.0	0.0	0.0	11.8
pseudocala sp. s6m	0.5	0.1	0.0	0.5	6.8
pseudocala sp. s6f	3.6	0.0	0.2	0.5	18.6
scolecithr minor .le.s4	0.5	0.1	1.2	7.0	4.9
scolecithr minor s5	0.3	0.1	0.9	3.5	1.0
scolecithr minor s6m	0.0	0.0	0.2	2.5	0.0
scolecithr minor s6f	0.8	0.0	1.2	2.0	1.0
aetideus armatus s6f	0.0	0.1	0.2	0.0	0.0
aetideus armatus s5	0.0	0.1	0.2	0.0	0.0
candacia columbiae .le.s4	0.0	0.1	0.0	0.0	0.0
clausocala sp. s6f	0.0	0.0	0.0	0.0	3.9
clausocala sp. s6m	0.0	0.0	0.0	0.0	1.0
clausocala sp. s5	0.0	0.0	0.0	0.0	7.8
clausocala sp. .le.s4	0.0	0.0	0.0	0.0	1.0
clione sp.	0.3	1.7	15.4	2.0	3.9
gaetanus sp. .le.s4	0.8	0.4	0.0	0.0	0.0
heterorhab tanneri s6f	0.0	0.1	0.0	0.0	1.0
hyperia sp.	0.0	0.0	0.1	0.0	0.0
lucicutia sp. s5	0.0	0.0	0.0	0.5	0.0
microcalan sp. s5	1.3	0.3	4.9	3.0	2.0
microcalan sp. s6f	0.0	0.1	0.0	0.0	0.0
oncaea sp.	0.3	0.1	0.7	3.0	2.0
annelida polychaeta larvae	0.0	0.1	0.0	0.0	0.0
racovitzan antarctious s6f	0.8	0.3	0.0	0.0	0.0
racovitzan antarctious s5	0.3	0.1	0.0	0.0	0.0
racovitzan antarctious .le.s4	0.0	0.1	0.0	0.0	0.0
chord:uroc thali:salp	1.6	0.2	0.0	3.7	0.0
tomopteris septentriona	0.2	0.1	0.6	0.0	0.1
arthropoda crust:cope unidentified	0.0	0.0	0.0	0.0	1.0
limacina sp.	0.5	0.1	1.2	3.5	13.7
microsetel spp.	0.0	0.0	0.2	0.0	0.0
neocalanus plumchrus var.1/2 1/2	5.6	0.2	0.5	0.0	13.9
neocalanus plumchrus var.1/2 3	18.1	0.0	0.2	0.0	50.0
neocalanus plumchrus var.2 5	13.5	0.1	0.3	0.0	54.8
"funny thing"	0.0	1.0	3.5	0.0	0.0
amphipoda shovel_head	0.1	0.0	0.0	0.1	0.1
pteropod big triangle	0.0	0.0	0.1	0.0	0.0

Cruise 84-02

Total Abundance (no./m**3)

Taxon	9-6	9-7
parathemis sp.	0.2	0.0
chaetognat unidentified juveniles	0.0	1.2
sagitta elegans	0.8	0.0
eukrohnia hamata	0.1	0.0
larvacean larvaceans	0.0	5.4
conchoecia sp.	0.0	11.9
eucalanus bungi s4	0.0	4.8
eucalanus bungi s5m	0.0	0.1
eucalanus bungi s5f	0.0	0.6
eucalanus bungi s6f	0.0	0.8
metridia sp. .le.s3	0.0	1.8
metridia sp. s4	0.0	1.2
neocalanus cristatus s5	0.1	0.2
neocalanus plumchrus s4	164.9	28.1
neocalanus plumchrus s5	171.1	3.0
oithona helgolanoica	162.8	368.1
oithona spinirostris	4.2	2.4
pseudocala sp. .le.s3	16.7	8.4
pseudocala sp. s4	71.0	9.6
pseudocala sp. s5m	18.8	1.2
pseudocala sp. s5f	6.3	0.6
pseudocala sp. s6m	6.3	1.2
pseudocala sp. s6f	52.2	5.4
clausocala sp. s5	0.0	0.6
olione sp.	0.0	0.6
heterorhab tanneri s6f	0.0	0.6
oncaea sp.	0.0	2.4
arthropoda crust:cope unidentified	2.1	0.0
limacina sp.	52.2	23.3
neocalanus plumchrus var.1/2 1/2	68.9	46.0
neocalanus plumchrus var.1/2 3	106.4	53.7
neocalanus plumchrus var.2 4	0.0	0.6
neocalanus plumchrus var.2 5	104.4	7.7
"funny thing"	2.1	0.6

Cruise 84-02

Total Abundance (no./m**3)

Taxon	11-1	11-2	11-3	11-4	11-5
parathemis sp.	0.8	0.1	0.2	0.8	1.2
euprimno sp.	0.1	0.0	0.1	0.0	0.0
chaetognat unidentified juveniles	2.6	1.8	3.2	3.6	1.0
sagitta elegans	0.3	0.1	0.0	0.1	0.3
eukrohnia hamata	5.1	1.9	3.1	7.9	16.8
euphausid larva	3.0	0.0	7.7	15.4	12.4
crust:mala euphausiac juveniles	0.0	0.0	0.5	0.0	0.0
amphipoda unidentified juveniles	0.0	0.0	2.2	0.8	0.0
larvacean larvaceans	5.0	0.3	8.6	34.0	30.0
aglantha sp.	0.2	0.3	0.3	0.0	0.0
conchoecia sp.	10.0	8.6	6.3	0.0	0.0
nectophore bracts	0.8	1.8	0.9	0.0	0.0
calanus pacificus .le.s5	0.0	0.1	0.0	0.0	0.0
calanus tenuicornis s5	0.4	0.0	0.0	0.0	0.0
eucalanus bungi s3	1.0	1.5	2.7	2.8	2.1
eucalanus bungi s4	9.8	4.4	4.1	14.6	10.4
eucalanus bungi s5m	2.6	0.9	3.6	8.1	5.2
eucalanus bungi s5f	3.8	1.8	5.0	10.1	15.5
eucalanus bungi s6m	0.4	1.3	0.0	0.0	0.0
eucalanus bungi s6f	2.4	1.1	4.2	4.9	5.7
euchaeta japonica s1/2	0.0	0.3	0.5	0.0	0.0
euchaeta japonica s6f	0.1	0.0	0.0	0.0	0.0
metridia sp. .le.s3	16.6	16.1	88.2	9.3	33.1
metridia sp. s4	7.6	5.0	20.8	2.4	0.0
metridia pacifica s5m	13.4	5.9	35.3	5.7	25.9
metridia pacifica s5f	6.6	2.4	13.1	0.4	15.5
metridia pacifica s6m	0.0	0.1	0.5	0.0	0.0
metridia pacifica s6f	6.0	1.8	19.9	0.8	1.0
neocalanus cristatus s1	0.4	0.1	3.2	1.2	0.0
neocalanus cristatus s2	0.0	0.0	1.8	2.8	0.0
neocalanus cristatus s3	0.4	0.0	0.5	13.4	0.0
neocalanus cristatus s4	3.0	0.8	5.4	15.4	5.2
neocalanus cristatus s5	4.9	3.3	2.2	5.3	6.4
neocalanus plumchrus s4	12.4	0.1	0.5	3.2	91.1
neocalanus plumchrus s5	5.8	0.1	0.9	0.8	115.9

oithona helgolanoica	5.4	1.5	11.3	14.2	179.0
oithona spinirostris	3.0	0.9	37.5	19.4	13.4
pseudocala sp. s4	2.2	0.0	0.0	0.4	11.4
pseudocala sp. s5m	1.8	0.0	0.0	1.6	8.3
pseudocala sp. s5f	1.2	0.0	0.0	0.4	9.3
pseudocala sp. s6m	1.6	0.0	0.0	0.0	9.3
pseudocala sp. s6f	3.2	0.0	0.5	2.0	26.9
scolecithr minor .le.s4	1.6	0.1	3.2	5.3	2.1
scolecithr minor s5	0.6	0.4	1.8	2.0	0.0
scolecithr minor s6m	0.0	0.0	1.4	0.4	0.0
scolecithr minor s6f	0.6	0.4	0.9	2.0	1.0
aetideus armatus s6f	0.2	0.1	0.0	0.0	0.0
aetideus armatus s5	0.0	0.1	0.0	0.0	0.0
aetideus armatus .le.s4	0.2	0.0	0.0	0.0	0.0
candacia columbiae .le.s4	0.6	0.4	0.0	0.0	0.0
clausocala sp. s6f	0.4	0.0	0.0	0.0	4.1
clausocala sp. s5	0.2	0.0	0.0	0.0	3.1
clausocala sp. .le.s4	0.4	0.0	0.0	0.0	3.1
clione sp.	2.4	1.6	8.2	0.8	0.0
crust:mala isopoda cryptoniscid	0.4	0.1	0.0	0.0	0.0
gaetanus sp. .le.s4	1.6	1.1	0.0	0.0	0.0
heterorhab tanneri s6f	0.0	0.1	0.0	0.0	0.0
heterorhab tanneri s6m	0.0	0.1	0.0	0.0	0.0
heterorhab tanneri s5	0.2	0.0	0.0	0.0	0.0
heterorhab tanneri .le.s4	0.0	0.1	0.0	0.0	0.0
lucicutia sp. s5	0.2	0.0	0.0	0.0	0.0
microcalan sp. s5	0.8	0.8	5.9	5.7	2.1
microcalan sp. s6f	0.2	0.1	0.5	0.0	0.0
nematoscel sp.	0.1	0.0	0.0	0.0	0.0
oncaea sp.	0.0	0.1	0.5	0.4	1.0
annelida polychaeta larvae	0.2	0.0	0.0	0.0	0.0
racovitzan antarctious s6f	0.4	0.9	0.0	0.0	0.0
racovitzan antarctious s5	0.4	0.6	0.0	0.0	0.0
racovitzan antarctious .le.s4	0.2	0.2	0.0	0.0	0.0
sagitta scrippsae	0.1	0.1	0.0	0.0	0.0
chord:uroc thali:salp	1.2	0.4	0.0	3.1	0.3
tomopteris septentriona	0.1	0.3	0.1	0.0	0.0
arthropoda crust:cope unidentified	0.2	0.0	0.0	0.0	0.0
limacina sp.	1.2	0.1	5.0	6.1	12.4
microsetel spp.	0.0	0.0	0.5	0.0	0.0
neocalanus plumchrus var.1/2 1/2	4.6	0.1	0.0	0.4	32.1
neocalanus plumchrus var.1/2 3	8.6	0.1	0.5	1.6	76.6
neocalanus plumchrus var.2 5	10.6	0.4	0.5	0.4	141.8
"funny thing"	0.2	1.4	0.9	0.0	0.0
heterostyl sp. .le.4	0.4	0.1	0.0	0.0	0.0
amphipoda shovel_head	0.1	0.0	0.0	0.1	0.0
pteropod small triangle	0.0	0.0	0.0	0.0	1.0

