



AUSTRALIAN NATIONAL ANTARCTIC RESEARCH EXPEDITIONS

# ANARE RESEARCH NOTES 58

Phytoplankton pigment data: Prydz Bay region -  
SIBEX II, MV *Nella Dan*, January 1985

Simon W. Wright

ANTARCTIC DIVISION  
AUSTRALIA

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DEPARTMENT OF THE ARTS, SPORT,  
THE ENVIRONMENT, TOURISM AND TERRITORIES

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PHYTOPLANKTON PIGMENT DATA:  
PRYDZ BAY REGION - SIBEX II, MV *NELLA DAN*, JANUARY 1985

by

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ABSTRACT

Phytoplankton samples were collected at hydrographic stations along seven north-south transects during the SIBEX II cruise (December 1984 - February 1985). Phytoplankton pigments were analysed using a high resolution high performance liquid chromatography technique which resolves virtually all known marker pigments. Data are presented for the abundance of twenty-seven pigments in the upper 200 m of the water column at each station. For each major marker pigment, north-south vertical sections are presented, as well as the geographic distribution of each pigment integrated from the surface to 100 m depth and the integrated ratio of that pigment to chlorophyll *a*. These represent the total abundance of the algal source and its relative proportion in the population, respectively.

# 1. INTRODUCTION

As part of Australia's ongoing participation in the international BIOMASS (Biological Investigations of Marine Antarctic Systems and Stocks) program, the Antarctic Division mounted a multidisciplinary marine science cruise to the region of Prydz Bay, Antarctica, during December 1984 - February 1985. This constituted the second phase of the Second International BIOMASS Experiment (SIBEX II). This report describes the distribution and abundance of phytoplankton pigments during that cruise.

The concentrations of various phytoplankton pigments in seawater provide a convenient estimate of the abundance and composition of phytoplankton populations. Chlorophyll *a* is present in all photosynthetic algae and is a commonly-used indicator of total phytoplankton abundance, being simple to measure, detectable at low concentrations, and degraded after the death of the cell. Other photosynthetic pigments (other chlorophylls, chlorophyll degradation products and carotenoids) indicate the composition of phytoplankton populations since they are restricted to particular classes of algae and may be used as markers for them in mixed populations (Jeffrey 1974, Gieskes and Kraay 1983, Foss et al. 1984, Guillard et al. 1985). These are shown in Table 1.

Until recently, lack of adequate chromatographic techniques has restricted the use of photosynthetic pigment markers. However recent advances in high performance liquid chromatography (HPLC) have allowed development of a system capable of resolving all known marker pigments (Wright and Shearer 1984). The data presented represent the first complete analysis of phytoplankton pigments in the Southern Ocean by HPLC.

# 2. METHODS

## 2.1 COLLECTION OF SAMPLES

Water samples were collected from MV *Nella Dan* at hydrographic stations taken along seven north-south transects at intervals of 5° longitude between 58° and 93° east, between 4 and 26 January 1985 (Figure 1). A General Oceanics rosette sampler equipped with twelve 5 L Niskin bottles was used to collect water samples from the upper 200 m of the water column. Standard depths for pigment analysis were 0, 10, 25, 35, 50, 75, 100, 200 m. A Neil Brown Mark 3 CTD was used to measure temperature and salinity in the vertical profile (reported in Kerry et al. 1987).

After samples were dispensed for analysis of oxygen, salinity, nutrients and phytoplankton species, the remaining 2-4 L were filtered under slight vacuum (approximately 0.5 Atm.) using Whatman GF/F filters (0.7 µm nominal pore size, 47 mm diameter). Magnesium carbonate was not used as a filter aid due to its ability to bind phaeophytins and chlorophyllides (Daley et al. 1973). The filters were immediately frozen in liquid nitrogen for return to the laboratory.

## 2.2 PIGMENT EXTRACTION

The frozen filter was broken into pieces of approximately 5 mm diameter, sonicated in 4 mL methanol using a Braun Labsonic 1510 sonicator equipped with a 4 mm diameter needle probe (30 seconds at 50 W), and filtered using a simple centrifugal system described by Wright and Shearer (1984). The filter debris was washed with 0.5 mL methanol and recentrifuged. The combined extract was filtered through a Millex-HV filter unit (0.5 µm

pore-size, Millipore Corp.). The sample was not concentrated prior to chromatography since this has been found to cause some degradation of chlorophyll *a* (Wright and Shearer 1984). The Sep-Pak purification step described in Wright and Shearer (1984) was omitted. This has been found to be unnecessary when dilute pigment extracts are used.

### 2.3 PIGMENT ANALYSIS

A sample of the extract (200  $\mu$ L) was injected directly into a Waters Associates liquid chromatograph. Two RCM-100 radial compression modules, containing Rad-Pak A cartridges (5  $\mu$ m particle size, octadecyl silica), were used in series, protected by a precolumn filter and an RCSS Guard-Pak. The pigments were eluted using a linear gradient from 90:10 acetonitrile:water to 100% ethyl acetate over 20 minutes at 2 mL/min. They were detected with a Waters 440 absorbance detector (wired to output the sum of absorbances at 405 and 436 nm) and integrated using a Waters Data Module. For small peaks, where the signal-to-noise ratio was low, the Data Module was found to be inaccurate. For these peaks, peak heights were measured manually and converted to pigment abundance using individual calibration curves. Initially, pigments could be identified only by comparison of retention times and co-chromatography with known standards, since there was insufficient material in most extracts to obtain absorption spectra. After all samples were analysed however, peak identities were confirmed by pooling, concentrating and rechromatographing the extracts. Absorption spectra were then taken on-stream using a Hewlett-Packard 8450A spectrophotometer.

## 3. RESULTS AND DISCUSSION

### 3.1 CHROMATOGRAPHY

Sixty-six pigments were resolved by the HPLC system, of which thirty-two have been identified to date. Figure 2 shows a chromatogram of a sample which contained most of the known pigments. The identities of the pigments and their retention times are given in Table 2. Most chromatograms were somewhat simpler than this example, being dominated by chlorophyll *a*, the diatom pigments fucoxanthin and diadinoxanthin, and 19'-hexanoyloxy-fucoxanthin (probably contributed by *Phaeocystis pouchetii*, Wright and Jeffrey 1987).

The HPLC system was able to separate all marker pigments known at the time of analysis. The system was not optimised to resolve chlorophyll *c*<sub>3</sub>, which has been discovered only recently (Jeffrey and Wright in press). Chlorophyll *c*<sub>3</sub> elutes with a cluster of other peaks just behind the solvent front (with retention times of between 2 and 3 minutes). These included chlorophyll *c*<sub>1</sub> plus *c*<sub>2</sub>, (two separate peaks representing the anionic and protonated forms of both species), chlorophyllide *a* and at least six other peaks which were not observed during characterisation of the system using cultured phytoplankton. Due to the small amount of material available, absorption spectra could not be obtained and these other peaks remain unidentified. Chlorophyllide *a* could be identified by measuring the ratios of the peak heights on the two channels of the detector output. It probably represents chlorophyll *a* degraded during the filtration process (Jeffrey and Hallegraeff 1987). Methyl chlorophyllide *a*, which elutes somewhat later (RT=7.00 min), is almost certainly an artefact of extraction in methanol and was included with chlorophyll *a* in estimation of 'total chlorophyll *a*' concentration along with small amounts of chlorophyll *a* epimer and allomer. The various chlorophyll *c* species were not sufficiently resolved to be identifiable by the peak height ratio. Consequently, the concentration data obtained for these pigments remain suspect, and will not be discussed further here.

### 3.2 PIGMENT DISTRIBUTION

Table 3 presents the abundance of selected pigments. For ease of interpretation, the figures are given as nanograms of pigment per litre of seawater. In this computer listing, values are given to eight significant figures in order to allow for the very wide range in concentrations of the various pigments. This should not be taken as an estimate of precision. In fact the expected precision for major pigments is  $\pm 2-5\%$ . Minor pigments (e.g. chlorophyll **b**) often approached or were below the limits of detection and their precision would be much poorer.

The vertical distribution of each of the major marker pigments along each north-south transect is presented in Figure 3. It should be noted that the computer algorithms employed in the construction of these contour maps interpolate between the data points (which are marked with crosses) and extrapolate trends into regions of missing data. Care should be used in interpretation of areas of the figures where data are scarce (particularly at depths of greater than 100 m).

In many cases the profiles showed great variation between adjacent depths. For the major pigments, this almost certainly represents patchiness in the distribution of phytoplankton in the water column, since the accuracy of the HPLC technique is within 5%. For minor pigments, experimental errors would have been more significant and would have been superimposed on this patchiness.

The concentrations of the major pigments at each station were integrated over the top 100 m of the water column to give the total abundance of each. In addition, the ratio of each marker pigment to chlorophyll **a** was calculated. These two sets of values were used to construct the geographic distributions given in Figure 4. These figures represent the integrated abundance of the algal sources and the relative proportion of each algal source in the population, respectively.

#### *Abbreviations used in figures and tables*

CHLIDE A: chlorophyllide **a**  
CHLORO C: chlorophyll **c**  
MCHLIDE: methylchlorophyllide **a**  
PHORB A1: phaeophorbide **a**  
PERIDIN: peridinin  
FUCOX: fucoxanthin  
FUCOX-X: 19' butanoyloxyfucoxanthin-like pigment  
(Wright and Jeffrey 1987)  
HEXFUCOX: 19'-hexanoyloxyfucoxanthin  
NEOXANTH: neoxanthin  
PRASINOX: prasinoxanthin  
DIADINOX: diadinoxanthin  
ALLOX: alloxanthin  
ZEAXANTH: zeaxanthin  
CHLORO B: chlorophyll **b**  
CHL ALLO: chlorophyll **a** allomer  
CHLORO A: chlorophyll **a**  
CHL EPIM: chlorophyll **a** epimer  
PHYTINX: unknown phaeophytin deriv.  
PHYTIN B: phaeophytin **b**  
PHYTIN A: phaeophytin **a**  
% DEGRAD: % degradation  
PIGM TOT: total of all pigments  
CHLA TOT: total chlorophyll **a** species



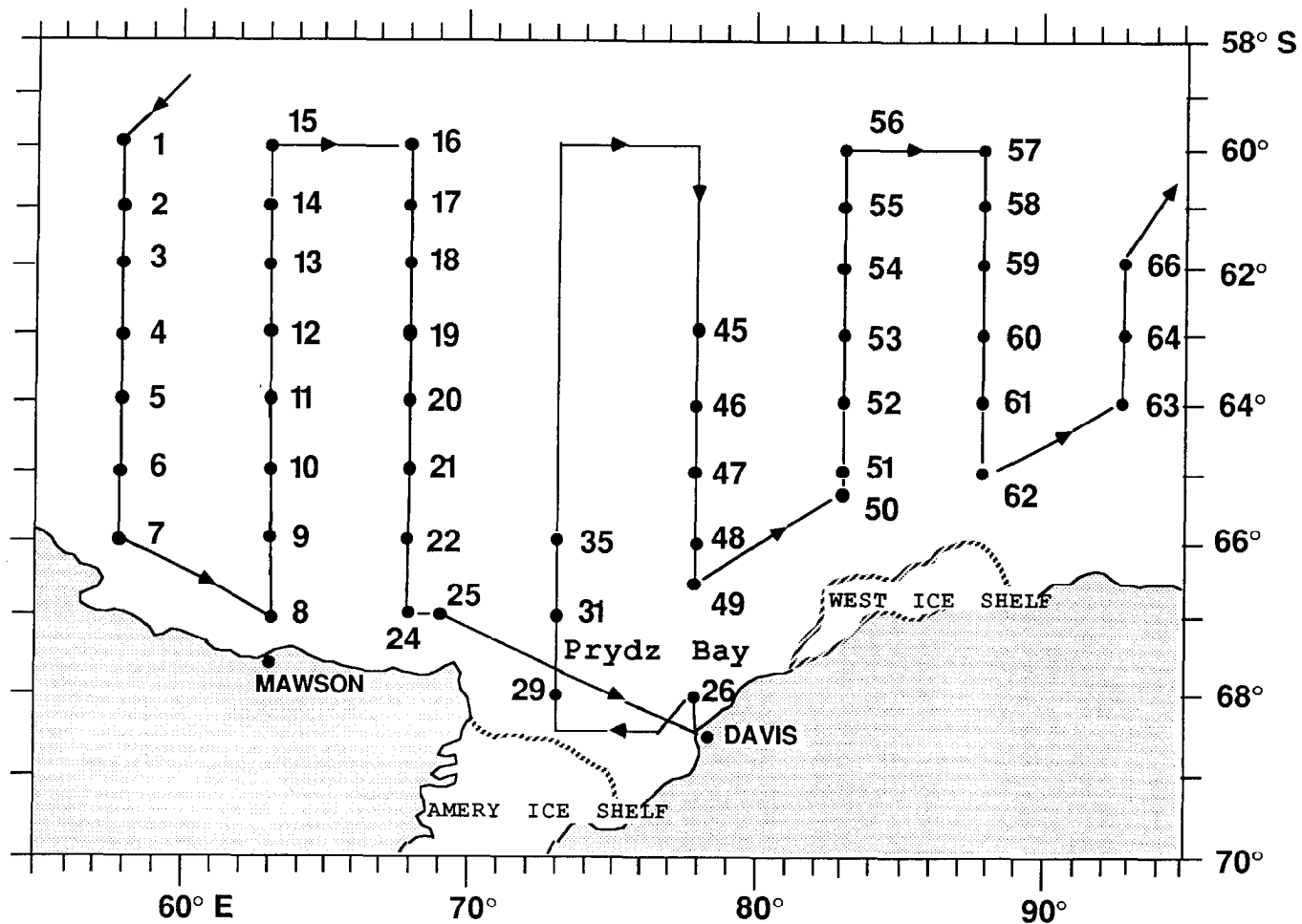


Figure 1. Cruise track of MV Nella Dan, 4-26 January 1985, showing sites of CTD stations.

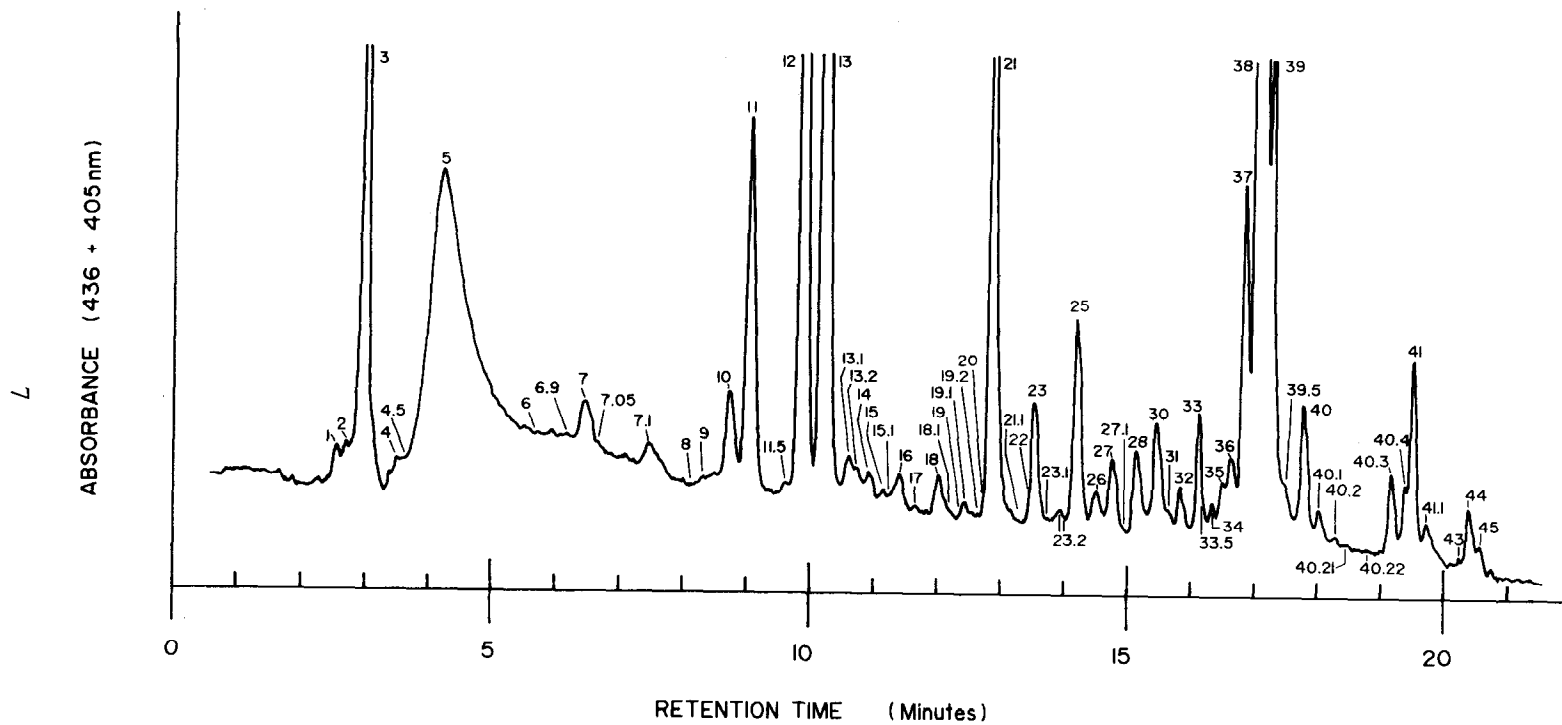


Figure 2. Representative pigment chromatogram. Peak identities and retention times are given in Table 2.

PIGMENT	SOURCE	REFERENCE
Chlorophyll a	All photosynthetic algae	Jeffrey (1974)
Fucoxanthin	Diatoms, chrysophytes	Jeffrey (1974), Liaaen-Jensen (1977)
19'-hexanoyloxyfucoxanthin	some prymnesiophytes e.g. Phaeocystis, Emiliaia	Arpin et al (1976)
19'-butanoyloxyfucoxanthin	Chrysophyte	Bjørnland et al (1984)
Fucox-x	Chrysophytes, prymnesiophytes	Wright and Jeffrey (1987)
Chlorophyll c3	Some prymnesiophytes	Jeffrey and Wright (in press)
Peridinin	Dinoflagellates	Jeffrey (1974), Liaaen-Jensen (1977)
Alloxanthin	Cryptophytes	Chapman (1966), Hager and Stransky (1970)
Zeaxanthin	Cyanobacteria	Guillard et al (1985)
Chlorophyll b	Prasinophytes, chlorophytes	Jeffrey (1974)
Prasinoxanthin	Prasinophytes	Foss et al (1974)

*Table 1. Known phytoplankton marker pigments, with their sources. The unidentified pigment referred to as Fucox-x corresponds to the '19'-butanoyloxyfucoxanthin-like pigment' referred to in Wright and Jeffrey (1987). It may be true 19'-butanoyloxyfucoxanthin, but its chromatographic properties were not as expected and the native source described in Bjørnland et al.(1984) was not available for comparison.*

Peak number	Peak identity	Retention time (min)	Peak number	Peak identity	Retention time (min)
1	chlorophyllide a	2.44	23	antheraxanthin	13.42
2	chlorophyll c	2.61	23.1	alloxanthin	13.66
3	u1	2.85	23.2	u19	13.86
4	u2	3.41	23.3	u20	13.96
4.5		3.51	25	diatoxanthin	14.10
5	chlorophyll c pk2	4.05	26	lutein	14.38
6	u3	5.55	27	zeaxanthin	14.67
6.9	u4	6.04	27.1	u21	14.82
7	methylchlorophyllide a	6.34	28	canthaxanthin	15.06
7.05	u5	6.65	29	u22	15.21
7.1	u6	7.36	30	u23	15.36
8	u7	8.05	31	Unk prasinophyte pigment	15.61
9	u8	8.34	32	u24	15.78
10	peridinin	8.65	33	chlorophyll b	16.05
11	fucoxanthin x	8.94	33.5	u25	16.16
11.5	u9	9.46	34	Unk prasinophyte pigment2	16.24
12	fucoxanthin	9.76	35	u26	16.72
13	19'-hexanoyloxyfucoxanthin	10.11	36	u27	16.57
13.1	neoxanthin	10.62	37	chlorophyll a allomer	16.77
13.2	trihydroxy- $\beta$ ,E-carotene?	10.74	38	chlorophyll a	16.99
14	cis fucoxanthin	10.83	39	chlorophyll a epimer	17.17
15	cis 19'-hexanoyloxyfucoxanthin	11.08	39.5	u28	17.40
15.1	u10	11.18	40	u29	17.70
16	prasinoxanthin	11.33	40.1	echinone	17.94
17	u11	11.48	40.2	u30	18.27
17.5	dinoxanthin	11.77	40.21	u31	18.47
18	violaxanthin	11.94	40.3	u33	19.11
18.1	u12	12.09	40.4	u34	19.34
19	u13	12.24	41	phaeophytin a	19.42
19.1	u14	12.34	41.1	$\beta$ , -carotene	19.65
19.2	u15	12.54	42	u35	19.81
20	u16	12.64	43	$\beta$ ,E-carotene	20.12
21	diadinoxanthin	12.76	44	$\beta$ , $\beta$ -carotene	20.29
21.1	u17	13.16	45	cis $\beta$ , $\beta$ -carotene	20.47
22	u18	13.32			

Table 2. Pigment identities and their retention times. Pigment numbers correspond to those of Figure 2.

STATION: 1  
 LATITUDE: 59 59.4 S

DATE: 030185  
 LONGITUDE: 53 1.6 E

GMT: 2252  
 SAMPLES: 8

SAMPLE	1	2	4	5	6	7	8	9	INTEG	DEPTH
DEPTH (m)	1.7	8.8	23.9	32.5	48.7	59.8	202.1	602.0	100m	OF MAX
									mg/m2	CONC
PIGMENT CONCENTRATION (ng/l)										
CHLIDE A	0.000	3.526	0.641	0.000	1.112	5.131	0.000	0.283	0.461	69.800
CHLORO C	5.290	4.814	0.000	13.262	8.084	0.000	0.000	5.458	0.396	32.500
MCHLIDE	5.884	11.092	7.170	12.700	0.000	6.594	0.000	15.756	0.902	602.000
PHORB A1	0.000	0.000	0.000	4.464	0.000	0.000	5.362	0.000	0.410	202.100
PERIDIN	2.376	5.011	3.140	4.687	19.457	0.000	15.019	0.000	1.520	48.700
FUCOX-X	0.480	0.876	0.000	2.565	1.537	2.712	1.009	0.000	0.347	69.800
FUCOX	24.309	45.367	25.188	67.350	57.210	96.823	5.432	27.653	10.617	69.800
HEXFUCOX	13.156	22.445	17.120	32.629	14.792	25.786	1.849	9.428	3.302	32.500
NEOXANTH	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PRASINIX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
VIOLAX	0.000	0.000	0.000	0.000	1.882	0.000	1.338	0.747	0.124	48.700
DIADINIX	18.481	23.460	17.185	29.171	26.153	15.868	2.063	7.801	2.764	32.500
ALLOX	1.016	1.318	0.209	1.299	1.680	0.649	0.806	0.000	0.173	48.700
DIATIX	2.094	1.894	1.130	4.246	2.395	1.890	0.000	0.431	0.283	32.500
ZEAXANTH	0.000	0.000	0.000	1.070	0.000	0.804	0.000	0.672	0.075	32.500
CANTHAX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
U23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORO B	2.766	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.015	1.700
U26	0.000	0.000	0.774	0.000	2.713	0.000	0.000	0.932	0.060	48.700
CHL ALLO	0.000	0.834	0.000	0.000	2.579	0.000	0.000	0.906	0.058	48.700
CHLORO A	97.500	115.586	61.093	143.229	47.466	140.138	6.792	37.240	16.378	32.500
CHL EPIM	0.000	0.000	0.000	1.033	0.000	0.000	0.000	0.000	0.013	32.500
UNKNOWN4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	0.000	0.000	0.000	1.317	0.000	0.000	0.000	0.000	0.016	32.500
CHLA TCT	103.384	130.205	68.905	155.929	48.578	151.862	6.792	53.279	17.741	32.500
% DEGRAD	0.000	0.674	0.000	4.187	5.041	0.000	44.113	1.673	3.071	202.100
PIGM TOT	173.352	236.273	133.650	319.021	187.060	296.394	39.670	107.317	37.919	32.500

10

Table 3. Pigment abundance data.

STATION: 2  
 LATITUDE: 61 0.85

DATE: 040185  
 LONGITUDE: 57 59.1E

GMT: 0705  
 SAMPLES: 8

SAMPLE	10	11	12	13	14	15	16	17	INTEG	DEPTH
DEPTH (m)	1.7	9.6	25.0	35.2	49.6	76.2	103.0	205.0	100m	DF MAX
									mg/m2	CONC
PIGMENT CONCENTRATION (ng/l)										
CHLIDE A	0.000	0.000	5.432	8.123	2.512	0.000	0.665	5.187	0.524	35.200
CHLORD C	3.788	1.228	17.364	14.804	1.927	46.104	18.291	0.702	2.940	76.200
MCHLIDE	3.626	2.833	5.801	8.879	6.902	21.578	8.148	0.000	1.486	76.200
PHORB A1	0.000	0.000	0.000	0.000	1.849	0.000	3.542	0.000	0.266	103.000
PERIDIN	4.731	5.417	3.956	4.648	3.821	3.692	1.882	0.000	0.495	9.600
FUCOX-X	0.450	0.727	4.481	1.996	1.864	3.299	3.631	1.538	0.532	25.000
FUCOX	22.743	27.757	51.123	66.555	43.672	169.989	97.995	26.283	15.062	76.200
HEXFUCOX	13.621	22.788	27.694	40.922	19.679	33.636	33.065	13.012	5.319	35.200
NEOXANTH	0.000	0.000	4.254	0.666	0.000	0.820	0.000	0.000	0.085	25.000
PRASINDX	0.000	0.474	0.000	0.000	0.000	0.402	0.723	0.000	0.063	103.000
VIDLAX	0.949	0.000	0.000	0.756	0.399	0.337	1.191	0.000	0.108	103.000
DIADINDX	17.362	25.311	16.663	33.798	15.989	29.837	7.017	5.399	2.872	35.200
ALLOX	0.690	0.969	0.554	1.561	1.201	1.040	1.228	0.914	0.219	35.200
DIATDX	7.859	7.652	8.259	9.391	6.264	4.260	2.655	0.570	0.794	35.200
ZEAXANTH	0.835	0.320	1.210	1.274	0.730	1.141	0.748	0.000	0.133	35.200
CANTHAX	0.000	0.000	0.000	0.000	0.407	0.682	0.000	0.000	0.027	76.200
u23	0.000	0.000	0.000	0.000	0.290	0.000	0.000	0.000	0.006	48.600
CHLORD B	0.000	0.000	0.000	0.000	1.517	1.901	2.672	0.000	0.255	103.000
u26	0.000	0.289	0.000	0.545	0.628	0.817	0.549	0.454	0.103	76.200
CHL ALLO	0.000	1.323	0.000	1.128	1.309	0.000	0.000	1.531	0.134	205.000
CHLORD A	74.193	85.999	114.470	145.492	90.326	224.823	128.401	38.253	22.790	76.200
CHL EPIM	0.000	0.000	0.940	1.154	1.073	1.363	0.000	1.353	0.154	76.200
UNKNDWN4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	0.000	0.000	0.806	2.363	0.000	2.001	2.194	1.257	0.298	35.200
CHLA TOT	77.809	88.832	125.704	162.495	99.741	246.402	137.214	43.440	24.800	76.200
% DEGRAD	0.000	1.458	1.370	2.780	4.070	1.347	4.012	8.703	0.890	205.000
PIGM TOT	155.737	183.088	263.006	344.055	202.359	547.715	314.597	96.453	54.665	76.200

STATION: 3  
 LATITUDE: 61 59.85

DATE: 040185  
 LONGITUDE: 57 58.6E

GMT: 1417  
 SAMPLES: 7

SAMPLE	18	19	20	21	23	24	25	INTEG	DEPTH
DEPTH (m)	3.2	9.6	25.8	34.7	75.2	102.3	204.9	100m	OF MAX
								mg/m2	CONC
PIGMENT CONCENTRATION (ng/l)									
CHLIDE A	0.000	0.000	0.000	3.688	4.313	0.000	0.328	0.254	75.200
CHLORO C	0.000	9.936	0.603	28.579	16.192	69.085	0.000	5.853	102.300
MCHLIDE	0.000	2.538	4.186	0.000	11.287	10.232	0.000	1.126	75.200
PHORB A1	0.000	0.000	0.000	0.000	4.466	8.463	0.000	0.700	102.300
PERIDIN	0.000	9.309	0.000	2.105	6.537	7.478	0.000	0.863	9.600
FUCOX-X	0.000	0.500	0.955	1.553	3.548	7.769	0.000	0.680	102.300
FUCOX	50.549	37.309	39.779	78.547	111.651	250.186	2.151	23.293	102.300
HEXFUCOX	31.223	23.170	23.880	35.923	36.701	54.503	1.359	6.493	102.300
NEOXANTH	0.000	0.000	0.000	0.000	0.000	0.931	0.000	0.060	102.300
PRASINOX	0.000	0.000	0.000	0.000	0.000	1.233	0.000	0.080	102.300
VIOGLAX	0.000	0.518	0.000	0.000	0.000	1.431	0.000	0.099	102.300
DIADINOX	26.893	31.641	24.882	41.116	23.594	30.684	0.837	4.688	34.700
ALLOX	0.343	0.927	1.190	1.295	1.736	2.581	0.000	0.289	102.300
DIATOX	3.412	3.872	3.316	4.114	1.872	2.959	0.000	0.464	34.700
ZEAXANTH	0.000	0.565	0.399	1.519	1.142	1.536	5.201	0.460	204.900
CANTHAX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
u23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORO B	0.000	0.000	0.000	0.000	0.000	4.174	0.000	0.271	102.300
u26	2.405	2.863	0.669	0.000	0.884	1.658	0.000	0.194	9.600
CHL ALLO	0.000	4.055	1.335	0.000	0.000	0.000	0.000	0.063	9.600
CHLORO A	56.708	40.375	97.907	163.127	145.947	312.259	10.156	31.780	102.300
CHL EPIM	0.000	0.000	0.000	0.000	0.000	2.548	0.000	0.165	102.300
UNKNOWN4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	0.000	0.000	0.000	0.000	0.000	3.979	0.000	0.258	102.300
CHLA TOT	56.708	42.913	101.393	166.815	161.547	322.491	10.484	33.160	102.300
% DEGRAD	0.000	8.634	1.292	0.000	2.690	4.442	0.000	0.493	9.600
PIGM TOT	172.072	167.578	199.501	361.566	369.871	773.639	20.031	78.132	102.300