Cruise 84-02

Total Abundance (no./m**3)

Taxon	11-6	11-7
sagitta elegans	0.3	0.0
eukrohnia hamata	0.3	0.4
euphausid larva	2.1	0.0
larvacean larvaceans	0.0	3.0
aglantha sp.	0.0	0.1
calanus tenuicornis s5	1.0	0.0
eucalanus bungi s3	0.0	0.1
eucalanus bungi s4	1.0	0.0
eucalanus bungi s5m	1.0	0.4
eucalanus bungi s5f	0.0	0.2
eucalanus bungi s6f	0.2	0.6
metridia sp. .le.s3	1.0	0.1
metridia pacifica s5m	0.0	0.1
metridia pacifica s5f	1.0	0.0
neocalanus cristatus s4	0.0	0.3
neocalanus cristatus s5	0.3	0.3
neocalanus plumchrus s4	74.0	6.6
neocalanus plumchrus s5	38.0	1.4
oithona helgolanoica	486.0	683.4
pseudocala sp. .le.s3	23.6	2.0
pseudocala sp. s4	49.3	2.0
pseudocala sp. s5m	13.3	0.0
pseudocala sp. s5f	8.2	0.0
pseudocala sp. s6m	15.4	0.0
pseudocala sp. s6f	49.3	0.0
olione sp.	2.1	0.0
limacina sp.	15.4	2.0
neocalanus plumchrus var.1/2 1/2	104.8	44.6
neocalanus plumchrus var.1/2 3	96.6	7.9
neocalanus plumchrus var.2 5	45.2	2.2

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Total Abundance (no./m**3)

Taxon	13-1	13-2	13-3	13-4	13-5
parathemis sp.	0.5	0.2	0.0	0.0	1.3
euprimno sp.	0.1	0.1	0.0	0.0	0.0
cyphocaris sp.	0.1	0.0	0.0	0.0	0.0
chaetognat unidentified juveniles	1.5	2.1	3.2	3.8	5.7
sagitta elegans	0.1	0.2	0.0	0.0	0.1
eukrohnia hamata	4.9	1.9	1.7	12.6	16.3
copepod nauplii	0.0	0.1	0.0	0.0	0.0
euphausid larva	2.7	0.0	2.8	17.9	19.3
amphipoda unidentified juveniles	1.7	0.0	0.2	1.3	0.0
euphausia pacifica	0.0	0.1	0.0	0.0	0.0
larvacean larvaceans	0.3	0.8	0.0	0.7	1.2
aglantha sp.	0.1	0.1	1.1	0.2	0.0
conchoecia sp.	13.0	10.3	3.2	5.1	0.0
nectophore bracts	1.3	0.9	2.1	0.9	0.0
acartia longiremis .le.s4/5	0.0	0.0	0.0	0.0	1.2
acartia longiremis s6m	0.0	0.0	0.0	0.0	1.2
calanus tenuicornis .le.s4	0.0	0.0	0.7	0.0	0.0
calanus tenuicornis s5	0.0	0.0	0.8	0.0	0.0
calanus tenuicornis s6m	0.0	0.0	0.2	0.0	0.0
calanus tenuicornis s6f	0.0	0.0	0.4	0.2	0.0
eucalanus bungi s3	1.3	1.6	0.7	3.5	4.5
eucalanus bungi s4	7.5	2.8	2.4	17.7	23.8
eucalanus bungi s5m	2.8	0.9	0.9	2.2	14.7
eucalanus bungi s5f	3.7	1.1	0.9	8.8	15.9
eucalanus bungi s6m	0.5	0.7	0.0	0.0	1.2
eucalanus bungi s6f	3.3	1.5	1.7	10.7	12.6
euchaeta japonica s1/2	0.0	0.2	0.2	0.0	0.0
euchaeta japonica s4	0.0	0.1	0.0	0.0	0.0
euchaeta japonica s6m	0.0	0.1	0.0	0.0	0.0
metridia sp. .le.s3	9.5	10.2	61.3	37.9	49.9
metridia sp. s4	10.0	6.4	22.7	19.2	4.5
metridia pacifica s5m	10.1	3.1	12.6	11.0	36.3
metridia pacifica s5f	6.0	1.0	8.3	5.1	32.9
metridia pacifica s6f	2.0	0.6	2.4	18.3	22.7
neocalanus cristatus s1	0.0	0.3	1.1	4.8	0.0

neocalanus cristatus s2	0.0	0.1	0.7	5.7	0.0
neocalanus cristatus s3	0.0	0.0	0.2	3.1	0.0
neocalanus cristatus s4	4.7	1.5	1.7	4.4	40.9
neocalanus cristatus s5	4.6	7.2	0.2	0.3	9.4
neocalanus plumchrus s4	19.1	0.0	0.7	7.3	116.9
neocalanus plumchrus s5	8.3	0.1	0.7	0.0	17.0
oithona helgolanoica	3.8	0.4	3.6	11.2	143.0
oithona spinirostris	3.3	0.6	14.3	82.0	36.3
pseudocala sp. .le.s3	0.2	0.2	0.0	0.0	0.0
pseudocala sp. s4	3.7	0.1	0.0	0.2	5.7
pseudocala sp. s5m	1.8	0.0	0.0	0.4	9.1
pseudocala sp. s5f	1.3	0.0	0.0	0.0	13.6
pseudocala sp. s6m	1.0	0.0	0.0	0.0	3.4
pseudocala sp. s6f	4.8	0.0	0.0	0.9	9.1
scolecithr minor .le.s4	1.2	0.2	0.4	8.6	2.3
scolecithr minor s5	0.8	0.1	1.5	2.7	0.0
scolecithr minor s6m	0.2	0.0	2.6	0.7	1.2
scolecithr minor s6f	1.0	0.2	2.6	2.9	4.5
aetideus armatus s6f	0.2	0.1	0.9	0.0	0.0
aetideus armatus s6m	0.3	0.0	0.0	0.0	0.0
aetideus armatus s5	0.0	0.1	0.0	0.0	0.0
candacia bipinnata s6f	0.0	0.1	0.0	0.0	0.0
candacia columbiae s6m	0.0	0.1	0.0	0.0	0.0
candacia columbiae .le.s4	0.0	0.2	0.0	0.0	0.0
chiridius gracilis .le.s4	0.0	0.0	0.0	0.0	3.4
clausocala sp. s6f	0.2	0.2	0.0	0.2	2.3
clausocala sp. s5	0.0	0.0	0.0	0.0	1.2
clione sp.	0.2	0.4	3.6	1.1	3.4
crust:mala isopoda cryptoniscid	0.2	0.0	0.4	0.0	0.0
vert:fish larvae	0.0	0.0	0.1	0.5	0.0
gaetanus sp. .le.s4	0.5	0.5	0.0	0.0	0.0
lucicutia sp. s6m	0.0	0.0	0.4	0.2	0.0
microcalan sp. s5	1.5	0.8	8.1	3.8	2.3
microcalan sp. s6f	0.2	0.2	0.0	0.0	0.0
nematoscel sp.	0.0	0.1	0.0	0.0	0.1
oncaea sp.	2.7	0.1	0.0	1.8	6.8
pleuromamm scutullata .le.s4	0.2	0.0	0.0	0.0	0.0
racovitzan antarctious s6f	0.3	1.8	0.0	0.0	0.0
racovitzan antarcticus s5	1.2	0.7	0.0	0.0	0.0
racovitzan antarcticus .le.s4	0.2	0.2	0.0	0.0	0.0
sagitta scrippsae	0.0	0.1	0.0	0.0	0.0
chord:uroc thali:salp	1.3	0.1	0.0	0.5	0.1
tomopteris septentriona	0.1	0.1	0.0	0.2	0.0
arthropoda crust:cope unidentified	0.8	0.3	0.0	0.0	0.0
limacina sp.	4.2	0.0	3.2	13.7	42.0
decapoda squid juvenile	0.0	0.0	0.1	0.0	0.0
neocalanus plumchrus var.1/2 1/2	6.1	0.1	0.0	0.0	11.4
neocalanus plumchrus var.1/2 3	10.5	0.1	0.0	4.0	69.2
neocalanus plumchrus var.2 5	11.6	0.2	0.9	0.4	7.9

"funny thing"	0.7	1.7	13.5	0.0	1.2
heterostyl sp. .le.4	0.0	0.4	0.0	0.0	0.0
amphipoda shovel_head	0.1	0.0	0.0	0.0	0.0
pteropod big triangle	0.1	0.0	0.0	0.0	1.2
limacina large	0.1	0.0	0.1	0.0	0.0

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Total Abundance (no./m**3)

Taxon	13-6	13-7
sagitta elegans	0.1	0.1
eukrohnia hamata	0.3	0.4
euphausid larva	6.8	0.0
acartia longiremis s6m	2.3	0.0
eucalanus bungi s3	2.3	0.7
eucalanus bungi s4	0.0	2.7
eucalanus bungi s5m	6.8	0.0
eucalanus bungi s5f	4.5	0.0
eucalanus bungi s6f	6.2	0.0
metridia sp. .le.s3	4.5	0.0
metridia sp. s4	2.3	0.0
metridia pacifica s5m	68.1	0.0
metridia pacifica s5f	22.7	0.0
neocalanus cristatus s4	0.0	0.2
neocalanus cristatus s5	0.1	0.9
neocalanus plumchrus s4	61.3	0.0
neocalanus plumchrus s5	65.9	1.4
oithona helgolanoica	517.9	1819.8
pseudocala sp. .le.s3	70.3	7.9
pseudocala sp. s4	131.8	7.9
pseudocala sp. s5m	47.7	2.7
pseudocala sp. s5f	38.6	2.7
pseudocala sp. s6m	6.8	0.0
pseudocala sp. s6f	106.8	0.0
clausocala sp. s6f	9.1	0.0
clausocala sp. s5	6.8	0.0
clausocala sp. .le.s4	6.8	0.0
limacina sp.	2.3	2.0
neocalanus plumchrus var.1/2 1/2	88.6	18.6
neocalanus plumchrus var.1/2 3	88.6	0.7
neocalanus plumchrus var.2 5	141.2	0.0

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Total Abundance (no./m**3)

Taxon	14-1	14-2	14-3	14-4	14-5
parathemis sp.	0.3	0.4	0.0	0.0	0.7
euprimno sp.	0.1	0.1	0.0	0.0	0.0
cyphocaris sp.	0.1	0.1	0.0	0.0	0.0
chaetognat unidentified juveniles	3.2	1.6	0.0	5.8	1.8
sagitta elegans	0.1	0.2	0.0	0.0	0.0
eukrohnia hamata	4.1	3.2	0.0	12.0	21.5
euphausid larva	1.7	0.0	0.0	8.5	15.4
amphipoda unidentified juveniles	0.9	0.3	0.0	1.9	4.2
euphausia pacifica	0.1	0.1	0.0	0.0	0.0
larvacean larvaceans	0.3	0.3	0.0	0.0	1.2
aglantha sp.	0.1	0.0	0.0	0.9	0.1
conchoecia sp.	6.3	7.2	0.0	6.6	0.0
nectophore bracts	0.5	1.4	0.0	0.8	0.0
calanus pacificus .le.s5	0.2	0.1	0.0	0.0	0.0
calanus tenuicornis s5	0.0	0.0	0.0	0.3	0.0
calanus tenuicornis s6f	0.0	0.0	0.0	0.3	0.0
eucalanus bungi s3	0.3	0.3	0.0	0.8	0.0
eucalanus bungi s4	3.1	0.9	0.0	7.2	12.5
eucalanus bungi s5m	1.7	0.3	0.0	0.8	2.4
eucalanus bungi s5f	1.5	0.3	0.0	2.5	7.7
eucalanus bungi s6m	0.6	0.3	0.0	0.0	0.0
eucalanus bungi s6f	2.2	0.9	0.0	4.6	8.4
euchaeta japonica s1/2	0.0	0.3	0.0	0.0	0.0
euchaeta japonica s3	0.0	0.1	0.0	0.0	0.0
euchaeta japonica s4	0.0	0.1	0.0	0.0	0.0
euchaeta japonica s5m	0.0	0.1	0.0	0.0	0.0
euchaeta japonica s6m	0.1	0.1	0.0	0.0	0.0
euchaeta japonica s6f	0.1	0.1	0.0	0.0	0.0
metridia sp. .le.s3	7.0	5.8	0.0	22.6	41.6
metridia sp. s4	4.3	2.4	0.0	9.6	1.2
metridia pacifica s5m	2.4	0.6	0.0	5.5	3.6
metridia pacifica s5f	2.6	0.4	0.0	4.1	4.2
metridia pacifica s6m	0.0	0.1	0.0	0.0	0.0
metridia pacifica s6f	2.6	1.0	0.0	2.7	41.6
neocalanus cristatus s1	0.0	0.0	0.0	8.0	0.0

neocalanus cristatus s2	0.0	0.0	0.0	3.6	3.0
neocalanus cristatus s3	0.2	0.0	0.0	1.7	2.4
neocalanus cristatus s4	3.1	0.3	0.0	0.8	22.6
neocalanus cristatus s5	4.1	8.1	0.0	0.1	6.0
neocalanus plumchrus s4	13.3	0.1	0.0	0.3	21.4
neocalanus plumchrus s5	5.0	0.0	0.0	0.0	1.8
oithona helgolanoica	1.2	0.1	0.0	22.0	55.8
oithona spinirostris	5.2	0.9	0.0	70.9	10.7
pseudocala sp. .le.s3	0.9	0.0	0.0	0.0	0.0
pseudocala sp. s4	2.3	0.0	0.0	0.0	3.6
pseudocala sp. s5m	2.3	0.1	0.0	0.0	4.2
pseudocala sp. s5f	1.4	0.0	0.0	0.0	6.5
pseudocala sp. s6m	0.5	0.0	0.0	0.3	2.4
pseudocala sp. s6f	4.0	0.0	0.0	0.3	4.2
scolecithr minor .le.s4	1.1	0.2	0.0	6.0	1.8
scolecithr minor s5	0.3	0.2	0.0	1.4	1.8
scolecithr minor s6m	0.2	0.0	0.0	0.0	0.0
scolecithr minor s6f	0.6	0.3	0.0	3.8	3.0
aetideus armatus s6f	0.0	0.1	0.0	0.0	0.0
aetideus armatus s6m	0.0	0.1	0.0	0.0	0.0
aetideus armatus s5	0.2	0.2	0.0	0.0	0.0
aetideus armatus .le.s4	0.0	0.1	0.0	0.0	0.0
candacia columbiae s6f	0.0	0.2	0.0	0.0	0.0
candacia columbiae s6m	0.2	0.1	0.0	0.0	0.0
candacia columbiae .le.s4	0.3	1.0	0.0	0.0	0.0
clausocala sp. s6f	0.0	0.0	0.0	0.0	0.6
clione sp.	0.7	0.5	0.0	0.8	0.6
vert:fish larvae	0.1	0.0	0.0	0.0	0.0
gaetanus sp. .le.s4	1.2	1.4	0.0	0.0	0.0
heterorhab tanneri s6f	0.0	0.1	0.0	0.0	0.0
heterorhab tanneri s6m	0.2	0.0	0.0	0.0	0.0
lucicutia sp. .le.s4	0.0	0.0	0.0	1.7	0.0
lucicutia sp. s5	0.0	0.0	0.0	0.3	0.0
microcalan sp. s5	1.1	0.7	0.0	12.1	3.0
nematosoel sp.	0.1	0.1	0.0	0.0	0.0
oncaea sp.	2.4	3.1	0.0	0.3	0.0
annelida polychaeta larvae	0.2	0.0	0.0	0.0	0.6
racovitzan antarcticus s6f	0.3	1.0	0.0	0.0	0.0
racovitzan antarcticus s5	0.0	0.6	0.0	0.0	0.0
racovitzan antarcticus .le.s4	0.0	0.2	0.0	0.0	0.0
sagitta scrippsae	0.1	0.2	0.0	0.0	0.0
chord:uroc thali:salp	1.8	0.1	0.0	0.0	1.1
tomopteris septentriona	0.1	0.1	0.0	0.0	0.0
arthropoda crust:cope unidentified	0.3	0.4	0.0	0.3	0.0
limacina sp.	2.4	0.0	0.0	9.9	11.9
beroe spp.	0.0	0.1	0.0	0.0	0.0
decapoda squid juvenile	0.1	0.0	0.0	0.0	0.0
phronima spp.	0.0	0.1	0.0	0.0	0.0
neocalanus plumchrus var.1/2 1/2	7.0	0.5	0.0	0.0	4.7

neocalanus plumchrus var.1/2 3	7.8	0.1	0.0	0.5	32.0
neocalanus plumchrus var.2 5	6.7	0.3	0.0	0.8	1.8
"funny thing"	1.2	1.5	0.0	4.9	0.0
heterostyl sp. .1e.4	0.8	0.4	0.0	0.0	0.0
heterostyl sp. 6f	0.0	0.1	0.0	0.0	0.0
amphipoda shovel_head	0.0	0.0	0.0	0.0	0.1
pteropod small triangle	0.1	0.0	0.0	0.3	0.0