STATION: 4  
 LATITUDE:63 0.45

DATE:040185  
 LONGITUDE: 58 0.5E

GMT:2115  
 SAMPLES: 5

SAMPLE	26	27	28	32	33	INTEG	DEPTH
DEPTH (m)	3.3	10.0	25.8	76.2	99.7	100m mg/m2	OF MAX CONC
PIGMENT CONCENTRATION (ng/l)							
CHLIDE A	3.082	13.883	105.268	0.000	0.964	3.712	25.800
CHLORO C	87.930	74.966	423.950	44.519	32.189	17.484	25.800
MCHLIDE	24.131	56.199	180.242	4.910	3.088	6.976	25.800
PHORB A1	4.957	0.000	11.975	8.776	7.196	0.838	25.800
PERIDIN	8.506	1.236	19.644	1.230	1.486	0.784	25.800
FUCOX-X	3.308	2.674	14.346	6.868	7.402	0.868	25.800
FUCOX	207.963	207.112	809.070	112.816	98.983	35.825	25.800
HEXFUCOX	63.078	68.687	274.530	67.181	55.769	13.417	25.800
NEOXANTH	0.905	1.886	3.511	1.428	0.818	0.206	25.800
PRASINX	0.909	0.000	0.000	0.000	0.000	0.006	3.300
VIOLAX	1.438	1.081	1.760	2.775	1.430	0.199	76.200
DIADINX	84.904	91.066	163.954	24.635	19.688	8.158	25.800
ALLOX	2.234	2.410	9.755	2.333	1.986	0.474	25.800
DIATOX	12.178	10.455	22.608	1.719	1.139	1.024	25.800
ZEAXANTH	2.075	2.283	7.713	0.871	0.532	0.333	25.800
CANTHAX	0.715	0.609	1.610	0.240	0.296	0.077	25.800
u23	0.657	0.000	1.368	0.000	0.000	0.050	25.800
CHLORO B	2.199	11.301	4.791	1.703	0.000	0.363	10.000
u26	0.665	0.000	0.579	3.081	1.850	0.159	76.200
CHL ALLO	2.974	0.000	0.000	3.120	2.106	0.160	76.200
CHLORO A	369.127	350.428	1041.862	182.627	166.532	49.587	25.800
CHL EPIM	3.203	2.570	7.117	2.947	2.253	0.421	25.800
UNKNOWN4	0.000	0.000	1.733	0.335	0.290	0.073	25.800
PHYTINX	0.730	0.000	0.000	0.000	0.000	0.005	3.300
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	3.559	3.576	8.583	8.192	6.681	0.729	25.800
CHLA TOT	402.340	420.510	1327.372	187.537	170.584	60.276	25.800
% DEGRAD	3.692	1.441	2.043	10.940	9.658	0.626	76.200
PIGM TOT	897.429	902.422	3115.975	482.308	412.680	141.929	25.800



STATION: 5  
 LATITUDE: 63 59.55

DATE: 050185  
 LONGITUDE: 57 57.5E

GMT: 0610  
 SAMPLES: 5

SAMPLE	34	35	36	38	37	INTEG	DEPTH
DEPTH (m)	7.9	23.1	33.6	48.0	102.8	100m mg/m2	OF MAX CONC
PIGMENT CONCENTRATION (ng/l)							
CHLIDE A	43.727	46.287	22.377	1.924	0.000	1.618	23.100
CHLDRO C	153.069	264.830	261.643	0.000	0.000	9.033	23.100
MCHLIDE	63.342	166.651	50.080	4.198	0.000	3.887	23.100
PHORB A1	0.000	5.106	16.146	4.319	0.000	0.416	33.600
PERIDIN	12.916	16.960	4.174	0.000	0.000	0.469	23.100
FUCOX-X	7.953	11.259	16.441	6.836	0.000	0.709	33.600
FUCOX	484.282	667.151	597.187	118.031	15.571	28.025	23.100
HEXFUCOX	129.423	209.176	317.430	104.136	4.672	12.377	33.600
NEOXANTH	1.756	2.989	0.674	1.027	0.000	0.110	23.100
PRASINOX	0.948	5.230	2.230	1.464	0.000	0.160	23.100
VIOLAX	1.795	1.106	3.752	1.011	0.000	0.124	33.600
DIADINOX	192.989	177.383	78.138	14.261	0.512	6.751	7.900
ALLOX	5.275	8.863	11.076	2.910	0.000	0.434	33.600
DIATOX	21.624	20.224	5.799	2.120	0.000	0.741	7.900
ZEAXANTH	2.913	3.589	3.640	0.890	0.000	0.167	33.600
CANTHAX	1.547	1.119	0.000	0.000	0.000	0.038	7.900
u23	1.503	0.843	1.531	0.000	0.000	0.053	33.600
CHLDRO 8	2.912	0.000	5.160	1.660	0.000	0.167	33.600
u26	0.369	1.251	2.603	1.485	0.000	0.115	33.600
CHL ALLO	0.000	1.463	5.208	1.253	0.000	0.127	33.600
CHLDRO A	766.961	895.967	895.429	235.021	22.326	43.293	23.100
CHL EPIM	3.121	9.659	7.149	3.302	0.000	0.376	23.100
UNKNOWN4	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	8.063	11.111	14.502	10.976	0.000	0.828	33.600
CHLA TOT	373.729	1108.905	967.886	241.142	22.326	48.798	23.100
% DEGRAD	1.264	2.406	4.254	7.605	0.000	0.367	48.000
PIGM TOT	1906.699	2528.227	2322.371	516.823	43.081	110.018	23.100

STATION: 6  
 LATITUDE: 65 0.95

DATE: 050185  
 LONGITUDE: 58 0.3E

GMT: 1252  
 SAMPLES: 7

SAMPLE	39	40	41	42	43	44	45	INTEG	DEPTH
DEPTH (m)	2.8	25.5	33.7	49.7	75.1	101.6	202.0	100m	OF MAX
								mg/m2	CONC
PIGMENT CONCENTRATION (ng/l)									
CHLIDE A	0.000	10.389	79.474	19.617	1.590	0.000	0.000	1.569	33.700
CHLORO C	15.065	22.708	475.979	133.207	0.000	16.155	0.000	10.118	33.700
MCHLIDE	6.734	17.951	102.050	11.131	1.873	4.173	4.134	2.350	33.700
PHORB A1	0.000	2.603	30.944	11.341	4.952	0.000	0.000	0.778	33.700
PERIDIN	2.175	3.912	7.506	2.135	1.016	0.875	0.000	0.309	33.700
FUCOX-X	1.081	1.959	23.156	7.491	4.883	0.651	0.382	0.668	33.700
FUCOX	72.837	106.248	930.496	291.271	40.870	28.054	28.898	24.252	33.700
HEXFUCOX	28.587	35.059	276.807	69.055	40.607	9.488	5.979	7.631	33.700
NEOXANTH	0.389	0.000	9.096	2.845	0.693	0.000	0.000	0.192	33.700
PRASINOX	0.213	0.321	1.573	1.824	0.738	0.000	0.000	0.084	49.700
VIOLAX	0.394	0.606	2.553	1.031	0.353	0.000	0.000	0.089	33.700
DIADINOX	35.614	50.323	105.126	37.264	11.945	5.192	11.082	4.534	33.700
ALLOX	0.890	1.396	8.341	2.199	1.083	0.449	0.281	0.258	33.700
DIATOX	10.233	6.371	16.731	2.390	0.690	0.625	1.812	0.644	33.700
ZEAXANTH	1.705	2.607	6.074	0.756	0.412	0.000	0.323	0.180	33.700
CANTHAX	0.310	0.422	0.926	0.000	0.000	0.000	0.000	0.022	33.700
u23	0.393	0.334	1.271	0.000	0.000	0.000	0.160	0.034	33.700
CHLORO B	0.456	1.352	0.000	0.000	0.000	0.000	0.000	0.027	25.500
u26	0.153	0.000	2.090	3.586	4.227	0.331	0.000	0.232	75.100
CHL ALLO	0.000	0.000	7.123	1.478	1.836	0.000	0.000	0.164	33.700
CHLORO A	141.780	183.840	1254.819	428.976	53.138	38.768	31.870	34.348	33.700
CHL EPIM	0.944	1.379	9.897	3.717	0.824	0.000	0.000	0.241	33.700
UNKNOWN4	0.185	2.357	0.000	0.850	0.000	0.000	0.000	0.057	25.500
PHYTINX	0.300	0.000	0.000	0.000	0.000	0.000	1.052	0.053	202.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	1.431	1.939	14.630	11.498	3.464	1.695	0.000	0.663	33.700
CHLA TOT	148.574	212.180	1436.343	459.724	56.601	42.941	36.004	38.277	33.700
% DEGRAD	1.574	2.715	4.112	5.748	16.367	3.798	2.838	1.041	75.100
PIGM TOT	322.637	454.076	3367.166	1043.663	175.700	106.467	85.972	89.558	33.700

15

STATION: 7  
 LATITUDE:66 0.45

DATE:050185  
 LONGITUDE: 57 59.8E

GMT:1920  
 SAMPLES: 8

SAMPLE DEPTH (m)	45	46	47	48	49	50	51	52	INTEG 100m mg/m2	DEPTH OF MAX CONC
PIGMENT CONCENTRATION (ng/l)										
CHLIDE A	106.189	0.000	89.948	163.475	112.104	17.967	0.000	0.000	6.440	32.900
CHLDRO C	307.739	324.360	269.515	479.555	629.982	112.593	150.571	6.183	39.878	48.300
MCHLIDE	157.481	110.643	79.874	126.709	85.651	14.740	19.381	2.803	8.043	1.900
PHORB A1	13.305	15.588	30.162	26.866	41.350	51.951	42.746	0.624	5.840	73.600
PERIODIN	20.554	22.839	24.007	17.930	0.000	1.485	2.371	1.395	1.126	23.200
FUCOX-X	8.788	9.457	10.323	13.321	20.319	6.768	5.541	1.778	1.465	48.300
FUCOX	729.366	769.405	588.495	821.811	1521.592	461.524	407.199	51.156	102.552	48.300
HEXFUCOX	156.869	183.968	124.897	184.517	198.705	59.616	42.344	18.360	15.777	48.300
NEOXANTH	3.705	4.458	5.544	5.047	6.517	4.108	2.272	0.682	0.513	48.300
PRASINOX	2.656	0.479	0.296	0.000	2.887	1.774	2.219	0.000	0.267	48.300
VIOLAX	2.407	2.705	2.235	1.401	3.549	2.688	2.677	0.727	0.433	48.300
DIADINOX	220.820	254.585	182.055	178.300	133.566	70.593	73.481	13.903	18.179	8.400
ALLOX	5.666	7.273	4.495	5.842	6.103	1.226	1.344	0.702	0.511	8.400
DIATOX	25.027	25.677	26.566	22.188	14.740	3.666	5.073	0.859	1.769	23.200
ZEAXANTH	3.200	3.993	4.181	3.846	6.221	2.177	1.944	0.000	0.463	48.300
CANTHAX	1.752	1.800	1.453	1.793	0.981	0.000	0.549	0.000	0.123	8.400
U23	1.837	2.286	2.079	1.271	0.485	0.000	0.358	0.000	0.108	8.400
CHLDRO B	2.945	2.736	0.000	0.000	10.094	3.624	2.277	0.000	0.485	48.300
U26	0.961	1.153	1.397	1.781	6.153	0.822	2.584	0.594	0.396	48.300
CHL ALLO	3.849	4.151	5.218	4.303	14.406	2.779	3.436	1.162	0.822	48.300
CHLDRO A	1043.408	1166.274	926.607	977.777	2084.776	632.874	531.276	79.104	137.539	48.300
CHL EPIM	5.397	12.476	5.640	8.290	6.920	3.147	5.423	0.000	0.898	8.400
UNKNOWN4	0.000	1.533	0.000	0.000	0.000	0.000	0.717	0.000	0.062	8.400
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	8.364	10.218	6.945	11.601	28.991	14.213	15.449	4.060	2.516	48.300
CHLA TOT	1307.077	1276.917	1096.428	1267.961	2282.531	665.582	550.657	81.907	152.022	48.300
% DEGRAD	2.311	3.216	4.191	3.871	3.861	9.773	10.855	6.661	1.495	99.300
PIGM TOT	2833.284	2938.120	2391.931	3057.623	5036.098	1470.335	1321.232	184.092	346.306	48.300

STATION: 8  
 LATITUDE: 66 59.75

DATE: 060185  
 LONGITUDE: 63 7.5E

GMT: 1211  
 SAMPLES: 8

SAMPLE	56	57	58	59	60	61	62	63	INTEG	DEPTH
DEPTH (m)	2.2	10.0	25.0	35.0	50.0	75.0	100.0	200.0	100m	OF MAX
									mg/m2	CONC
PIGMENT CONCENTRATION (ng/l)										
CHLIDE A	94.313	139.522	354.301	163.475	127.963	45.597	27.665	7.243	14.428	25.000
CHLORD C	303.004	399.890	2055.804	707.551	461.217	250.531	96.076	28.466	63.865	25.000
MCHLIDE	122.363	321.724	529.805	346.450	501.193	144.902	50.091	18.681	33.078	25.000
PHORB A1	27.562	0.000	72.169	72.634	90.321	55.535	37.113	19.362	8.461	50.000
PERIDIN	19.211	5.138	45.192	7.542	7.210	1.520	0.000	1.352	1.085	25.000
FUCOX-X	5.722	3.637	16.244	13.295	8.525	5.629	3.270	2.086	1.066	25.000
FUCOX	564.276	777.287	2814.195	1695.865	1170.362	619.203	274.022	97.404	129.563	25.000
HEXFUCOX	121.881	150.691	739.089	290.894	207.283	123.759	61.040	26.481	27.715	25.000
NEOXANTH	4.168	6.435	22.228	13.775	20.444	2.588	1.150	0.595	1.124	25.000
PRASINDX	0.315	0.723	2.504	2.202	4.193	2.404	1.415	1.238	0.363	50.000
VIOLAX	3.022	4.971	5.266	5.783	4.256	1.466	1.066	0.996	0.451	35.000
DIADINDX	147.966	292.027	221.511	118.313	107.044	63.628	42.597	19.295	15.724	10.000
ALLOX	5.674	5.393	21.365	8.987	5.796	3.593	2.013	1.172	0.866	25.000
DIATDX	68.396	63.611	38.122	13.303	10.651	4.290	2.315	1.658	2.333	2.200
ZEAXANTH	5.238	3.920	2.665	1.658	1.602	1.767	1.549	0.913	0.349	2.200
CANTHAX	2.019	2.393	5.862	0.997	0.000	0.666	0.000	0.000	0.142	25.000
U23	1.823	2.567	6.735	1.342	0.000	0.540	0.000	0.000	0.155	25.000
CHLORD B	0.000	0.000	19.817	15.919	8.720	2.800	1.661	1.173	0.854	25.000
U26	2.084	0.929	4.044	6.496	3.547	2.262	1.197	1.176	0.416	35.000
CHL ALLO	10.850	4.979	24.093	9.346	7.237	4.243	2.455	1.429	1.017	25.000
CHLORD A	743.321	987.683	3613.743	2065.222	1272.335	864.262	383.361	167.221	166.155	25.000
CHL EPIM	7.524	7.165	24.449	8.659	6.533	1.563	1.621	1.201	0.873	25.000
UNKNOWN4	0.819	0.000	2.022	0.000	1.520	1.187	0.000	0.000	0.090	25.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	6.026	7.352	39.160	33.192	19.283	16.169	10.492	5.408	2.741	25.000
CHLA TOT	959.996	1448.929	4497.849	2575.147	1901.492	1054.760	461.117	193.146	213.662	25.000
% DEGRAD	5.135	1.328	3.432	4.588	6.093	6.846	10.078	12.424	1.691	200.000
PIGM TOT	2267.575	3178.038	10680.387	5602.901	4047.237	2220.102	1002.168	404.551	472.913	25.000