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Total Abundance (no./m**3)

Taxon	14-6	14-7
parathemis sp.	2.3	0.0
sagitta elegans	0.1	0.0
eukrohnia hamata	7.8	0.6
euphausid larva	0.0	2.1
amphipoda unidentified juveniles	0.0	2.1
acartia longiremis s6m	6.3	0.0
eucalanus bungi s6m	0.0	0.1
eucalanus bungi s6f	0.1	0.0
metridia sp. .le.s3	296.2	10.3
metridia sp. s4	33.6	0.0
metridia pacifica s5m	81.9	0.0
metridia pacifica s5f	88.2	0.0
metridia pacifica s6f	31.5	0.0
neocalanus cristatus s4	0.0	1.6
neocalanus cristatus s5	1.7	0.1
neocalanus plumchrus s4	205.8	12.2
neocalanus plumchrus s5	79.9	2.2
oithona helgolanoica	453.8	1177.6
oithona spinirostris	2.1	0.0
pseudocala sp. .le.s3	25.2	107.1
pseudocala sp. s4	98.7	107.1
pseudocala sp. s5m	31.5	41.2
pseudocala sp. s5f	42.0	35.0
pseudocala sp. s6m	27.3	16.5
pseudocala sp. s6f	56.7	70.0
clausocala sp. s6f	4.2	0.0
clausocala sp. s5	2.1	4.1
clausocala sp. .le.s4	12.6	0.0
limacina sp.	12.6	2.1
neocalanus plumchrus var.1/2 1/2	100.8	96.8
neocalanus plumchrus var.1/2 3	84.0	17.5
neocalanus plumchrus var.2 5	113.4	22.9
"funny thing"	2.1	0.0
heterostyl sp. 6f	0.0	0.1

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Total Abundanoe (no./m**3)

Taxon	G-1	G-2	G-3	G-4	G-5
euprimno sp.	0.1	0.2	0.1	0.2	0.0
cyphocaris sp.	0.1	0.1	0.0	0.1	0.0
chaetognat unidentified juveniles	0.4	1.0	0.1	1.4	0.0
sagitta elegans	0.0	0.1	1.7	0.1	0.1
eukrohnia hamata	2.6	2.7	0.1	17.9	20.8
euphausid larva	0.1	0.0	0.4	6.2	20.2
amphipoda unidentified juveniles	0.2	0.2	1.2	1.4	0.0
euphausia pacifica	0.0	0.1	0.1	0.0	0.0
larvacean larvaceans	0.3	5.7	3.1	5.2	3.5
aglantha sp.	0.1	0.1	0.2	0.1	0.0
conchoecia sp.	3.8	17.5	13.3	9.6	0.9
nectophore braots	0.0	5.2	1.4	5.5	0.0
calanus pacifious .le.s5	1.7	0.0	0.1	0.3	0.0
calanus tenuicornis s5	0.0	0.0	0.0	0.3	0.0
calanus tenuicornis s6f	0.0	0.0	0.2	0.0	0.0
eucalanus bungi s3	0.2	2.5	0.2	1.4	0.9
eucalanus bungi s4	4.8	5.7	2.3	17.5	26.7
eucalanus bungi s5m	1.0	1.5	3.3	11.7	15.6
eucalanus bungi s5f	1.1	1.5	2.7	11.0	14.7
eucalanus bungi s6m	0.1	0.3	0.0	0.3	0.0
eucalanus bungi s6f	0.7	2.1	3.6	17.1	6.5
euchaeta japonica s1/2	0.0	0.5	0.0	0.0	0.0
euchaeta japonioa s3	0.0	0.3	0.2	0.7	0.0
euchaeta japonica s4	0.0	0.0	0.1	0.0	0.9
euchaeta japonica s5m	0.1	0.0	0.0	0.0	0.0
euchaeta japonica s5f	0.1	0.0	0.0	0.0	0.0
euchaeta japonica s6m	0.0	0.1	0.0	0.2	0.3
euchaeta japonica s6f	0.1	0.1	0.1	0.2	0.7
metridia sp. .le.s3	2.5	20.9	9.3	16.2	14.1
metridia sp. s4	2.4	10.4	3.7	13.1	7.9
metridia pacifica s5m	0.9	1.0	0.0	3.1	8.8
metridia pacifica s5f	0.6	0.8	0.8	3.4	0.9
metridia paoifica s6m	0.6	0.0	0.0	0.0	0.0
metridia paoifica s6f	1.2	0.8	15.4	3.4	6.1
neooalanus cristatus s1	0.0	0.0	0.0	1.4	0.0

neocalanus cristatus s2	0.0	0.5	0.2	1.4	1.8
neocalanus cristatus s3	0.0	0.0	0.1	0.7	0.9
neocalanus cristatus s4	0.0	0.7	0.7	1.0	12.5
neocalanus cristatus s5	0.1	2.4	3.8	5.6	5.8
neocalanus plumchrus s4	0.0	0.2	0.0	0.0	93.0
neocalanus plumchrus s5	0.1	0.2	0.3	2.1	27.6
oithona helgolanoica	0.6	2.4	1.8	6.2	0.9
oithona spinirostris	0.3	7.1	3.9	41.3	11.4
pseudocala sp. .le.s3	0.0	0.0	0.1	0.0	4.4
pseudocala sp. s4	0.0	0.3	0.0	0.0	2.7
pseudocala sp. s5m	0.0	0.0	0.0	0.0	6.1
pseudocala sp. s5f	0.0	0.0	0.0	0.0	1.8
pseudocala sp. s6m	0.0	0.0	0.1	0.0	1.8
pseudocala sp. s6f	0.0	0.5	0.1	1.7	6.1
scolecithr minor .le.s4	0.3	0.0	0.1	1.7	7.9
scolecithr minor s5	0.4	0.0	0.2	0.3	3.5
scolecithr minor s6m	0.0	0.0	0.0	0.3	0.0
scolecithr minor s6f	0.3	0.5	0.4	1.0	6.1
aetideus armatus s6f	0.0	0.0	0.1	0.3	0.0
aetideus armatus .le.s4	0.0	0.2	0.0	0.0	0.0
mollusca bivalva larva	0.0	0.0	0.0	0.0	0.0
candacia bipinnata s6f	0.0	0.0	0.1	0.0	0.0
candacia columbiae s6f	0.1	0.0	0.0	0.0	0.0
candacia columbiae s5	0.0	0.0	0.1	0.0	0.0
candacia columbiae .le.s4	0.1	0.0	0.4	0.3	1.8
clione sp.	0.3	6.6	5.9	2.7	3.5
corycaeus sp.	0.0	0.0	0.3	0.0	0.0
crust:mala isopoda cryptoniscid	0.0	0.2	0.1	0.0	0.0
cyphonaute larva	0.0	0.0	0.1	0.0	0.0
euchaeta sp.	0.6	0.0	0.0	0.0	0.0
gaetanus sp. s6f	0.3	0.7	1.9	0.7	0.0
gaetanus sp. s5	0.1	0.2	0.0	0.7	0.0
gaetanus sp. .le.s4	2.4	3.4	0.0	4.8	0.0
heterorhab sp. s6m	0.1	0.0	0.0	0.0	0.0
heterorhab tanneri s6f	0.1	0.3	0.0	0.0	0.0
heterorhab tanneri s6m	0.0	0.2	0.0	0.0	0.0
hyperia sp.	0.0	0.1	0.0	0.0	0.0
microcalan sp. s5	0.6	0.3	0.1	1.0	0.0
microcalan sp. s6f	0.1	0.0	0.0	0.0	0.0
microcalan sp. s6m	0.1	0.0	0.0	0.0	0.0
deca:natan natantia	0.1	0.0	0.0	0.1	0.0
nematoscel sp.	0.1	0.0	0.1	0.1	0.0
oncaea sp.	8.0	1.0	0.1	0.0	0.0
pleuromamm sp.	0.2	0.0	0.0	1.4	0.0
pleuromamm scutullata s6f	0.0	3.0	3.9	13.8	0.0
pleuromamm scutullata s6m	0.1	0.0	0.0	1.4	0.0
pleuromamm scutullata s5	0.1	0.7	0.1	0.0	0.0
racovitzan antarcticus s6f	0.3	0.3	0.0	0.0	0.0
racovitzan antarcticus s5	0.0	0.3	0.0	0.0	0.0

chord:uroc thali:salp	0.0	0.0	0.4	0.9	0.9
soina sp.	0.1	0.0	0.0	0.0	0.0
thysanoess rasohii	0.0	0.1	0.0	0.0	0.0
tomopteris septentriona	0.0	0.7	0.1	0.1	0.9
arthropoda crust:cope unidentified	1.4	0.0	0.0	0.0	0.0
arthropoda euphausid unidentified	0.0	0.1	0.0	0.0	0.0
limacina sp.	0.0	0.0	0.2	0.3	24.6
decapoda squid juvenile	0.0	0.0	0.0	0.1	0.1
neocalanus spp. s1/2	0.0	0.0	0.0	0.7	0.0
neocalanus plumchrus var.1/2 1/2	0.1	0.7	0.0	0.3	26.3
neocalanus plumchrus var.1/2 3	0.0	0.3	0.4	0.0	55.3
neocalanus plumchrus var.2 5	0.7	1.0	0.9	0.0	8.5
"funny thing"	0.0	3.5	2.6	0.7	0.0
heterostyl sp. .le.4	0.8	0.0	0.0	0.0	0.0
heterostyl sp. 6m	0.1	0.0	0.0	0.0	0.0
heterostyl sp. 6f	0.1	0.0	0.0	0.0	0.0
scaphocala magnus 5	0.1	0.0	0.0	0.0	0.0
scaphocala magnus 6f	0.1	0.0	0.0	0.0	0.0
lophothrix frontalis 6f	0.1	0.2	0.1	0.0	0.0
euchaeta (big) 6f	0.1	0.0	0.0	0.0	0.0
paraeuchae glacialis 6m	0.1	0.0	0.0	0.0	0.0
paraeuchae spinifera 6m	0.1	0.0	0.0	0.0	0.0
haloptilus pseudocxycep ?w	0.1	0.0	0.0	0.0	0.0
haloptilus pseudocxycep 6f	0.1	0.0	0.0	0.0	0.0
lucicutia ovalis 5	0.0	0.0	0.0	0.0	0.9
lucicutia ovalis 6f	0.0	0.0	0.0	0.3	0.0
pteropod small triangle	0.0	0.0	0.0	0.0	0.1

Cruise 84-02

Total Abundance (no./m**3)

Taxon	G-6
parathemis sp.	5.5
chaetognat unidentified juveniles	3.4
sagitta elegans	2.3
eukrohnia hamata	0.4
euphausid larva	1.7
amphipoda unidentified juveniles	3.4
euphausia pacifica	2.3
thysanoess spinifera	0.1
aglantha sp.	8.8
conchoecia sp.	1.7
calanus pacifious .le.s5	1.7
eucalanus bungi s4	0.9
eucalanus bungi s5m	0.9
euchaeta japonica s6f	1.4
metridia sp. s4	1.7
metridia pacifica s5m	11.9
metridia pacifica s5f	1.7
metridia pacifica s6f	25.5
neocalanus cristatus s5	0.6
neocalanus plumchrus s4	1.7
neocalanus plumchrus s5	9.5
oithona helgolancica	217.9
oithona spinirostris	3.4
pseudocala sp. .le.s3	28.9
pseudocala sp. s4	86.8
pseudocala sp. s5m	46.0
pseudocala sp. s5f	37.4
pseudocala sp. s6m	13.6
pseudocala sp. s6f	81.7
aegina sp.	0.1
nematoscel sp.	0.7
chord:uroc thali:salp	0.9
tomopteris septentriona	0.7
decapoda squid juvenile	0.1
neocalanus plumchrus var.1/2 1/2	30.6

neocalanus plumchrus var.1/2 3	8.5
neocalanus plumchrus var.2 4	1.7
neocalanus plumchrus var.2 5	195.7
amphipoda shovel_head	0.1

Cruise 84-02

Total Abundance (no./m**3)

Taxon	J-1	J-2	J-4	J-5	J-6
parathemis sp.	0.1	0.9	0.1	0.0	0.0
euprimno sp.	0.1	0.1	0.0	0.0	0.0
cyphocaris sp.	0.1	0.0	0.0	0.1	0.0
chaetognat unidentified juveniles	0.2	1.4	0.3	0.3	0.7
sagitta elegans	0.0	0.2	0.0	0.0	0.1
eukrohnia hamata	1.9	5.0	0.7	3.4	9.9
unidentifi eggs	0.0	0.0	0.2	0.9	0.7
euphausid larva	0.1	0.1	1.1	6.9	13.1
decapod larva	0.0	0.1	0.0	0.0	0.0
amphipoda unidentified juveniles	0.0	0.5	0.2	1.8	1.3
euphausia pacifica	0.1	0.1	0.1	0.0	0.0
thysanoess spinifera	0.1	0.0	0.0	0.0	0.0
larvacean larvaceans	0.5	2.6	0.0	0.0	0.0
aglantha sp.	0.1	0.0	0.4	0.1	0.0
conchoecia sp.	5.0	11.5	2.9	0.9	0.0
nectophore braots	0.0	1.0	1.1	4.1	0.0
calanus pacificus .le.s5	0.7	0.1	0.1	0.0	1.3
calanus sp. s1/2	0.1	0.0	0.0	0.3	0.0
calanus tenuicornis s6f	0.0	0.0	0.1	0.3	0.0
eucalanus bungi s3	0.1	0.6	0.1	0.9	0.0
eucalanus bungi s4	1.4	4.6	2.5	8.5	20.3
eucalanus bungi s5m	0.8	0.7	3.9	13.0	5.2
eucalanus bungi s5f	0.6	0.6	3.5	18.1	20.9
eucalanus bungi s6m	0.1	1.8	0.1	1.5	16.3
eucalanus bungi s6f	0.1	0.7	3.5	10.9	3.4
euchaeta japonica s1/2	0.1	0.0	0.0	0.0	0.0
euchaeta japonica s3	0.1	0.1	0.1	0.0	0.0
euchaeta japonica s4	0.1	0.1	0.2	0.0	0.0
euchaeta japonica s5m	0.1	0.1	0.0	0.0	0.0
euchaeta japonica s5f	0.1	0.1	0.0	0.0	0.0
euchaeta japonica s6m	0.1	0.1	0.1	0.0	0.0
euchaeta japonica s6f	0.3	0.2	0.0	0.0	0.0
metridia sp. .le.s3	1.3	10.0	18.5	13.0	17.7
metridia sp. s4	2.0	3.5	4.3	3.3	2.0
metridia pacifica s5m	0.9	3.4	2.1	8.2	11.1

metridia pacifica s5f	1.0	2.8	0.9	3.3	13.7
metridia pacifica s6m	0.2	0.0	0.1	0.0	0.0
metridia pacifica s6f	1.7	5.1	2.2	3.6	7.9
neocalanus cristatus s2	0.0	0.1	0.1	0.6	0.0
neocalanus cristatus s3	0.0	0.0	0.1	0.0	5.2
neocalanus cristatus s4	0.0	0.2	0.4	0.9	9.2
neocalanus cristatus s5	0.1	4.6	0.4	0.1	2.0
neocalanus plumchrus s4	0.1	0.1	0.8	0.6	44.5
neocalanus plumchrus s5	0.0	0.1	0.3	0.0	7.9
oithona helgolanoica	0.2	0.0	0.4	2.1	10.5
oithona spinirostris	0.3	0.1	4.5	21.8	7.9
pseudocala sp. .le.s3	0.0	0.0	0.0	0.0	2.0
pseudocala sp. s4	0.0	0.1	0.0	0.0	6.5
pseudocala sp. s5m	0.1	0.0	0.1	0.0	6.5
pseudocala sp. s5f	0.1	0.0	0.1	0.0	7.2
pseudocala sp. s6m	0.0	0.0	0.0	0.0	3.9
pseudocala sp. s6f	0.1	0.0	0.1	0.3	21.6
scolecithr minor .le.s4	0.1	0.2	0.1	0.0	2.0
scolecithr minor s5	0.1	0.2	0.1	0.9	4.6
scolecithr minor s6m	0.0	0.0	0.0	0.6	2.0
scolecithr minor s6f	0.1	0.1	0.6	4.2	5.2
aetideus armatus s6f	0.0	0.2	0.0	0.0	0.0
aetideus armatus .le.s4	0.0	0.1	0.0	0.0	0.0
candacia columbiae s6f	0.1	0.1	0.0	0.0	0.0
candacia columbiae s6m	0.1	0.0	0.0	0.0	0.0
candacia columbiae s5	0.0	0.0	0.1	0.0	0.0
candacia columbiae .le.s4	0.1	1.0	0.0	0.0	0.0
clione sp.	0.4	0.2	5.0	1.8	1.3
crust:mala isopoda cryptoniscid	0.0	0.0	0.7	0.0	0.0
euchaeta sp.	0.1	0.0	0.0	0.0	0.0
gaetanus sp. s6f	0.3	0.0	0.0	0.0	0.0
gaetanus sp. s5	0.0	0.0	0.1	0.0	0.0
gaetanus sp. .le.s4	1.2	2.7	0.1	0.0	0.0
heterorhab tanneri s6f	0.1	0.3	0.0	0.0	0.0
heterorhab tanneri s6m	0.1	0.1	0.0	0.0	0.0
heterorhab tanneri s5	0.1	0.0	0.0	0.0	0.0
heterorhab tanneri .le.s4	0.0	0.5	0.0	0.0	0.0
microcalan sp. s5	0.1	0.0	0.0	0.0	0.0
microcalan sp. s6f	0.1	0.0	0.0	0.0	0.0
microcalan sp. s6m	0.1	0.0	0.0	0.0	0.0
deca:natan natantia	0.1	0.0	0.0	0.0	0.0
nematoscel sp.	0.0	0.1	0.0	0.0	0.0
oncaea sp.	5.5	1.0	0.2	0.3	0.0
pleuromamm scutullata s6f	0.2	0.0	0.1	0.0	0.0
pleuromamm scutullata s6m	0.1	0.0	0.1	0.0	0.0
pleuromamm scutullata s5	0.1	0.0	0.0	0.0	0.0
racovitzan antarctious s6f	0.0	0.3	0.1	0.0	0.0
racovitzan antarctious s5	0.1	1.2	0.0	0.0	0.0
racovitzan antarcticus .le.s4	0.1	0.1	0.0	0.0	0.0