STATION: 9  
 LATITUDE: 66 0.55

DATE: 060185  
 LONGITUDE: 62 59.2E

GMT: 1923  
 SAMPLES: 8

SAMPLE DEPTH (m)	65	66	67	68	69	70	71	72	INTEG 100m mg/m2	DEPTH OF MAX CONC
	PIGMENT CONCENTRATION (ng/l)									
CHLIDE A	0.000	0.000	9.557	26.156	0.000	19.282	46.336	1.157	3.974	100.000
CHLORO C	7.108	18.703	13.710	78.249	207.285	276.739	277.698	21.328	31.388	100.000
MCHLIDE	7.104	8.791	3.177	30.014	64.025	79.309	44.287	7.702	7.069	74.000
PHORB A1	0.000	2.687	0.000	8.031	17.578	22.228	141.987	12.502	10.769	100.000
PERIDIN	3.467	4.262	5.863	10.445	10.402	12.056	13.569	1.316	1.722	100.000
FUCOX-X	0.901	1.399	1.109	3.899	9.179	21.173	12.044	2.114	1.678	74.000
FUCOX	49.507	62.244	48.616	233.579	401.052	779.947	647.575	54.663	76.443	74.000
HEXFUCOX	21.714	23.737	13.134	58.090	172.460	265.501	289.093	57.867	32.862	100.000
NEOXANTH	0.178	0.470	0.000	1.475	3.605	3.576	4.706	0.625	0.521	100.000
PRASINDX	0.000	0.000	0.000	0.000	1.088	2.830	4.130	0.440	0.379	100.000
VIOLAX	0.556	0.603	0.979	0.912	1.382	0.000	9.901	0.520	0.722	100.000
DIADINDX	25.859	27.006	24.217	73.443	68.010	72.108	122.195	17.584	13.601	100.000
ALLOX	0.521	1.106	1.001	3.045	7.378	7.977	8.049	2.100	1.037	100.000
DIATDX	2.144	2.802	2.959	9.007	9.058	5.521	6.022	1.025	0.956	50.000
ZEAXANTH	1.995	2.525	2.836	7.824	4.444	3.381	1.899	0.495	0.498	34.000
CANTHAX	0.244	0.000	0.297	0.613	0.722	1.451	1.005	0.000	0.128	74.000
u23	0.175	0.000	0.420	0.658	0.936	0.792	0.749	0.000	0.101	50.000
CHLORO B	0.000	0.000	0.000	0.000	1.893	11.091	3.491	0.000	0.539	74.000
u26	0.000	0.000	0.000	0.520	1.097	3.589	5.702	0.822	0.526	100.000
CHL ALLO	0.404	0.000	0.000	1.410	3.485	7.773	8.703	1.257	0.906	100.000
CHLORO A	103.193	127.199	110.353	359.688	626.087	1103.034	940.268	121.842	114.631	74.000
CHL EPIM	0.000	0.000	0.000	2.503	5.903	3.637	3.612	0.950	0.522	50.000
UNKNOWN4	0.000	0.000	0.905	1.494	1.430	1.280	1.760	0.000	0.204	100.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	1.070	2.823	0.922	4.615	7.115	21.054	54.887	5.826	4.588	100.000
CHLA TOT	110.302	135.990	123.087	415.858	690.112	1201.625	1030.892	130.701	125.674	74.000
% DEGRAD	1.319	3.894	0.743	3.829	4.706	4.353	16.869	13.578	2.085	100.000
PIGM TOT	226.146	286.347	240.056	915.670	1625.614	2725.332	2649.671	312.135	305.767	74.000

STATION: 10  
 LATITUDE: 65 0.35

DATE: 070185  
 LONGITUDE: 62 58.3E

GMT: 0423  
 SAMPLES: 7

SAMPLE	73	74	75	76	77	78	79	INTEG	DEPTH
DEPTH (m)	1.5	25.0	35.0	50.0	77.5	112.4	210.0	100m mg/m2	OF MAX CONC
	PIGMENT CONCENTRATION (ng/l)								
CHLIDE A	7.497	0.000	0.000	0.000	247.738	4.621	0.000	8.135	77.500
MCHLRO C	13.341	24.625	21.527	30.002	1510.134	121.538	45.492	58.890	77.500
MCHLIDE	10.844	8.320	2.982	21.308	546.933	12.732	2.783	18.817	77.500
PHORB A1	2.251	0.000	0.000	0.000	18.923	6.122	0.000	1.026	77.500
PERIDIN	3.763	5.357	0.000	0.000	57.761	0.000	0.000	1.942	77.500
FUCOX-X	2.672	1.612	1.195	2.287	72.136	9.069	5.328	3.237	77.500
FUCOX	94.170	82.271	91.662	113.191	3134.403	182.807	46.898	118.370	77.500
HEXFUCOX	34.312	26.742	34.783	41.294	1256.821	188.467	116.433	59.596	77.500
NEOXANTH	0.699	0.000	0.000	1.264	6.320	1.018	0.000	0.301	77.500
PRASINIX	0.000	0.000	0.000	0.000	1.969	1.605	0.957	0.210	77.500
VIOLAX	0.000	0.477	0.529	1.669	5.403	0.921	1.511	0.353	77.500
DIADINIX	41.341	40.284	40.949	36.909	414.938	29.800	13.148	18.081	77.500
ALLOX	0.515	1.527	1.632	2.298	46.889	6.027	3.156	2.119	77.500
DIATOX	5.492	3.717	3.810	4.515	47.355	2.199	1.360	1.968	77.500
ZEAXANTH	2.137	2.032	2.272	2.080	6.405	1.150	0.000	0.411	77.500
CANTHAX	0.480	0.331	0.386	0.000	5.378	0.000	0.324	0.200	77.500
u23	0.000	0.235	0.283	0.000	5.353	0.000	0.309	0.190	77.500
CHLRO B	0.000	0.794	0.000	0.000	0.000	0.000	0.000	0.013	25.000
u26	0.000	0.000	0.000	0.000	3.990	1.612	0.000	0.231	77.500
CHL ALLO	1.107	0.000	1.032	0.000	8.099	0.000	0.000	0.280	77.500
CHLRO A	189.728	165.434	181.640	221.444	3618.976	406.018	168.826	160.312	77.500
CHL EPIM	1.229	0.000	1.350	0.000	16.639	1.536	0.000	0.654	77.500
UNKNOWN4	0.585	0.000	0.694	0.000	4.659	0.000	0.214	0.172	77.500
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	2.665	5.199	2.746	4.837	33.357	16.810	9.305	2.868	77.500
CHLA TOT	208.068	173.754	184.622	242.753	4413.647	423.371	171.608	187.264	77.500
% DEGRAD	3.368	2.905	2.703	1.954	1.715	5.464	5.143	0.835	112.400
PIGM TOT	415.424	369.009	389.472	483.099	11070.580	994.053	415.944	458.378	77.500

STATION: 11  
 LATITUDE: 63 59.85

DATE: 070185  
 LONGITUDE: 63 0.1E

GMT: 1101  
 SAMPLES: 8

SAMPLE	80	81	82	83	84	85	86	87	INTEG	DEPTH
DEPTH (m)	2.6	10.0	26.0	35.0	48.0	75.0	103.0	203.0	100m	OF MAX
									mg/m2	CONC
PIGMENT CONCENTRATION (ng/l)										
CHLIDE A	0.000	5.754	6.539	0.000	0.000	22.182	0.000	0.000	0.759	75.000
CHLORO C	3.338	11.886	1.848	12.418	27.185	253.916	15.778	4.142	9.063	75.000
MCHLIDE	13.952	3.617	12.009	5.478	9.898	16.785	3.058	1.259	1.259	75.000
PHORB A1	0.000	0.000	0.000	0.000	0.000	35.450	0.000	2.936	1.122	75.000
PERIDIN	6.515	0.000	0.840	6.350	3.361	1.771	0.000	0.811	0.278	2.600
FUCOX-X	1.243	1.098	0.371	1.689	2.034	10.623	2.987	1.502	0.643	75.000
FUCOX	54.430	39.525	38.379	53.850	136.435	472.879	57.645	32.273	22.913	75.000
HEXFUCOX	19.681	13.762	14.547	18.001	49.092	293.579	90.278	37.408	17.368	75.000
NEDXANTH	0.000	0.000	0.000	0.346	1.311	1.099	0.000	0.482	0.084	48.000
PRASINOX	0.000	0.000	0.173	0.000	0.000	2.527	1.171	0.220	0.158	75.000
VIDLAX	1.102	0.521	0.419	0.569	0.593	7.713	1.373	0.485	0.361	75.000
DIADINOX	27.346	21.041	24.384	24.813	32.682	58.619	15.298	7.540	4.618	75.000
ALLOX	1.238	0.350	0.275	1.079	1.647	8.463	2.364	0.959	0.492	75.000
DIATOX	6.157	3.536	2.543	3.888	4.840	8.174	1.060	0.651	0.577	75.000
ZEAXANTH	1.667	1.697	1.469	2.206	3.232	1.716	0.335	0.000	0.206	48.000
CANTHAX	0.000	0.173	0.000	0.407	0.000	0.549	0.000	0.000	0.022	75.000
U23	0.000	0.232	0.000	0.298	0.584	0.000	0.000	0.000	0.018	48.000
CHLORO B	0.000	0.000	0.645	0.000	0.000	0.000	0.000	0.000	0.008	26.000
U26	0.000	0.000	0.000	0.000	1.090	3.151	0.000	0.477	0.132	75.000
CHL ALLO	0.000	0.000	0.000	0.000	2.301	6.489	4.243	0.866	0.539	75.000
CHLORO A	110.711	99.958	76.157	112.599	195.716	812.794	154.835	73.088	43.888	75.000
CHL EPIM	0.000	0.659	0.412	0.926	1.298	4.253	0.000	0.750	0.203	75.000
UNKNOWN4	0.000	0.000	0.229	0.279	0.531	0.889	0.000	0.000	0.041	75.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	4.783	0.000	0.889	1.742	2.982	23.231	9.070	4.131	1.546	75.000
CHLA TOT	124.663	109.329	94.704	118.077	205.614	851.761	157.893	74.348	45.905	75.000
% DEGRAD	3.695	0.599	1.355	2.210	3.101	7.536	7.776	10.458	1.361	203.000
PIGM TOT	252.165	203.808	182.127	246.939	476.811	2046.854	359.495	169.981	106.298	75.000

STATION: 12  
 LATITUDE: 62 59.75

DATE: 070185  
 LONGITUDE: 62 59.9E

GMT: 1715  
 SAMPLES: 8

SAMPLE	88	89	90	91	92	93	94	95	INTEG	DEPTH
DEPTH (m)	3.2	10.5	23.0	35.0	49.0	75.0	98.5	201.0	100m mg/m2	OF MAX CONC
PIGMENT CONCENTRATION (ng/l)										
CHLIDE A	69.163	0.000	62.372	69.645	0.000	0.000	5.422	0.000	2.485	35.000
CHLORD C	185.658	161.087	119.947	161.704	261.246	111.973	29.182	2.943	16.424	49.000
MCHLIDE	106.113	81.218	18.525	97.638	21.986	5.148	2.596	0.000	3.758	3.200
PHORB A1	10.343	0.000	3.704	0.000	0.000	0.000	2.097	1.674	0.334	3.200
PERIDIN	14.998	16.255	9.947	17.071	0.000	0.000	1.388	0.000	0.695	35.000
FUCOX-X	6.034	6.622	4.114	7.344	5.789	12.008	7.168	0.000	1.117	75.000
FUCOX	398.331	317.851	268.858	365.724	425.886	199.871	48.492	13.762	31.148	49.000
HEXFUCOX	155.607	127.212	109.644	157.315	383.652	190.914	81.628	11.183	23.827	49.000
NEOXANTH	1.530	1.097	1.264	1.796	3.316	1.350	0.770	0.314	0.225	49.000
PRASINX	0.000	0.000	0.000	0.521	2.831	1.751	1.233	0.000	0.184	49.000
VIOLAX	0.831	1.449	0.903	1.350	6.878	2.526	1.187	0.000	0.324	49.000
DIADINX	138.010	116.360	99.953	115.535	57.151	28.826	13.096	5.195	7.771	3.200
ALLOX	4.895	4.531	3.432	6.834	11.324	5.317	2.331	0.000	0.714	49.000
DIATX	16.599	17.763	12.775	11.383	5.504	2.240	1.069	0.000	0.827	10.500
ZEAXANTH	0.963	0.554	0.568	1.072	4.621	0.940	0.000	0.000	0.150	49.000
CANTHAX	1.154	1.287	0.860	0.975	0.831	0.000	0.000	0.000	0.060	10.500
U23	1.316	1.054	0.912	0.900	0.304	0.000	0.000	0.000	0.048	3.200
CHLORD B	0.000	0.000	0.000	0.000	1.669	0.000	0.000	0.000	0.033	49.000
U26	0.736	0.888	0.670	0.350	2.722	1.094	0.510	0.303	0.156	49.000
CHL ALLO	5.037	2.820	2.413	0.000	1.711	2.088	0.000	0.000	0.178	3.200
CHLORD A	524.402	495.141	475.833	549.627	752.179	372.595	149.999	20.854	56.937	49.000
CHL EPIM	4.446	5.544	2.619	4.362	6.505	2.828	0.969	0.574	0.458	49.000
UNKNOWN4	0.000	1.720	0.000	0.739	0.480	0.000	0.000	0.000	0.036	10.500
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	5.388	4.524	3.571	4.008	17.724	9.442	5.369	1.503	1.181	49.000
CHLA TOT	799.677	576.358	556.730	716.911	774.165	377.743	158.017	20.854	63.180	3.200
% DEGRAD	3.057	2.187	2.164	1.154	3.242	3.662	5.010	15.246	1.337	201.000
PIGM TOT	1751.553	1364.987	1202.986	1575.894	1974.305	950.911	354.407	58.304	149.072	49.000



STATION: 13  
 LATITUDE: 62 0.35

DATE: 080185  
 LONGITUDE: 63 0.5E

GMT: 0057  
 SAMPLES: 8

SAMPLE	96	97	98	99	100	101	102	103	INTEG	DEPTH
DEPTH (m)	3.5	10.5	25.0	35.0	50.0	76.0	100.0	201.0	100m	OF MAX
	mg/m2 CONC									
	PIGMENT CONCENTRATION (ng/l)									
CHLIDE A	5.523	0.000	0.000	0.000	0.000	0.000	7.365	0.000	0.499	100.000
CHLORO C	14.329	21.336	18.125	25.491	84.639	62.799	71.269	0.000	8.630	50.000
MCHLIDE	7.706	4.019	6.195	7.949	29.513	13.031	5.920	0.000	1.573	50.000
PHORB A1	1.093	0.000	0.000	4.019	0.000	3.104	3.523	0.000	0.356	35.000
PERIDIN	5.980	2.967	4.955	4.027	0.000	3.171	2.114	0.000	0.396	3.500
FUCOX-X	2.501	0.752	2.317	1.978	0.000	3.688	6.453	0.398	0.594	100.000
FUCOX	62.686	76.652	77.215	74.951	248.852	162.140	184.087	6.603	24.139	50.000
HEXFUCOX	35.105	41.513	42.451	38.692	68.792	69.637	57.747	5.189	8.718	76.000
NEOXANTH	0.338	0.454	0.475	0.569	0.769	0.758	0.824	0.000	0.106	100.000
PRASINDX	0.000	0.000	0.000	0.000	0.000	0.232	0.719	0.000	0.051	100.000
VIOLAX	0.788	0.402	0.000	0.421	0.000	0.526	1.154	0.000	0.100	100.000
DIADINDX	33.724	35.301	42.082	30.855	59.762	24.045	16.404	2.631	4.501	50.000
ALLOX	1.349	1.393	1.717	1.317	2.104	2.198	1.588	0.000	0.259	76.000
DIATDX	4.286	4.327	4.667	4.038	4.227	2.393	2.269	0.000	0.472	25.000
ZEAXANTH	0.000	1.132	1.614	0.933	1.764	0.892	0.977	0.000	0.163	50.000
CANTHAX	0.000	0.306	0.000	0.000	0.000	0.000	0.000	0.165	0.012	10.500
U23	0.000	0.180	0.000	0.000	0.000	0.000	0.434	0.000	0.029	100.000
CHLORO B	0.000	0.855	4.733	0.000	0.000	0.000	4.057	0.000	0.321	25.000
U26	0.000	0.210	0.000	0.000	0.583	0.000	0.882	0.000	0.069	100.000
CHL ALLO	1.040	1.143	0.000	0.000	1.261	0.000	1.493	0.000	0.139	100.000
CHLORO A	138.800	165.270	170.793	153.026	351.918	246.618	213.674	13.076	34.149	50.000
CHL EPIM	0.627	1.649	0.000	1.619	2.770	1.486	1.856	0.000	0.252	50.000
UNKNOWN4	0.000	0.402	2.048	0.000	0.000	0.000	0.000	0.000	0.029	25.000
PHYTINX	0.704	0.296	0.000	0.000	0.000	0.000	0.000	0.000	0.008	3.500
PHYTIN B	0.000	0.299	0.000	0.000	0.000	0.000	0.000	0.000	0.003	10.500
PHYTIN A	1.278	1.630	4.178	1.313	4.086	2.363	1.777	0.757	0.386	25.000
CHLA TOT	152.029	169.289	176.989	160.975	381.431	259.650	226.959	13.076	36.220	50.000
% DEGRAD	3.025	2.711	2.306	4.139	2.084	2.608	3.671	5.472	0.744	201.000
PIGM TOT	317.858	362.489	383.566	351.199	861.040	599.083	586.587	28.819	85.956	50.000

STATION: 14  
 LATITUDE:61 0.0S

DATE:080185  
 LONGITUDE: 63 0.5E

GMT:0729  
 SAMPLES: 8

SAMPLE	104	104	105	105	106	106	107	107	INTEG	DEPTH
DEPTH (m)	2.8	9.9	25.3	36.1	50.5	74.8	101.8	202.2	100m mg/m2	OF MAX CONC
PIGMENT CONCENTRATION (ng/l)										
CHLIDE A	0.000	2.056	2.172	3.633	10.702	1.258	0.000	0.000	0.337	50.500
CHLORO C	5.615	7.752	26.445	6.726	20.695	67.049	69.422	0.606	7.127	101.800
MCHLIDE	3.916	3.715	6.352	3.575	13.164	0.000	3.751	0.000	0.689	50.500
PHORB A1	0.000	0.000	0.000	2.036	0.000	0.000	0.000	0.000	0.026	36.100
PERIDIN	2.380	4.420	5.200	4.633	2.854	0.000	4.566	0.000	0.537	25.300
FUCOX-X	1.214	1.386	2.107	0.727	3.464	0.000	4.382	1.038	0.458	101.800
FUCOX	29.275	34.097	58.592	34.563	75.980	167.566	288.511	7.045	26.279	101.800
HEXFUCOX	33.866	37.482	54.839	42.702	43.482	67.812	51.591	6.950	8.110	74.800
NEOXANTH	0.000	0.215	0.443	0.462	0.303	0.224	0.681	0.000	0.069	101.800
PRASINIX	0.000	0.000	0.000	0.000	0.000	0.000	0.718	0.000	0.046	101.800
VIOLAX	0.381	0.396	0.674	0.438	0.000	1.077	1.907	0.000	0.170	101.800
DIADINIX	18.865	21.942	36.039	20.402	23.857	31.993	24.390	0.797	3.972	25.300
ALLOX	1.201	1.297	1.763	1.389	2.110	1.679	1.567	0.358	0.264	50.500
DIATOX	7.050	5.052	7.139	4.211	3.864	4.179	2.844	0.000	0.611	25.300
ZEAXANTH	0.570	0.648	0.711	0.000	0.636	1.260	1.275	0.000	0.146	101.800
CANTHAX	0.000	0.151	0.000	0.422	0.000	0.512	0.000	0.000	0.020	74.800
U23	0.165	0.162	0.000	0.702	0.000	0.430	0.000	0.000	0.023	36.100
CHLORO B	0.000	0.000	0.000	0.755	0.000	1.692	3.405	0.000	0.270	101.800
U26	0.000	0.171	0.324	0.000	0.000	0.000	1.355	0.000	0.092	101.800
CHL ALLO	0.000	0.000	1.555	0.000	0.000	0.845	0.000	0.000	0.042	25.300
CHLORO A	92.165	100.843	150.406	103.045	148.885	260.663	360.012	21.373	38.561	101.800
CHL EPIM	0.309	0.000	2.141	0.000	1.292	1.795	4.232	0.000	0.371	101.800
UNKNOWN4	0.000	0.000	0.270	0.000	0.184	0.000	0.000	0.000	0.007	25.300
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	0.645	0.874	1.172	0.000	1.755	0.000	3.441	0.886	0.327	101.800
CHLA TOT	96.081	106.613	158.930	110.253	172.752	261.920	363.763	21.373	39.586	101.800
% DEGRAD	0.983	0.813	2.972	1.813	1.733	0.998	2.066	3.979	0.468	202.200
PIGM TOT	197.616	222.657	358.344	230.421	353.229	610.034	828.150	39.063	88.554	101.800

STATION: 15  
 LATITUDE: 60 0.25

DATE: 080185  
 LONGITUDE: 63 0.2E

GMT: 1400  
 SAMPLES: 8

SAMPLE	108	108	109	109	110	110	111	111	INTEG	DEPTH
DEPTH (m)	2.0	10.0	25.0	35.0	50.0	78.0	104.0	208.0	100m	OF MAX
									mg/m2	CONC
PIGMENT CONCENTRATION (ng/l)										
CHLIDE A	1.849	4.564	11.946	3.386	0.000	0.000	0.000	0.000	0.255	25.000
CHLORO C	13.101	2.666	20.888	5.891	17.085	27.960	26.933	2.243	3.434	78.000
MCHLIDE	7.843	3.318	2.773	7.163	16.665	1.655	0.000	0.000	0.612	50.000
PHORB A1	2.482	1.840	0.000	0.000	0.000	0.000	0.000	0.000	0.036	2.000
PERIDIN	4.315	3.069	3.317	3.357	3.157	1.284	2.082	1.085	0.439	2.000
FUCOX-X	1.521	0.906	1.077	1.402	4.482	1.648	5.151	2.928	0.678	104.000
FUCOX	57.257	22.733	44.331	45.822	89.791	110.731	92.269	10.177	13.179	78.000
HEXFUCOX	46.983	16.238	31.051	31.035	49.109	26.566	35.258	11.530	5.909	50.000
NEOXANTH	0.696	0.000	0.000	0.386	0.456	0.000	0.000	0.000	0.019	2.000
PRASINOX	0.000	0.000	0.000	0.000	0.258	0.000	1.201	0.000	0.084	104.000
VIOLAX	0.000	0.356	0.000	0.484	0.640	0.000	0.371	0.000	0.087	104.000
DIADINDX	27.567	13.193	19.784	11.354	26.853	12.728	6.120	3.860	2.225	2.000
ALLOX	1.297	0.673	1.189	1.253	2.192	0.874	0.894	0.622	0.207	50.000
DIATDX	3.242	1.575	2.952	2.463	3.859	1.147	0.521	0.000	0.253	50.000
ZEAXANTH	0.779	0.226	0.330	0.758	0.000	0.916	1.920	0.000	0.170	104.000
CANTHAX	0.000	0.000	0.305	0.000	0.000	0.000	0.000	0.000	0.004	25.000
U23	0.000	0.000	0.000	0.239	0.000	0.290	0.000	0.000	0.011	78.000
CHLORO B	0.000	0.000	1.420	0.000	0.000	0.735	15.773	0.000	1.063	104.000
U26	0.505	0.216	0.000	0.000	0.500	0.686	0.837	0.475	0.114	104.000
CHL ALLO	0.000	0.000	1.519	0.000	0.000	0.000	1.669	1.360	0.198	104.000
CHLORO A	126.533	52.468	110.732	122.110	172.005	140.573	139.485	37.816	22.800	50.000
CHL EPIM	1.594	0.000	1.564	0.000	1.595	1.165	0.000	0.000	0.095	50.000
UNKNJWN4	0.000	0.000	0.000	0.000	0.000	0.327	0.000	0.000	0.009	78.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	1.605	0.000	0.104	104.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	2.425	0.811	0.000	1.449	1.962	1.776	0.947	0.000	0.194	2.000
CHLA TOT	136.224	60.350	125.451	132.658	188.671	142.228	139.485	37.816	23.667	50.000
% DEGRAD	4.555	4.208	2.398	1.080	1.850	2.026	2.937	3.471	0.585	2.000
PIGM TOT	299.989	124.851	255.180	238.551	390.609	331.061	333.635	72.096	52.179	50.000

STATION: 16  
 LATITUDE: 60 0.0S

DATE: 090185  
 LONGITUDE: 68 0.0E

GMT: 0356  
 SAMPLES: 8

SAMPLE	112	113	114	115	116	117	118	119	INTEG	DEPTH
DEPTH (m)	3.0	10.0	25.0	36.0	50.0	75.0	104.0	205.0	100m	OF MAX
									mg/m2	CONC
PIGMENT CONCENTRATION (ng/l)										
CHLIDE A	2.672	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.017	3.000
CHLORO C	0.370	4.958	7.499	0.000	119.819	3.943	1.021	0.000	2.664	50.000
MCHLIDE	0.000	2.592	0.000	4.370	0.000	0.000	0.000	0.000	0.083	36.000
PHORB A1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PERIDIN	0.000	1.748	1.793	1.666	2.873	2.662	1.957	0.000	0.318	50.000
FUCOX-X	0.000	0.872	1.321	1.506	0.000	3.483	2.780	0.000	0.320	75.000
FUCDX	15.745	13.230	17.215	26.463	110.387	72.391	12.076	1.380	5.764	50.000
HEXFUCDX	25.833	25.208	30.206	26.499	53.434	37.974	13.936	2.034	4.245	50.000
NEOXANTH	0.000	0.127	0.000	0.000	0.000	0.000	0.000	0.000	0.001	10.000
PRASINOX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
VIOLAX	0.000	0.082	0.362	0.000	0.799	1.066	0.000	0.000	0.050	75.000
DIADINX	14.071	12.656	11.718	12.199	24.369	7.757	2.925	0.424	1.432	50.000
ALLOX	0.897	0.728	0.938	0.872	1.451	1.428	1.074	0.000	0.174	50.000
DIATOX	3.790	2.854	2.636	2.152	2.492	1.003	0.000	0.000	0.193	3.000
ZEAXANTH	0.514	0.473	0.689	0.594	1.325	1.335	0.000	0.000	0.087	75.000
CANTHAX	0.000	0.000	0.000	0.000	0.575	0.000	0.000	0.000	0.011	50.000
u23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORO B	0.000	0.352	0.000	0.000	0.000	5.758	0.000	0.000	0.159	75.000
u26	0.000	0.000	0.000	0.000	0.000	0.677	0.000	0.000	0.019	75.000
CHL ALLO	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORO A	62.730	51.944	64.344	67.887	158.605	119.854	21.992	4.880	10.669	50.000
CHL EPIM	0.000	0.347	0.000	0.000	1.066	1.297	0.000	0.000	0.060	75.000
UNKNOWN4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	0.540	0.000	1.743	0.000	0.000	1.865	0.000	0.000	0.077	75.000
CHLA TOT	65.403	54.535	64.344	72.256	158.605	119.854	21.992	4.880	10.769	50.000
% DEGRAD	0.819	0.632	2.638	0.000	0.668	2.571	0.000	0.000	0.129	25.000
PIGM TOT	127.264	118.168	140.461	144.206	477.195	262.494	57.761	8.718	26.343	50.000