sagitta scrippsae	0.0	0.1	0.0	0.0	0.0
chord:uroc thali:salp	0.0	0.0	0.1	1.0	3.2
tomopteris septentriona	0.1	0.1	0.0	0.0	0.0
arthropoda crust:cope unidentified	0.9	0.0	0.0	0.0	0.0
limacina sp.	0.1	0.0	0.0	1.2	7.2
decapoda squid juvenile	0.0	0.1	0.0	0.0	0.0
neocalanus plumchrus var.1/2 1/2	0.1	0.3	0.1	1.8	5.9
neocalanus plumchrus var.1/2 3	0.0	0.5	0.3	0.6	27.5
neocalanus plumchrus var.2 5	0.4	0.2	1.5	0.6	36.0
"funny thing"	0.2	0.6	2.8	0.0	0.0
heterostyl sp. .le.4	1.0	0.0	0.0	0.0	0.0
heterostyl sp. 5	0.1	0.0	0.0	0.0	0.0
heterostyl sp. 6m	0.1	0.0	0.0	0.0	0.0
heterostyl sp. 6f	0.1	0.0	0.0	0.0	0.0
amphipoda shovel_head	0.1	0.0	0.0	0.1	0.0
lophothrix frontalis 6f	0.1	0.0	0.0	0.0	0.0
euchaeta (big) 6f	0.1	0.0	0.0	0.0	0.0

Cruise 84-02

Total Abundance (no./m**3)

Taxon	J-7
sagitta elegans	0.6
eukrohnia hamata	0.5
unidentifi eggs	1.7
decapod larva	1.1
amphipoda unidentified juveniles	1.1
calanus pacificus .le.s5	2.9
eucalanus bungi s3	0.6
eucalanus bungi s4	6.3
eucalanus bungi s5m	1.2
eucalanus bungi s5f	1.2
eucalanus bungi s6m	0.3
eucalanus bungi s6f	1.0
euchaeta japonica s6m	0.1
euchaeta japonica s6f	0.1
metridia sp. .le.s3	10.8
metridia sp. s4	0.6
metridia pacifica s5m	3.4
metridia pacifica s5f	0.6
metridia pacifica s6f	2.9
neocalanus cristatus s3	0.6
neocalanus cristatus s4	0.6
neocalanus cristatus s5	0.6
neocalanus plumchrus s4	62.9
neocalanus plumchrus s5	26.0
oithona helgolanoica	1.1
oithona spinirostris	3.4
pseudocala sp. .le.s3	1.7
pseudocala sp. s4	15.9
pseudocala sp. s5m	8.5
pseudocala sp. s5f	14.1
pseudocala sp. s6m	2.3
pseudocala sp. s6f	28.9
aetideus armatus s5	0.6
arthropoda crust:cope unidentified	0.6
limacina sp.	8.5

neocalanus plumchrus var.1/2 1/2	34.0
neocalanus plumchrus var.1/2 3	74.8
neocalanus plumchrus var.2 4	1.1
neocalanus plumchrus var.2 5	106.0
amphipoda shovel_head	0.1

Cruise 84-02

Total Abundance (no./m**3)

Taxon	K-1	K-2	K-3	K-4	K-5
parathemis sp.	0.0	0.1	0.1	0.0	0.1
euprimno sp.	0.0	0.1	0.1	0.0	0.0
cyphocaris sp.	0.1	0.1	0.1	0.1	0.1
chaetognat unidentified juveniles	0.2	0.1	0.8	1.3	2.4
sagitta elegans	0.1	0.1	0.1	0.0	1.4
eukrohnia hamata	2.1	3.7	1.3	1.7	4.4
euphausid larva	0.1	0.1	0.1	3.2	7.8
amphipoda unidentified juveniles	0.0	0.0	0.4	0.5	1.5
euphausia pacifica	0.0	0.1	0.0	0.0	1.2
larvacean larvaceans	0.0	0.0	0.0	0.0	0.5
aglantha sp.	0.1	0.1	0.1	0.0	0.3
conchoecia sp.	0.6	7.9	11.6	6.3	1.0
nectophore bracts	0.1	1.2	1.6	2.0	0.0
calanus pacificus .le.s5	0.3	0.0	0.0	0.1	1.5
calanus tenuicornis .le.s4	0.0	0.0	0.0	0.1	0.0
calanus tenuicornis s6f	0.0	0.0	0.0	0.1	0.5
eucalanus bungi s3	0.2	0.3	0.3	0.2	1.5
eucalanus bungi s4	1.3	3.9	2.0	6.6	24.9
eucalanus bungi s5m	0.5	1.4	0.9	7.9	7.3
eucalanus bungi s5f	0.4	1.8	1.7	10.8	13.2
eucalanus bungi s6m	0.2	0.7	0.0	0.0	0.0
eucalanus bungi s6f	0.1	2.7	1.9	6.4	3.2
euchaeta japonica s1/2	0.0	0.4	0.4	0.0	0.0
euchaeta japonica s3	0.0	0.1	0.1	0.0	0.0
euchaeta japonica s5m	0.1	0.0	0.1	0.5	0.1
euchaeta japonica s5f	0.1	0.0	0.1	0.1	0.5
euchaeta japonica s6m	0.1	0.1	0.1	0.0	0.7
euchaeta japonica s6f	0.1	0.1	0.1	1.1	0.6
metridia sp. .le.s3	0.3	7.3	25.7	23.2	46.9
metridia sp. s4	1.1	3.2	3.0	1.2	3.4
metridia pacifica s5m	0.3	0.7	0.4	1.0	6.4
metridia pacifica s5f	0.1	0.2	0.6	0.2	4.4
metridia pacifica s6m	0.3	0.0	0.0	0.0	0.0
metridia pacifica s6f	0.2	0.1	0.5	1.5	6.4
neocalanus cristatus s1	0.0	0.0	0.1	0.3	0.0

neocalanus cristatus s2	0.0	0.0	0.1	0.6	1.0
neocalanus cristatus s3	0.0	0.0	0.1	0.6	2.4
neocalanus cristatus s4	0.1	0.3	0.1	0.1	4.9
neocalanus cristatus s5	1.7	1.0	0.1	1.8	5.9
neocalanus plumchrus s4	0.1	0.2	0.1	0.7	34.7
neocalanus plumchrus s5	0.0	0.1	0.0	0.1	6.4
oithona helgolanoica	0.1	0.1	0.2	2.3	20.5
oithona spinirostris	0.1	1.7	3.3	15.1	23.5
pseudocala sp. .le.s3	0.0	0.0	0.0	0.1	8.8
pseudocala sp. s4	0.1	0.1	0.1	0.0	23.9
pseudocala sp. s5m	0.1	0.0	0.0	0.0	12.7
pseudocala sp. s5f	0.1	0.0	0.1	0.0	10.8
pseudocala sp. s6m	0.0	0.0	0.0	0.0	8.8
pseudocala sp. s6f	0.1	0.1	0.1	0.3	33.7
scolecithr minor .le.s4	0.0	0.1	0.1	1.5	1.0
scolecithr minor s5	0.1	0.2	0.3	1.3	1.0
scolecithr minor s6m	0.0	0.0	0.0	0.5	0.5
scolecithr minor s6f	0.0	0.1	0.0	1.5	6.4
aegina sp.	0.0	0.1	0.0	0.1	0.1
aetideus armatus s6f	0.1	0.1	0.2	0.0	0.0
aetideus armatus s5	0.0	0.0	0.1	0.0	0.0
aetideus armatus .le.s4	0.0	0.1	0.0	0.0	0.0
candacia columbiae s6f	0.0	0.0	0.0	0.2	0.1
candacia columbiae s6m	0.0	0.0	0.0	0.0	0.1
candacia columbiae .le.s4	0.2	0.1	0.1	0.1	0.0
candacia sp. .le.s4	0.0	0.0	0.0	0.0	1.0
clione sp.	2.2	0.1	0.8	0.5	1.5
crust:mala isopoda cryptoniscid	0.1	0.0	0.3	0.1	0.5
euchaeta sp.	0.1	0.0	0.0	0.0	0.0
vert:fish larvae	0.1	0.1	0.1	0.1	0.0
gaetanus sp. s6f	0.0	0.1	0.3	0.5	0.0
gaetanus sp. s5	0.1	0.1	0.1	0.0	0.0
gaetanus sp. .le.s4	1.2	2.0	0.6	0.0	0.0
heterorhab tanneri s6f	0.0	0.1	0.0	0.0	0.0
hyperia sp.	0.0	0.0	0.1	0.0	0.0
microcalan sp. s5	0.0	0.1	0.0	0.7	0.0
microcalan sp. s6m	0.1	0.0	0.0	0.0	0.0
deca:natan natantia	0.0	0.1	0.0	0.1	0.0
nematoscel sp.	0.0	0.1	0.1	0.2	0.5
oncaea sp.	4.1	0.1	0.0	0.1	0.0
pleuromamm scutullata s6f	0.1	0.1	0.5	0.0	0.0
pleuromamm scutullata s6m	0.1	0.1	0.1	0.0	0.0
pleuromamm scutullata s5	0.1	0.0	0.0	0.0	0.0
racovitzan antarcticus s6f	0.1	0.6	0.0	0.0	0.0
racovitzan antarcticus s5	0.1	0.5	0.0	0.0	0.0
racovitzan antarcticus .le.s4	0.0	0.1	0.1	0.0	0.0
sagitta scrippsae	0.0	0.1	0.1	0.0	0.0
chord:uroc thali:salp	0.4	0.0	0.0	1.0	0.9
scina sp.	0.0	0.1	0.0	0.0	0.0