STATION: 17  
 LATITUDE: 61 0.35

DATE: 090185  
 LONGITUDE: 69 0.3E

GMT: 1158  
 SAMPLES: 6

SAMPLE	120	121	122	124	125	126	INTEG	DEPTH
DEPTH (m)	2.5	10.0	24.0	50.0	75.0	100.0	100m mg/m2	OF MAX CONC
PIGMENT CONCENTRATION (ng/l)								
CHLIDE A	2.173	0.000	24.647	0.000	14.335	0.000	0.965	24.000
CHLORO C	26.444	50.056	51.190	2.844	89.735	56.130	4.717	76.000
MCHLIDE	7.028	30.779	24.039	2.340	2.340	2.528	1.004	10.000
PHORB A1	0.000	0.000	0.000	0.000	8.012	6.185	0.275	76.000
PERIDIN	6.557	4.269	5.041	0.000	3.024	2.257	0.290	2.600
FUCOX-X	2.194	2.759	1.999	0.721	8.558	9.988	0.436	100.000
FUCOX	121.715	196.567	176.274	46.267	184.544	140.002	13.892	10.000
HEXFUCOX	29.976	47.256	40.318	13.238	118.751	119.998	6.254	100.000
NEOXANTH	0.531	0.625	0.417	0.000	1.247	0.802	0.059	76.000
PRASINOX	0.000	0.211	0.277	0.000	1.227	1.315	0.054	100.000
VIOLAX	0.600	0.992	0.528	0.000	0.541	1.698	0.059	100.000
DIADINOX	50.483	80.335	63.073	10.963	20.935	12.139	3.393	10.000
ALLOX	0.772	1.647	0.746	0.307	3.329	3.125	0.166	76.000
DIATOX	7.968	12.252	7.280	1.147	2.472	2.268	0.445	10.000
ZEAXANTH	0.793	1.052	0.693	0.000	0.782	0.748	0.059	10.000
CANTHAX	0.230	0.937	0.168	0.000	0.292	0.000	0.022	10.000
U23	0.312	0.871	0.577	0.000	0.000	0.000	0.023	10.000
CHLORO B	0.000	0.793	0.000	0.000	1.652	3.730	0.095	100.000
U26	0.467	0.000	0.489	0.000	0.846	0.000	0.034	76.000
CHL ALLO	1.845	1.140	0.000	0.000	0.000	0.000	0.024	2.600
CHLORO A	212.730	302.976	252.683	63.499	301.969	275.854	22.146	10.000
CHL EPIM	1.465	2.727	1.169	0.000	1.711	1.605	0.124	10.000
UNKNOWN4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	2.017	3.558	1.427	0.000	4.834	3.576	0.243	76.000
CHLA TOT	221.931	333.755	301.369	65.839	318.644	278.382	24.015	10.000
% DEGRAD	2.344	2.176	0.854	0.000	4.369	3.923	0.211	76.000
PIGM TOT	476.201	741.801	653.035	141.325	771.135	643.949	54.678	76.000

STATION: 18  
 LATITUDE: 62 0.35

DATE: 090185  
 LONGITUDE: 68 0.3E

GMT: 1803  
 SAMPLES: 8

SAMPLE	128	129	130	131	132	133	134	135	INTEG	DEPTH
DEPTH (m)	3.0	10.0	24.0	35.0	52.0	75.0	100.0	200.0	100m	OF MAX
	mS/m2									CONC
	PIGMENT CONCENTRATION (ng/l)									
CHLIDE A	81.139	0.000	0.000	65.063	57.048	0.000	0.000	0.000	2.579	3.000
CHLORO C	312.292	31.549	75.459	369.736	443.322	128.127	0.000	0.594	20.452	52.000
MCHLIDE	42.656	166.612	172.854	116.187	24.117	4.391	10.512	0.000	7.059	24.000
PHORB A1	5.985	0.000	0.000	0.000	3.838	8.316	5.067	0.000	0.632	75.000
PERIDIN	18.025	25.597	21.779	10.729	6.108	3.303	0.000	0.000	1.010	10.000
FUCOX-X	4.280	7.880	7.806	8.209	15.241	12.238	8.774	0.664	1.503	52.000
FUCOX	466.663	698.475	768.308	718.483	504.924	158.308	125.265	31.694	53.582	24.000
HEXFUCOX	262.037	356.218	380.115	364.572	580.947	156.357	115.814	20.269	38.922	52.000
NEOXANTH	1.663	4.707	5.851	6.144	4.883	1.227	0.960	0.000	0.406	35.000
PRASINOX	0.749	1.534	1.918	0.000	4.641	1.685	1.441	0.157	0.276	52.000
VIOLAX	0.769	1.767	3.910	2.161	7.368	3.350	1.752	1.038	0.492	52.000
DIADINOX	134.101	245.808	265.324	164.063	77.114	16.369	22.298	8.802	12.835	24.000
ALLOX	7.663	13.139	13.381	12.498	15.823	4.643	3.396	0.625	1.201	52.000
DIATOX	16.054	30.530	27.289	16.640	6.098	1.827	1.897	0.657	1.316	10.000
ZEAXANTH	0.000	0.000	0.000	0.000	3.519	0.740	0.531	0.526	0.143	52.000
CANTHAX	1.221	2.346	2.332	0.000	0.713	0.399	0.000	0.000	0.086	10.000
J23	1.233	2.853	1.970	0.000	0.892	0.000	0.000	0.000	0.080	10.000
CHLORO B	0.000	2.676	0.000	0.000	0.000	2.520	2.671	0.000	0.256	10.000
J26	1.007	0.000	0.000	0.000	3.348	1.117	1.059	0.000	0.167	52.000
CHL ALLO	4.903	6.278	2.737	0.000	3.220	1.553	1.375	0.000	0.320	10.000
CHLORO A	898.307	1192.776	1351.647	1147.500	1060.321	344.342	251.290	53.730	99.186	24.000
CHL EPIM	4.073	9.465	7.566	4.565	9.684	3.256	0.000	1.563	0.634	52.000
UNKNOWN4	0.000	0.000	0.000	0.000	0.429	0.000	0.000	0.000	0.009	52.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	5.908	10.257	0.000	0.000	21.221	8.662	6.660	0.000	1.195	52.000
CHLA TOT	1022.102	1359.388	1524.501	1328.750	1141.486	348.734	261.802	53.730	108.824	24.000
% DEGRAD	2.001	1.877	0.671	0.342	3.219	5.880	4.766	2.827	0.691	75.000
PIGM TOT	2270.729	2810.465	3110.243	3006.552	2854.819	872.730	560.764	120.319	244.345	24.000

STATION: 19  
 LATITUDE: 62 59.9S

DATE: 100185  
 LONGITUDE: 67 58.5E

GMT: 0001  
 SAMPLES: 8

SAMPLE	136	137	138	139	140	141	142	143	INTEG	DEPTH
DEPTH (m)	2.0	10.0	25.0	35.0	50.0	75.0	100.0	200.0	100m mg/m2	OF MAX CONC
PIGMENT CONCENTRATION (ng/l)										
CHLIDE A	154.654	0.000	91.928	0.000	65.390	0.000	0.000	0.000	3.385	2.000
CHLORO C	438.544	439.448	349.366	0.000	362.741	76.287	27.862	0.000	22.955	10.000
MCHLIDE	301.292	137.497	142.468	123.602	37.391	7.797	5.170	0.000	7.981	2.000
PHORB A1	0.000	0.000	0.000	0.000	0.000	6.582	0.000	2.083	0.269	75.000
PERIODIN	29.947	19.295	17.051	6.971	4.070	1.671	0.000	0.000	0.825	2.000
FUCOX-X	9.618	9.232	8.039	10.023	9.288	7.986	4.911	0.747	1.119	35.000
FUCOX	785.113	819.775	831.193	977.133	642.159	161.339	62.420	34.450	59.243	35.000
HEXFUCOX	317.824	326.366	335.614	445.491	380.189	161.339	72.231	21.244	32.638	35.000
NEDXANTH	3.208	1.698	2.723	0.000	2.825	1.382	0.000	0.000	0.164	2.000
PRASINOX	0.000	1.022	0.000	0.000	4.088	1.862	1.072	0.000	0.207	50.000
VIOLAX	1.803	3.134	0.000	3.298	3.690	2.395	0.637	0.000	0.262	50.000
DIADINOX	318.083	324.626	259.315	264.228	121.655	30.372	8.413	7.177	16.263	10.000
ALLOX	9.993	12.851	10.379	15.849	11.547	3.636	2.038	0.672	1.018	35.000
DIATOX	17.603	23.151	19.111	18.123	9.363	1.920	1.279	0.512	1.166	10.000
ZEAXANTH	0.000	1.995	0.000	0.000	2.306	0.587	0.000	0.000	0.084	50.000
CANTHAX	2.340	2.115	0.000	0.000	0.000	0.000	0.000	0.000	0.038	2.000
u23	2.162	1.683	1.638	0.916	0.000	0.000	0.000	0.000	0.064	2.000
CHLORO B	0.000	0.000	0.000	0.000	0.000	1.353	0.000	0.000	0.034	75.000
u26	0.000	0.000	0.000	5.240	2.316	1.232	0.783	0.000	0.192	35.000
CHL ALLO	0.000	6.761	0.000	3.910	3.741	0.000	0.000	0.000	0.201	10.000
CHLORO A	1467.221	1260.670	1310.493	1540.311	1071.798	303.697	141.880	62.263	99.945	35.000
CHL EPIM	0.000	7.911	7.501	4.277	6.555	1.800	0.000	1.153	0.474	10.000
UNKNOWN4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	1.289	0.000	0.081	100.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	0.000	9.070	9.223	15.015	15.710	9.843	5.742	2.293	1.441	50.000
CHLA TOT	1923.167	1398.167	1544.889	1663.913	1174.579	311.494	147.051	62.263	111.311	2.000
% DEGRAD	0.000	1.670	1.077	1.375	2.166	5.527	4.563	8.169	0.925	200.000
PIGM TOT	3859.414	3408.290	3395.141	3434.385	2756.824	783.078	335.728	132.612	250.043	2.000

STATION: 20  
 LATITUDE: 64 0.15

DATE: 100185  
 LONGITUDE: 68 0.2E

GMT: 0765  
 SAMPLES: 8

SAMPLE	144	145	146	147	148	149	150	151	INTEG	DEPTH
DEPTH (m)	3.0	10.0	25.0	35.0	50.0	75.0	100.0	200.0	100m	OF MAX
									mg/m2	CONC
PIGMENT CONCENTRATION (ng/l)										
CHLIDE A	0.000	26.033	0.000	56.980	23.893	0.000	0.000	0.000	1.476	35.000
CHLORD C	54.640	61.660	2.842	119.808	271.299	50.753	31.925	53.472	13.930	50.000
MCHLIDE	12.938	26.844	23.278	40.523	38.756	4.276	3.174	0.000	2.257	35.000
PHORB A1	0.000	0.000	0.000	0.000	31.136	11.226	0.000	0.000	0.903	50.000
PERIDIN	5.947	3.216	5.443	7.426	0.000	1.628	0.000	0.000	0.276	35.000
FUCGX-X	2.291	1.566	3.024	6.077	10.146	4.653	3.763	0.959	0.748	50.000
FUCOX	156.441	160.924	142.741	399.808	530.223	87.486	45.731	19.251	26.181	50.000
HEXFUCOX	53.534	41.988	40.451	120.605	218.615	106.444	75.132	28.764	15.990	50.000
NEOXANTH	0.472	0.399	1.095	2.301	6.258	0.000	0.000	0.000	0.175	50.000
PRASINOX	0.282	0.077	0.368	0.983	1.415	1.276	0.557	0.592	0.144	50.000
VIOLAX	0.676	0.681	0.611	1.447	6.246	1.714	0.000	0.499	0.230	50.000
DIADINOX	65.767	63.111	45.578	80.576	70.926	17.304	6.700	5.393	5.245	35.000
ALLOX	2.055	1.347	3.349	1.025	5.601	3.263	2.153	0.932	0.458	50.000
DIATOX	8.358	5.317	7.687	8.541	2.799	1.563	1.117	0.000	0.481	35.000
ZEAXANTH	1.989	1.821	3.761	3.472	2.461	0.587	0.000	0.000	0.187	25.000
CANTHAX	0.405	0.381	0.598	0.905	0.000	0.000	0.000	0.000	0.026	35.000
u23	0.472	0.460	0.597	0.000	0.000	0.000	0.000	0.000	0.017	25.000
CHLORD B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
u26	0.432	0.291	0.999	0.000	0.000	0.852	0.445	0.867	0.111	25.000
CHL ALLO	0.000	1.028	3.381	0.000	3.089	0.522	0.000	1.753	0.216	25.000
CHLORD A	262.945	240.941	228.385	612.359	824.470	204.339	130.112	42.734	46.735	50.000
CHL EPIM	1.482	1.009	3.998	2.194	3.907	1.768	0.534	0.000	0.254	25.000
UNKNOWN4	0.000	0.000	0.000	3.652	0.000	0.514	0.000	0.000	0.058	35.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	0.000	2.455	5.717	4.854	18.014	14.062	6.908	3.137	1.460	50.000
CHLA TOT	275.882	293.818	251.662	709.863	887.119	208.614	133.286	42.734	50.469	50.000
% DEGRAD	0.534	1.506	4.946	0.983	5.952	11.676	5.288	10.268	1.349	75.000
PIGM TOT	632.127	641.549	524.001	1473.538	2069.252	514.230	308.253	158.354	117.559	50.000



STATION: 21  
 LATITUDE: 65 1.55

DATE: 100185  
 LONGITUDE: 68 2.8E

GMT: 1445  
 SAMPLES: 8

SAMPLE	152	153	154	155	156	157	158	159	INTEG	DEPTH
DEPTH (m)	3.0	10.0	25.0	35.0	50.0	75.0	100.0	200.0	100m	OF MAX
									mg/m2	CONC
PIGMENT CONCENTRATION (ng/l)										
CHLIDE A	0.000	0.000	0.000	0.000	56.336	14.121	0.000	0.000	1.480	50.000
CHLORD C	206.571	231.111	147.707	799.749	307.518	49.915	23.477	16.380	25.413	35.000
MCHLIDE	93.374	101.754	69.875	367.737	63.497	25.629	8.181	13.674	10.302	35.000
PHORB A1	0.000	5.074	0.000	0.000	71.675	0.000	4.741	0.000	1.786	50.000
PERIDIN	14.088	8.237	2.504	28.175	0.000	2.208	5.357	3.077	1.110	35.000
FUCOX-X	6.892	4.246	2.000	10.657	10.562	2.142	0.544	3.557	0.726	35.000
FUCOX	595.210	554.419	417.383	1791.432	796.563	135.109	60.772	61.468	63.758	35.000
HEXFUCOX	145.153	104.908	76.409	280.139	88.476	21.104	9.988	14.316	10.192	35.000
NEOXANTH	3.883	5.184	1.701	30.495	6.044	3.002	0.596	1.265	0.781	35.000
PRASINOX	0.337	0.000	0.252	1.887	2.359	1.092	0.524	1.219	0.197	50.000
VIOLAX	3.339	1.702	0.746	3.123	5.273	1.278	0.990	1.245	0.350	50.000
DIADINOX	190.088	167.100	106.379	319.774	90.650	30.743	12.337	5.635	12.035	35.000
ALLOX	5.276	4.800	3.503	10.074	2.257	0.986	0.647	1.390	0.437	35.000
DIATOX	33.319	21.125	10.410	24.044	9.262	3.169	0.999	2.027	1.308	3.000
ZEAXANTH	2.686	2.311	1.373	2.486	1.528	0.397	0.668	0.000	0.173	3.000
CANTHAX	1.323	1.649	0.831	2.161	0.000	0.000	0.000	0.000	0.064	35.000
U23	2.326	1.595	0.822	2.767	0.000	0.000	0.000	0.000	0.078	35.000
CHLORD B	0.000	0.000	0.000	0.000	0.000	1.695	0.000	0.000	0.042	75.000
U26	0.672	0.853	0.760	1.639	0.000	0.970	0.000	0.000	0.068	35.000
CHL ALLO	0.000	3.482	4.467	4.673	2.376	3.908	0.000	1.680	0.382	35.000
CHLORD A	818.859	641.015	502.867	2048.354	1021.314	199.754	97.276	101.340	80.831	35.000
CHL EPIM	3.259	4.129	2.682	8.870	2.593	7.956	1.299	1.756	0.633	35.000
UNKNOWN4	0.000	0.000	0.674	2.411	0.000	0.000	0.000	0.000	0.039	35.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	12.222	9.632	9.974	43.310	10.666	0.000	3.216	5.746	1.552	35.000
CHLA TOT	912.233	742.769	572.742	2416.092	1141.147	239.504	105.457	115.014	92.613	35.000
% DEGRAD	1.669	2.917	2.886	2.299	7.115	4.720	8.069	7.393	1.242	100.000
PIGM TOT	2138.876	1874.324	1363.218	5783.959	2549.049	505.175	231.614	235.776	213.735	35.000