tomopteris septentriona	0.1	0.1	0.2	0.2	0.1
arthropoda crust:cope unidentified	0.4	0.5	0.0	0.0	0.0
arthropoda euphausid unidentified	0.1	0.0	0.0	0.0	0.0
limacina sp.	0.0	0.0	0.1	0.1	3.4
decapoda squid juvenile	0.0	0.0	0.1	0.0	0.1
neocalanus plumchrus var.1/2 1/2	0.0	0.3	0.1	0.1	20.0
neocalanus plumchrus var.1/2 3	0.0	0.1	0.1	0.4	17.6
neocalanus plumchrus var.2 5	0.2	0.3	0.2	1.0	60.6
neocalanus plumchrus var.2 6m	0.1	0.0	0.0	0.0	0.0
neocalanus plumchrus var.2 6f	0.1	0.0	0.0	0.0	0.0
"funny thing"	0.1	0.7	3.4	0.0	0.0
heterostyl sp. .le.4	0.7	0.1	0.0	0.0	0.0
heterostyl sp. 5	0.1	0.0	0.0	0.0	0.0
heterostyl sp. 6f	0.1	0.0	0.0	0.0	0.0
scaphocala magnus 5	0.1	0.0	0.0	0.0	0.0
lophothrix frontalis 5	0.1	0.0	0.0	0.0	0.0
lophothrix frontalis 6f	0.0	0.1	0.0	0.0	0.0
euchaeta (big) 6f	0.1	0.0	0.0	0.0	0.0
pleuromamm sp. .le.4	0.0	0.0	0.2	0.0	0.0

Cruise 84-02

Total Abundance (no./m**3)

Taxon	K-6
parathemis sp.	0.1
chaetognat unidentified juveniles	5.0
sagitta elegans	1.1
eukrohnia hamata	0.8
unidentifi eggs	3.5
crust:mala euphausiac juveniles	0.8
amphipoda unidentified juveniles	5.0
euphausia pacifica	1.2
thysanoess spinifera	0.1
aglantha sp.	0.5
conchoecia sp.	0.4
calanus pacificus .le.s5	0.8
eucalanus bungi s3	0.4
eucalanus bungi s4	13.1
eucalanus bungi s5m	2.3
eucalanus bungi s5f	1.9
eucalanus bungi s6f	0.2
euchaeta japonica s6m	0.2
euchaeta japonica s6f	0.3
metridia sp. .le.s3	24.3
metridia sp. s4	0.8
metridia pacifica s5m	6.2
metridia pacifica s5f	3.5
metridia pacifica s6f	7.3
neocalanus cristatus s3	0.4
neocalanus cristatus s4	0.4
neocalanus cristatus s5	1.6
neocalanus plumchrus s3	16.6
neocalanus plumchrus s4	25.4
neocalanus plumchrus s5	6.9
oithona helgolanoica	59.4
oithona spinirostris	0.8
pseudocala sp. .le.s3	11.6
pseudocala sp. s4	39.7
pseudocala sp. s5m	11.2

pseudocala sp. s5f	13.1
pseudocala sp. s6m	4.6
pseudocala sp. s6f	31.6
scolecithr minor s5	0.4
scolecithr minor s6f	0.8
nematoscel sp.	0.4
chord:uroc thali:salp	0.7
tessarabra oculatus	0.1
tomopteris septentriona	0.1
limacina sp.	7.3
neocalanus plumchrus var.1/2 1/2	13.9
neocalanus plumchrus var.2 5	50.1
amphipoda shovel_head	0.1

Cruise 84-02

Total Abundance (no./m**3)

Taxon	18-1	18-2	18-3	18-4	18-5
parathemis sp.	0.0	0.1	0.5	0.1	0.1
euprimno sp.	0.1	0.1	0.0	0.0	0.0
cyphocaris sp.	0.0	0.2	0.0	0.0	0.0
chaetognat unidentified juveniles	0.2	2.2	2.9	2.5	4.8
sagitta elegans	0.0	0.1	0.1	0.2	0.1
eukrohnia hamata	2.7	5.2	2.7	3.6	4.8
euphausid larva	0.1	0.1	0.1	0.6	10.7
amphipoda unidentified juveniles	0.0	0.6	0.2	0.0	0.0
euphausia pacifica	0.1	0.6	0.0	0.0	0.0
larvacean larvaceans	0.0	0.0	0.2	0.0	0.0
aglantha sp.	0.1	0.0	1.2	1.1	0.1
conchoecia sp.	5.7	8.1	5.5	3.0	1.8
nectophore bracts	0.0	0.6	1.6	0.3	2.4
calanus pacificus .le.s5	3.1	0.0	0.1	0.3	0.0
calanus tenuicornis s6m	0.0	0.0	0.0	0.3	0.0
calanus tenuicornis s6f	0.0	0.0	0.0	0.0	1.2
eucalanus bungi s3	0.1	0.4	0.2	0.6	1.2
eucalanus bungi s4	9.0	6.2	1.8	10.7	28.1
eucalanus bungi s5m	2.7	1.2	1.7	8.5	13.1
eucalanus bungi s5f	4.1	1.9	1.5	5.3	25.7
eucalanus bungi s6m	0.9	2.0	0.3	0.0	0.0
eucalanus bungi s6f	1.1	2.1	4.6	10.3	12.5
euchaeta japonica s1/2	0.7	0.0	0.1	0.3	0.0
euchaeta japonica s3	0.0	0.0	0.0	0.3	0.0
euchaeta japonica s4	0.1	0.2	0.0	0.3	0.0
euchaeta japonica s5m	0.1	0.1	0.0	0.0	0.0
euchaeta japonica s5f	0.1	0.1	0.1	0.0	0.0
euchaeta japonica s6m	0.1	0.1	0.0	0.0	0.0
euchaeta japonica s6f	0.1	0.2	0.0	0.0	0.0
metridia sp. .le.s3	1.4	3.6	3.8	41.3	49.6
metridia sp. s4	8.5	3.7	1.3	16.5	25.7
metridia pacifica s5m	4.9	1.5	0.1	2.5	5.4
metridia pacifica s5f	2.2	0.7	0.3	0.8	0.6
metridia pacifica s6m	0.6	0.0	0.0	0.0	0.0
metridia pacifica s6f	1.2	1.0	3.4	2.5	1.8

neocalanus cristatus s1	0.1	0.1	0.1	0.3	3.0
neocalanus cristatus s2	0.0	0.0	0.1	0.0	6.0
neocalanus cristatus s3	0.0	0.0	0.1	0.3	8.9
neocalanus cristatus s4	0.0	0.4	1.2	1.1	7.8
neocalanus cristatus s5	0.2	1.9	3.6	5.4	0.9
neocalanus plumchrus s4	0.6	0.2	1.0	3.0	2.4
neocalanus plumchrus s5	0.2	0.2	0.6	1.9	0.6
oithona helgolanoica	1.0	0.4	1.1	0.8	4.2
oithona spinirostris	0.9	0.0	2.6	7.7	82.3
pseudocala sp. s4	0.0	0.1	0.1	0.3	0.0
pseudocala sp. s5m	0.2	0.1	0.1	0.3	0.6
pseudocala sp. s5f	0.2	0.0	0.1	0.6	0.6
pseudocala sp. s6m	0.0	0.1	0.0	0.0	0.0
pseudocala sp. s6f	0.0	0.0	0.1	0.3	0.0
scolecithr minor .le.s4	0.1	0.1	0.1	0.3	1.2
scolecithr minor s5	0.1	0.4	0.2	0.8	0.6
scolecithr minor s6m	0.0	0.0	0.0	1.4	1.2
scolecithr minor s6f	0.1	0.3	0.1	0.6	2.4
aetideus armatus s6f	0.0	0.0	0.3	1.1	0.0
aetideus armatus s5	0.0	0.0	0.1	0.0	0.0
aetideus armatus .le.s4	0.0	0.1	0.0	0.0	0.0
candacia columbiae s6f	0.0	0.1	0.0	0.0	0.0
candacia columbiae .le.s4	0.0	0.1	0.0	0.6	0.0
candacia sp. .le.s4	0.0	0.0	0.6	0.0	0.0
clausocala sp. s6f	0.0	0.0	0.0	0.0	1.2
clausocala sp. s5	0.0	0.0	0.1	0.0	0.0
clione sp.	1.0	0.2	0.1	8.5	1.2
crust:mala isopoda cryptoniscid	0.0	0.0	0.1	0.3	0.0
vert:fish larvae	0.0	0.1	0.0	0.0	0.0
gaetanus sp. s6f	2.7	0.3	0.0	0.0	0.0
gaetanus sp. s5	0.1	0.0	0.0	0.0	0.0
gaetanus sp. .le.s4	3.2	2.0	0.3	0.0	0.6
heterorhab tanneri s6f	0.1	0.1	0.1	0.0	0.0
lucicutia sp. s5	0.0	0.0	0.1	0.0	0.0
lucicutia sp. s6m	0.0	0.0	0.0	0.3	0.0
lucicutia sp. s6f	0.0	0.0	0.0	0.3	0.0
microcalan sp. s5	0.6	0.0	0.4	1.4	2.4
microcalan sp. s6f	0.0	0.1	0.1	0.0	0.0
nematoscel sp.	0.1	0.1	0.0	0.0	0.1
oncaea sp.	9.3	0.1	0.2	0.6	0.6
pleuromamm scutullata s6f	2.2	0.0	0.1	0.3	0.6
pleuromamm scutullata s6m	0.3	0.0	0.0	0.0	0.0
pleuromamm scutullata .le.s4	0.6	0.0	0.0	0.0	0.0
annelida polychaeta larvae	0.1	0.0	0.1	0.0	0.0
racovitzan antarctious s6f	0.0	2.3	1.2	0.3	0.6
racovitzan antarctious s5	0.1	1.1	0.7	0.6	0.0
sagitta scrippsae	0.1	0.1	0.0	0.0	0.0
chord:uroc thali:salp	0.2	0.0	0.0	0.0	0.3
scina sp.	0.1	0.0	0.0	0.0	0.0