STATION: 22  
 LATITUDE: 66 0.1S

DATE: 100185  
 LONGITUDE: 67 59.1E

GMT: 2128  
 SAMPLES: 7

SAMPLE	160	161	162	163	164	165	166	INTEG	DEPTH
DEPTH (m)	3.0	10.0	25.0	40.0	75.0	100.0	200.0	100m mg/m2	OF MAX CDNC
PIGMENT CONCENTRATION (ng/l)									
CHLIDE A	0.000	0.000	0.000	0.000	16.901	0.000	0.000	0.507	75.000
CHLORD C	318.925	312.490	675.490	198.812	140.665	55.083	5.551	28.553	25.000
MCHLIDE	173.317	343.973	2214.420	67.145	50.216	13.424	7.977	42.553	25.000
PHORB A1	0.000	0.000	0.000	46.703	28.205	14.708	0.000	2.933	40.000
PERIDIN	18.630	19.704	27.106	3.411	2.104	1.470	0.000	0.985	25.000
FUCOX-X	4.766	4.429	5.400	4.959	4.308	3.982	0.000	0.663	25.000
FUCOX	587.661	863.466	1715.324	546.130	372.426	92.267	67.801	73.031	25.000
HEXFUCOX	81.391	91.944	143.076	76.180	91.145	70.038	18.949	13.653	25.000
NEOXANTH	4.167	3.270	11.289	0.000	4.715	0.751	0.449	0.443	25.000
PRASINOX	0.763	0.000	0.642	2.117	2.174	0.737	0.468	0.202	75.000
VIOLAX	2.780	1.502	2.532	2.045	1.737	0.969	0.515	0.262	3.000
DIADINOX	205.466	315.100	318.859	52.399	40.527	18.580	7.859	13.665	25.000
ALLOX	4.441	3.880	5.436	2.678	2.556	2.391	0.733	0.483	25.000
DIATOX	17.940	27.508	14.019	3.003	2.790	1.430	0.882	0.922	10.000
ZEAXANTH	1.833	1.545	1.810	1.818	1.164	0.637	0.000	0.176	3.000
CANTHAX	1.419	0.000	0.824	0.000	0.000	0.000	0.000	0.022	3.000
u23	2.031	1.986	1.756	0.000	0.000	0.000	0.000	0.061	3.000
CHLORD B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
u26	0.000	0.000	0.969	3.077	1.094	0.000	0.000	0.124	40.000
CHL ALLO	3.654	0.000	1.804	7.486	3.416	1.524	0.825	0.477	40.000
CHLORD A	638.038	659.870	1158.392	658.684	535.364	192.860	86.616	77.694	25.000
CHL EPIM	4.539	2.747	6.382	1.853	3.274	1.805	0.000	0.413	25.000
UNKNOWN4	0.000	0.000	0.787	0.000	0.461	0.000	0.000	0.026	25.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	3.076	0.000	0.192	100.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.890	0.000	0.056	100.000
PHYTIN A	15.981	20.543	41.218	14.647	15.171	6.282	3.410	2.333	25.000
CHLA TOT	811.355	1003.842	3372.912	725.830	602.481	206.284	94.593	120.754	25.000
% DEGRAD	2.892	2.267	1.444	8.875	7.672	11.723	4.285	1.454	100.000
PIGM TOT	2088.745	2673.958	6347.534	1693.145	1320.413	482.906	202.035	260.428	25.000

STATION: 24  
 LATITUDE: 67 0.1S

DATE: 110185  
 LONGITUDE: 68 0.1E

GMT: 0855  
 SAMPLES: 8

SAMPLE DEPTH (m)	167	168	169	170	171	172	173	174	INTEG 100m mg/m2	DEPTH OF MAX CONC
	PIGMENT CONCENTRATION (ng/l)									
CHLIDE A	0.000	0.000	0.000	0.000	0.000	0.000	12.575	0.000	0.786	100.000
CHLORD C	67.449	64.010	40.223	0.000	166.326	173.956	29.766	0.000	11.183	75.000
MCHLIDE	20.313	9.313	15.601	10.426	55.916	82.770	20.249	0.000	5.018	75.000
PHORB A1	0.000	0.000	0.000	0.000	0.000	0.000	4.382	0.000	0.274	100.000
PERIDIN	3.148	0.000	3.008	2.633	9.520	2.794	1.423	0.000	0.442	50.000
FUCOX-X	2.270	0.848	2.139	2.347	7.282	10.572	8.656	2.114	1.138	75.000
FUCOX	105.831	95.127	73.584	87.930	2487.494	273.087	147.667	28.480	70.989	50.000
HEXFUCOX	72.189	84.984	76.700	86.937	242.622	147.671	73.902	18.682	17.540	50.000
NEOXANTH	0.000	0.318	0.484	0.423	1.268	1.022	0.618	0.000	0.104	50.000
PRASINOX	0.177	0.315	0.323	0.637	1.132	1.453	2.446	0.000	0.228	100.000
VIOLAX	0.435	0.419	0.666	0.350	1.610	3.262	1.000	0.000	0.196	75.000
DIADINOX	63.550	51.040	32.643	30.187	60.569	25.765	15.583	3.563	4.879	4.000
ALLOX	2.662	2.291	2.879	3.390	8.565	4.025	2.390	0.000	0.542	50.000
OIATDX	12.578	11.656	9.271	9.477	9.822	2.596	2.411	0.000	0.857	4.000
ZEAXANTH	4.149	3.454	1.461	2.276	3.326	1.789	0.907	0.000	0.280	4.000
CANTHAX	0.325	0.303	0.000	0.236	0.620	0.668	0.000	0.000	0.038	75.000
u23	0.396	0.410	0.000	0.451	0.912	0.000	0.000	0.000	0.031	50.000
CHLORD B	0.000	0.000	0.000	0.000	6.893	17.583	14.007	0.000	1.453	75.000
u26	0.791	0.531	0.000	0.507	0.955	1.302	1.639	0.000	0.172	100.000
CHL ALLO	0.696	3.161	0.000	0.580	0.000	1.996	4.746	0.000	0.392	100.000
CHLORD A	227.905	230.096	170.099	194.637	509.329	397.861	237.760	58.340	46.480	50.000
CHL EPIM	0.584	1.756	1.095	1.138	2.835	1.530	1.408	0.000	0.233	50.000
UNKNOWN4	0.000	0.419	0.000	0.000	0.000	0.000	0.000	0.000	0.004	10.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	1.408	1.096	0.000	0.104	75.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.818	0.000	0.051	100.000
PHYTIN A	2.058	2.062	1.623	2.324	4.563	3.803	5.743	0.000	0.631	100.000
CHLA TOT	248.118	239.409	185.703	205.063	565.245	480.631	270.584	58.340	52.284	50.000
% DEGRAD	1.323	2.833	1.443	1.933	1.292	1.785	6.034	0.000	0.529	100.000
PIGM TOT	587.396	572.512	431.800	436.875	3581.560	1156.911	591.190	111.179	164.044	50.000

STATION: 26  
 LATITUDE: 69 0.0S

DATE: 130185  
 LONGITUDE: 78 0.2E

GMT: 0915  
 SAMPLES: 8

SAMPLE	179	190	181	182	183	184	185	196	INTEG	DEPTH
DEPTH (m)	2.0	10.0	25.0	35.0	50.0	78.0	108.0	210.0	100m mg/m2	OF MAX CONC
PIGMENT CONCENTRATION (ng/l)										
CHLIDE A	0.000	0.000	0.000	0.000	56.861	60.131	0.000	0.000	2.965	78.000
CHLORO C	785.983	1928.731	1385.866	1729.537	436.290	301.133	8.196	8.843	84.943	10.000
MCHLIDE	1504.972	917.899	1682.218	1540.365	139.287	153.452	13.399	0.000	68.197	25.000
PHORB A1	0.000	77.967	78.720	41.934	30.479	50.810	0.000	4.295	4.753	25.000
PERIDIN	79.316	74.230	46.147	0.000	5.550	0.000	0.000	0.000	2.026	2.000
FUCOX-X	18.126	17.343	10.477	11.629	2.640	2.713	3.582	1.730	1.045	2.000
FUCOX	2259.045	3406.129	2673.350	3752.475	1070.321	746.588	214.201	36.526	193.711	35.000
HEXFUCOX	367.267	584.930	404.045	529.986	121.634	80.692	55.217	15.092	29.975	10.000
NEOXANTH	23.210	44.497	34.739	33.101	6.014	2.623	0.000	0.000	1.704	10.000
PRASINX	0.000	3.639	2.281	3.577	0.889	0.715	0.509	0.481	0.213	10.000
VIOLAX	8.205	16.325	10.671	14.576	2.604	2.807	0.585	0.259	0.742	10.000
DIADINDX	401.879	600.305	410.155	401.204	75.497	83.702	17.668	6.512	25.006	10.000
ALLOX	5.249	30.723	21.901	27.815	4.229	1.995	1.989	0.680	1.321	10.000
DIATOX	0.000	50.448	59.600	25.246	13.581	11.108	2.153	0.747	2.435	25.000
ZEAXANTH	32.463	1.763	1.605	2.778	1.376	0.942	0.607	0.428	0.389	2.000
CANTHAX	1.862	4.590	3.379	2.277	0.000	0.000	0.382	0.000	0.160	10.000
u23	3.293	5.027	2.810	2.444	0.000	0.000	0.000	0.000	0.143	10.000
CHLORO B	37.153	54.755	39.631	101.657	11.576	2.973	3.216	1.281	3.231	35.000
u26	0.000	0.000	2.509	5.069	5.168	2.073	2.360	0.472	0.446	50.000
CHL ALLO	15.360	7.905	8.924	34.577	24.084	11.280	1.791	1.432	1.763	35.000
CHLORO A	2492.874	3511.684	2483.917	3094.854	1420.157	1031.760	308.077	70.775	209.473	10.000
CHL EPIM	12.960	16.925	13.852	36.408	5.760	4.680	0.855	0.000	1.279	35.000
UNKNOWN4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	13.329	24.036	22.240	27.125	16.355	18.339	5.666	2.182	2.342	35.000
CHLA TOT	3997.845	4429.583	4166.135	4635.218	1616.305	1245.344	321.476	70.775	280.637	35.000
% DEGRAD	1.031	2.784	2.997	2.934	4.529	6.397	2.520	10.051	1.074	210.000
PIGM TOT	8062.452	11379.852	9404.037	11418.695	3450.351	2570.515	640.452	151.735	638.263	35.000

STATION: 29  
 LATITUDE: 67 59.9S

DATE: 140185  
 LONGITUDE: 72 57.4E

GMT: 0413  
 SAMPLES: 8

SAMPLE	187	188	189	190	191	192	193	194	INTEG	DEPTH
DEPTH (m)	2.0	10.0	25.0	35.0	50.0	75.0	100.0	200.0	100m mg/m2	D= MAX CONC
PIGMENT CONCENTRATION (ng/l)										
CHLIDE A	0.000	53.294	0.000	36.758	34.991	0.000	0.000	0.000	1.772	10.000
CHLORO C	41.431	125.124	183.859	121.762	253.522	458.918	305.203	63.313	44.292	75.000
MCHLIDE	34.004	125.696	42.778	15.396	50.552	23.926	14.141	2.015	4.970	10.000
PHORB A1	0.000	33.868	4.150	0.000	6.299	0.000	0.000	0.000	0.567	10.000
PERIDIN	0.000	4.701	0.000	7.571	7.084	3.687	24.795	0.000	1.932	100.000
FUCOX-X	1.719	2.482	0.000	15.685	47.116	19.098	17.463	0.829	2.788	50.000
FUCOX	249.620	568.324	321.732	168.821	237.995	371.394	173.580	56.077	41.863	10.000
HEXFUCOX	79.670	120.713	324.453	347.255	734.524	925.858	523.219	40.724	82.837	75.000
NEOXANTH	1.152	2.813	1.906	0.000	1.125	2.025	4.553	0.303	0.436	100.000
PRASINIX	0.677	3.557	1.101	0.927	1.572	3.112	2.404	0.536	0.359	10.000
VIOLAX	1.925	2.531	0.950	2.284	18.246	2.786	4.362	0.438	0.810	50.000
DIADINIX	113.730	211.077	113.292	56.949	41.995	99.472	66.463	6.029	13.018	10.000
ALLOX	20.754	34.945	11.923	15.445	24.662	25.967	15.845	0.678	3.035	10.000
DIATOX	14.640	25.853	12.250	11.895	5.702	3.630	1.424	1.267	1.044	10.000
ZEAXANTH	0.957	1.033	2.040	4.210	2.207	0.000	0.284	0.421	0.179	35.000
CANTHAX	0.707	1.597	1.039	0.000	0.000	1.388	0.000	0.000	0.070	10.000
U23	0.000	0.000	1.909	0.000	0.000	0.000	0.000	0.223	0.024	25.000
CHLORO B	2.777	2.971	0.000	2.912	126.493	0.000	0.000	1.265	2.680	50.000
U26	1.823	3.859	0.766	1.778	3.304	3.368	3.994	1.466	0.560	100.000
CHL ALLO	1.742	0.000	4.092	1.191	7.713	18.135	7.358	2.277	1.258	75.000
CHLORO A	515.634	865.756	730.460	643.156	1191.388	1502.953	741.924	183.844	147.184	75.000
CHL EPIM	2.026	0.000	2.521	1.814	3.168	4.453	1.242	3.058	0.472	75.000
UNKNOWN4	0.000	0.000	0.000	0.000	0.000	0.627	0.000	0.000	0.016	75.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	2.969	0.000	0.186	100.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	5.085	3.683	5.591	6.114	12.582	108.983	58.664	5.842	7.154	75.000
CHLA TOT	549.638	1044.746	773.238	695.310	1275.931	1526.879	756.065	185.859	153.927	75.000
% DEGRAD	1.585	3.470	2.071	1.295	2.278	7.933	8.500	5.673	1.150	100.000
PIGM TOT	1090.079	2193.876	1765.912	1461.926	2812.144	3579.780	1969.887	370.654	359.506	75.000