tomopteris septentriona	0.1	0.1	0.4	0.4	0.7
arthropoda crust:cope unidentified	1.4	0.5	0.3	0.0	0.0
limacina sp.	0.1	0.0	0.0	0.0	4.8
decapoda squid juvenile	0.0	0.1	0.0	0.0	0.0
phronima spp.	0.0	0.0	0.0	0.0	0.1
neocalanus plumchrus var.1/2 3	0.0	0.0	0.0	0.6	1.8
neocalanus plumchrus var.2 5	1.2	0.3	0.3	1.1	0.0
"funny thing"	0.2	0.2	1.8	3.0	3.0
heterostyl sp. .le.4	4.3	0.4	0.2	0.0	0.0
heterostyl sp. 5	0.1	0.0	0.0	0.0	0.0
heterostyl sp. 6f	0.3	0.0	0.0	0.0	0.0
scaphocala magnus 6f	0.2	0.0	0.0	0.0	0.0
lophothrix frontalis 5	0.1	0.0	0.0	0.0	0.0
lophothrix frontalis 6f	0.1	0.0	0.0	0.0	0.0
euchaeta (big) 6f	0.1	0.0	0.0	0.0	0.0
haloptilus pseudooxycep 6f	0.2	0.0	0.0	0.0	0.0
spinocalan sp.	0.1	0.0	0.0	0.0	0.0
centraugap macrodus	0.0	0.1	0.0	0.0	0.0

Cruise 84-02

Total Abundance (no./m**3)

Taxon	18-6	18-7	18-8
parathemis sp.	0.1	0.4	0.0
chaetognat unidentified juveniles	1.9	0.0	1.6
sagitta elegans	0.0	0.1	0.1
eukrohnia hamata	8.7	1.1	0.3
euphausid larva	3.0	0.8	0.0
amphipoda unidentified juveniles	0.0	2.4	5.0
aglantha sp.	0.1	0.0	0.0
conchoecia sp.	4.4	0.8	0.0
calanus pacificus .le.s5	0.5	1.6	0.0
calanus tenuicornis s5	0.7	0.0	0.0
calanus tenuicornis s6m	0.2	0.8	0.0
eucalanus bungi s3	0.9	0.0	0.0
eucalanus bungi s4	9.5	1.6	6.6
eucalanus bungi s5m	6.0	0.0	0.0
eucalanus bungi s5f	9.3	1.6	0.0
eucalanus bungi s6f	2.9	0.0	0.1
metridia sp. .le.s3	63.3	43.0	56.3
metridia sp. s4	8.6	2.4	1.6
metridia pacifica s5m	4.4	7.8	26.5
metridia pacifica s5f	1.2	0.8	3.3
metridia pacifica s6f	1.4	20.3	86.0
neocalanus cristatus s1	0.2	0.0	0.0
neocalanus cristatus s4	0.9	0.0	0.0
neocalanus cristatus s5	0.4	0.0	0.1
neocalanus plumchrus s4	36.7	139.1	132.4
neocalanus plumchrus s5	2.5	109.4	187.0
oithona helgolanoica	21.5	37.5	238.3
oithona spinirostris	4.6	4.7	6.6
pseudocala sp. .le.s3	0.0	6.2	26.5
pseudocala sp. s4	3.2	14.9	69.5
pseudocala sp. s5m	5.8	23.5	33.1
pseudocala sp. s5f	5.8	18.7	39.7
pseudocala sp. s6m	1.2	5.5	26.5
pseudocala sp. s6f	4.2	20.3	145.6
soolecithr minor .le.s4	0.7	0.0	0.0

scolecithr minor s5	2.5	0.8	0.0
scolecithr minor s6m	0.2	1.6	1.6
scolecithr minor s6f	1.6	0.8	1.6
clausocala sp. s6f	0.0	0.8	0.0
clausocala sp. s5	0.0	2.4	9.9
clausocala sp. .le.s4	0.0	0.8	0.0
clione sp.	1.4	2.4	1.6
heterorhab tanneri s6f	0.2	0.0	0.0
microcalan sp. s5	14.1	0.0	0.0
nematoscel sp.	0.0	0.1	0.0
chord:uroc thali:salp	4.1	1.8	0.4
arthropoda euphausid unidentified	0.0	0.0	0.1
limacina sp.	15.9	2.4	14.9
neocalanus plumchrus var.1/2 1/2	4.6	10.2	13.2
neocalanus plumchrus var.1/2 3	17.1	27.3	29.8
neocalanus plumchrus var.2 5	3.2	97.7	112.5
amphipoda shovel_head	0.1	0.1	0.0
pteropod small triangle	0.2	0.0	0.0

Cruise 84-02: Record of Bioness Samples and Depth Ranges

Station	Net	Sample number	Depth range (m)
1	1	1-1	0 - 250
	2	1-2	237 - 101
	3	1-3	102 - 76
	4	1-4	76 - 50
	5	1-5	50 27
	6	1 6	27 10
	7	1-7	10 0
3	1	3-1	0 - 249
	2	3-2	249 - 102
	3	3-3	102 - 75
	4	3-4	75 - 47
	5	3-5	46 - 24
	6	3-6	24 - 9
	7	3-7	9 - 0
5	1	5-1	0 - 252
	2	5-2	248 - 101
	3	5-3	101 - 79
	4	5-4	79 - 50
	5	5-5	50 - 26
	6	5-6	26 - 10
	7	5-7	10 - 0
6	1	6-1	0 - 254
	2	6-2	253 - 105
	3	6-3	105 77
	4	6-4	77 52
	5	6-5	52 - 26
	6	6-6	26 12
	7	6-7	12 0
7	1	7-1	7 - 250
	2	7-2	244 102
	3	7-3	102 77
	4	7-4	77 52
	5	7-5	26 - 12
	6	7-6	12 0
8	1	8-1	2 250
	2	8-2	247 103
	3	8-3	103 77
	4	8-4	77 53
	5	8-5	53 - 24
	6	8-6	24 - 10
	7	8-7	10 - 0
9	1	9-1	5 248
	2	9-2	240 - 103
	3	9-3	103 - 75
	4	9-4	75 - 53
	5	9-5	53 - 25
	6	9-6	25 - 11
	7	9-7	11 - 0

Station	Net	Sample number	Depth range (m)
11	1	11-1	2 - 245
	2	11-2	243 - 102
	3	11-3	102 - 77
	4	11-4	77 - 52
	5	11-5	52 - 26
	6	11-6	26 - 10
	7	11-7	10 - 0
13	1	13-1	5 - 240
	2	13-2	246 - 102
	3	13-3	102 - 77
	4	13-4	77 - 51
	5	13-5	51 - 24
	6	13-6	24 - 9
	7	13-7	9 - 0
14	1	14-1	1 - 248
	2	14-2	247 - 101
	3	14-3	101 - 75
	4	14-4	75 - 52
	5	14-5	52 - 26
	6	14-6	26 - 10
	7	14-7	10 - 0
G	1	G-1	400 - 253
	2	G-2	150 - 101
	3	G-3	101 - 77
	4	G-4	77 - 49
	5	G-5	49 - 24
	6	G-6	12 0
J	1	J-1	400 250
	2	J-2	250 148
	4	J-4	99 - 76
	5	J-5	76 - 50
	6	J-6	50 26
	7	J-7	27 - 8
K	1	K-1	400 237
	2	K-2	237 153
	3	K-3	153 - 76
	4	K-4	76 - 51
	5	K-5	51 25
	6	K-6	25 0
18	1	18-1	388 248
	2	18-2	248 - 152
	3	18-3	152 - 103
	4	18-4	103 - 76
	5	18-5	76 - 53
	6	18-6	53 - 27
	7	18-7	27 - 12
	8	18-8	12 - 0