STATION: 31  
 LATITUDE: 67 0.55

DATE: 140185  
 LONGITUDE: 73 0.3E

GMT: 1211  
 SAMPLES: 8

SAMPLE DEPTH (m)	195	196	197	198	199	200	211	212	INTEG 100m mg/m2	DEPTH OF MAX CONC
PIGMENT CONCENTRATION (ng/l)										
CHLIDE A	97.481	62.875	36.684	0.000	138.828	226.350	5.785	0.000	10.485	75.000
CHLORO C	325.052	384.087	408.902	324.775	970.756	4070.150	60.152	27.055	139.888	75.000
MCHLIDE	201.138	106.803	76.245	66.006	393.291	3180.938	19.703	0.000	91.371	75.000
PHORB A1	0.000	8.348	0.000	5.655	39.675	177.508	6.534	0.000	5.712	75.000
PERIDIN	14.261	15.333	10.850	8.266	15.511	36.998	1.565	0.000	1.818	75.000
FUCOX-X	4.791	5.268	3.679	3.576	9.878	59.858	5.083	2.578	2.292	75.000
FUCOX	516.483	510.182	475.950	458.830	1390.354	7751.490	104.058	38.819	247.050	75.000
HEXFUCOX	354.483	323.785	353.822	347.283	387.233	2046.763	75.776	67.716	80.831	75.000
NEDXANTH	1.684	3.372	1.672	2.613	9.191	34.438	0.392	0.000	1.154	75.000
PRASINOX	0.000	0.315	0.000	0.000	1.258	19.656	2.312	0.462	0.678	75.000
VIOLAX	1.672	1.354	1.938	1.611	5.047	32.300	1.085	0.000	1.031	75.000
DIADINDX	181.951	152.313	169.702	148.560	116.926	680.818	16.945	10.905	27.548	75.000
ALLOX	16.191	13.251	14.731	14.724	13.324	65.313	2.008	1.845	2.712	75.000
DIATDX	18.878	21.496	15.767	11.755	11.338	41.357	0.456	0.337	1.993	75.000
ZEAXANTH	0.000	0.000	0.000	0.000	0.583	0.000	0.000	0.000	0.012	51.000
CANTHAX	1.781	1.841	1.090	1.108	1.176	0.000	0.000	0.000	0.083	10.000
u23	1.454	1.354	1.381	1.088	1.021	0.000	0.000	0.000	0.076	4.000
CHLORO B	0.000	0.000	0.000	0.000	6.411	107.563	9.259	1.170	3.401	75.000
u26	2.265	5.985	1.090	2.200	3.087	32.300	0.957	0.397	1.054	75.000
CHL ALLO	4.066	13.147	4.559	10.018	19.430	130.416	0.000	2.154	4.046	75.000
CHLORO A	1004.928	952.951	951.572	936.496	1692.497	9287.115	223.893	138.868	323.430	75.000
CHL EPIM	3.258	3.300	3.231	5.877	8.395	37.752	0.697	0.655	1.343	75.000
UNKNOWN4	0.000	0.000	0.000	0.000	1.461	0.000	0.000	0.193	0.038	51.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	27.069	1.482	0.000	0.756	75.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.739	0.000	0.046	100.000
PHYTIN A	6.015	4.963	6.081	6.244	16.789	118.910	4.589	7.444	4.159	75.000
CHLA TOT	1303.447	1122.629	1064.501	1002.502	2224.616	12694.403	249.380	138.868	425.285	75.000
% DEGRAD	1.013	2.582	1.295	2.698	3.651	3.729	5.064	6.876	0.910	200.000
PIGM TOT	2757.731	2592.322	2539.045	2356.684	5253.460	28165.063	543.470	300.588	953.008	75.000

STATION: 35  
 LATITUDE: 66 0.05

DATE: 150185  
 LONGITUDE: 72 59.4E

GMT: 0837  
 SAMPLES: 8

SAMPLE	213	214	215	216	217	218	219	220	INTEG	DEPTH
DEPTH (m)	3.0	10.0	25.0	35.0	50.0	75.0	100.0	200.0	100m mg/m2	OF MAX CONC
PIGMENT CONCENTRATION (ng/l)										
CHLIDE A	0.000	0.000	0.000	0.000	14.047	0.000	0.000	8.802	0.721	50.000
CHLORO C	94.991	61.896	34.647	211.575	153.400	37.775	5.292	13.157	9.377	35.000
MCHLIDE	7.442	30.564	38.181	57.927	33.158	3.478	2.782	7.015	2.861	35.000
PHDRB A1	0.000	0.000	0.000	5.856	4.731	6.093	2.793	0.000	0.495	75.000
PERIDIN	0.000	0.000	2.587	12.677	10.510	0.939	0.000	3.012	0.575	35.000
FUCOX-X	1.557	1.682	1.695	6.558	5.684	9.778	8.936	4.965	1.297	75.000
FUCOX	173.523	167.182	132.397	530.821	281.435	95.489	53.851	168.317	31.055	35.000
HEXFUCOX	118.477	74.996	61.480	172.011	120.456	81.722	35.873	88.011	15.608	35.000
NEOXANTH	0.000	0.594	1.340	2.178	0.942	0.401	0.000	0.000	0.079	35.000
PRASINOX	0.000	0.174	0.000	0.000	0.606	3.334	1.781	1.048	0.261	75.000
VIOLAX	0.000	0.591	0.000	0.936	1.240	1.950	1.314	0.000	0.174	75.000
DIADINDX	81.436	75.218	61.106	110.294	31.684	8.286	7.133	45.698	7.070	35.000
ALLOX	4.059	3.473	2.501	6.624	4.754	2.253	1.558	1.818	0.513	35.000
DIATOX	9.133	8.341	5.985	9.675	3.362	0.613	0.588	5.263	0.729	35.000
ZEAXANTH	1.233	1.467	1.421	2.325	1.881	0.694	0.638	1.589	0.245	35.000
CANTMAX	0.000	0.410	0.000	0.962	0.000	0.000	0.000	0.000	0.017	35.000
u23	0.000	0.512	0.507	1.261	0.000	0.000	0.000	0.000	0.028	35.000
CHLORO B	1.721	0.000	0.000	0.000	7.557	30.720	14.393	6.597	2.160	75.000
u26	2.228	0.589	0.000	1.430	1.432	1.002	1.057	1.298	0.223	3.000
CHL ALLO	36.020	3.172	0.000	0.000	3.407	0.935	0.000	0.000	0.361	3.000
CHLORO A	345.667	301.448	225.623	770.205	420.185	252.280	139.609	316.018	57.248	35.000
CHL EPIM	4.520	2.097	3.697	2.673	1.352	0.000	0.000	0.000	0.159	3.000
UNKNOWN4	1.202	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	3.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	1.927	0.000	0.120	100.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.660	0.000	0.041	100.000
PHYTIN A	4.279	4.029	3.005	6.403	3.699	0.000	2.266	1.976	0.504	35.000
CHLA TOT	353.109	332.012	263.805	828.132	467.392	255.757	142.392	331.835	60.930	35.000
% DEGRAD	11.263	2.724	2.473	1.771	2.744	2.674	4.577	0.592	0.500	3.000
PIGM TOT	887.583	738.435	576.174	1912.338	1105.522	537.742	282.453	674.575	131.935	35.000

STATION: 45  
 LATITUDE: 63 0.45

DATE: 190185  
 LONGITUDE: 77 59.7E

GMT: 0315  
 SAMPLES: 5

SAMPLE	226	227	228	229	230	INTEG	DEPTH
DEPTH (m)	2.0	25.0	50.0	100.0	200.0	100m mg/m2	OF MAX CONC

PIGMENT CONCENTRATION (ng/l)

CHLIDE A	0.000	11.737	0.000	2.001	0.000	0.432	25.000
CHLORD C	3.825	24.105	25.840	14.317	1.698	2.758	50.000
MCHLIDE	3.363	13.650	4.354	3.232	0.000	0.779	25.000
PHORB A1	0.000	0.000	0.000	9.530	2.383	0.834	100.000
PERIDIN	0.000	2.933	2.890	1.552	0.000	0.295	25.000
FUCOX-X	1.681	1.655	3.541	9.220	1.001	0.937	100.000
FUCOX	43.446	71.228	55.445	84.204	25.590	11.970	100.000
HEXFUCOX	51.970	60.773	88.566	65.304	10.106	10.884	50.000
NEOXANTH	0.437	0.735	0.000	0.669	0.000	0.074	25.000
PRASINOX	0.000	0.000	0.000	1.287	0.000	0.097	100.000
VIOLAX	0.863	0.477	0.293	0.000	0.574	0.063	2.000
DIADINOX	23.772	35.466	3.674	15.717	5.557	2.767	25.000
ALLOX	1.275	2.347	4.057	2.171	0.286	0.403	50.000
DIATDX	8.896	8.136	2.968	1.058	0.000	0.506	2.000
ZEAXANTH	1.435	2.224	1.527	1.007	0.000	0.206	25.000
CANTHAX	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
u23	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORD B	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
u26	0.626	0.000	1.190	1.457	0.000	0.162	100.000
CHL ALLO	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORD A	113.720	161.590	167.253	174.798	41.959	26.893	100.000
CHL EPIM	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
UNKNOWN4	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	2.701	1.734	1.946	4.995	1.944	0.623	100.000
CHLA TOT	117.084	186.977	171.611	180.030	41.959	28.104	25.000
% DEGRAD	2.255	0.919	1.121	7.465	9.348	1.122	200.000
PIGM TOT	258.011	398.791	363.548	392.517	91.096	60.681	25.000



STATION: 46  
 LATITUDE: 64 0.0S

DATE: 190185  
 LONGITUDE: 77 58.2E

GMT: 1232  
 SAMPLES: 5

SAMPLE	231	232	233	234	235	INTEG	DEPTH
DEPTH (m)	3.5	10.0	25.0	50.0	100.0	100m mg/m2	OF MAX CONC
PIGMENT CONCENTRATION (ng/l)							
CHLIDE A	0.000	2.950	0.000	0.000	0.000	0.032	10.000
CHLORO C	115.046	87.977	110.484	132.599	75.147	10.783	50.000
MCHLIDE	14.624	44.106	43.636	30.079	0.000	2.574	10.000
PHORB A1	2.075	0.000	0.000	3.972	0.000	0.163	50.000
PERIDIN	3.334	4.688	6.008	3.785	0.000	0.335	25.000
FUCOX-X	1.687	2.590	3.570	6.107	3.727	0.433	50.000
FUCOX	165.409	166.188	256.763	165.651	39.373	15.235	25.000
HEXFUCOX	139.675	135.288	177.047	259.538	75.993	17.571	50.000
NEOXANTH	0.000	1.066	1.423	2.114	0.000	0.119	50.000
PRASINOX	0.333	0.000	0.000	1.321	0.747	0.070	50.000
VIOLAX	0.633	0.000	0.203	0.627	0.900	0.054	100.000
DIADINOX	81.485	88.785	103.613	36.087	9.401	5.165	25.000
ALLOX	4.772	5.816	7.386	10.341	2.052	0.682	50.000
DIATOX	7.714	7.173	8.942	4.912	0.625	0.508	25.000
ZEAXANTH	3.168	3.144	3.583	3.507	0.000	0.258	25.000
CANTHAX	0.534	0.799	0.776	0.000	0.000	0.028	10.000
u23	0.705	0.620	0.845	0.423	0.000	0.044	25.000
CHLORO B	3.101	0.000	0.000	1.514	0.000	0.078	3.500
u26	0.655	0.000	0.592	0.950	1.593	0.096	100.000
CHL ALLO	0.000	0.000	0.000	1.573	2.754	0.128	100.000
CHLORO A	389.472	343.794	517.651	416.097	90.650	34.548	25.000
CHL EPIM	2.407	2.230	2.746	2.556	0.000	0.191	25.000
UNKNOWN4	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	4.249	2.853	3.821	7.438	4.684	0.532	50.000
CHLA TOT	404.096	390.850	561.287	446.175	90.650	37.153	25.000
% DEGRAD	2.115	1.284	1.156	3.365	7.584	0.367	100.000
PIGM TOT	941.144	900.068	1249.197	1091.191	307.754	89.626	25.000

STATION: 47  
 LATITUDE: 65 0.05

DATE: 190185  
 LONGITUDE: 78 0.0E

GMT: 2338  
 SAMPLES: 5

SAMPLE	236	237	238	239	240	INTEG	DEPTH
DEPTH (m)	4.6	10.0	25.0	50.0	100.0	100m	OF MAX
						mg/m2	CONC

PIGMENT CONCENTRATION (ng/l)

CHLIDE A	17.499	23.641	0.000	0.000	0.000	0.369	10.000
CHLORO C	35.022	36.998	75.591	91.736	59.016	7.060	50.000
MCHLIDE	20.989	26.699	50.044	18.493	2.186	2.175	25.000
PHORB A1	11.754	0.000	0.997	0.000	0.000	0.106	4.600
PERIDIN	4.225	3.942	5.592	11.370	2.960	0.683	50.000
FUCDX-X	3.835	1.827	3.657	0.000	17.598	0.560	100.000
FUCDX	139.191	119.297	197.297	274.420	92.569	18.784	50.000
HEXFUCDX	75.711	62.711	85.587	158.070	41.799	9.877	50.000
NEOXANTH	6.587	0.789	0.589	0.869	4.923	0.224	4.600
PRASINQX	51.964	0.000	0.000	0.315	6.133	0.544	4.600
VIOLAX	6.498	0.000	0.952	1.078	1.938	0.155	4.600
DIADINQX	161.349	54.226	66.126	38.173	11.488	4.772	4.600
ALLOX	4.346	2.541	3.685	5.505	1.020	0.363	50.000
DIATQX	16.113	5.051	8.203	4.283	0.377	0.503	4.600
ZEAXANTH	1.421	0.870	1.028	1.393	1.738	0.135	100.000
CANTHAX	0.000	0.413	0.410	0.000	0.000	0.012	10.000
w23	0.000	0.000	0.463	0.000	0.000	0.009	25.000
CHLORO B	0.000	0.000	0.000	4.044	36.141	1.055	100.000
w26	0.000	0.237	0.563	1.425	1.330	0.100	50.000
CHL ALLO	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORO A	252.205	241.141	336.639	476.947	235.389	34.804	50.000
CHL EPIM	6.623	1.057	1.025	2.218	1.061	0.189	4.600
UNKNOWN4	0.670	0.765	0.235	1.040	0.000	0.056	50.000
PHYTINX	0.000	0.000	0.834	0.000	4.299	0.124	100.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	15.474	2.050	2.766	4.924	4.047	0.475	4.600
CHLA TOT	290.694	291.480	386.683	495.440	237.575	37.347	50.000
x DEGRAD	10.430	1.058	1.433	1.421	3.809	0.264	4.600
PIGM TOT	831.479	584.264	842.283	1096.304	526.012	83.137	50.000

STATION: 48  
 LATITUDE: 66 0.6S

DATE: 200185  
 LONGITUDE: 77 59.2E

GMT: 0424  
 SAMPLES: 4

SAMPLE	241	242	243	245	INTEG	DEPTH	
	DEPTH (m)	25.0	50.0	200.0	100m mg/m2	OF MAX CONC	
		PIGMENT CONCENTRATION (ng/l)					
CHLIDE A	0.000	0.000	0.000	0.000	0.000	-1.000	
CHLORO C	7.347	19.393	102.793	23.270	11.304	50.000	
MCHLIDE	6.731	14.149	31.507	10.900	4.005	50.000	
PHORB A1	0.000	1.474	6.797	3.912	0.924	50.000	
PERIDIN	3.770	3.679	5.875	1.798	0.789	50.000	
FUCOX-X	2.199	1.707	7.532	10.072	1.485	200.000	
FUCOX	89.999	91.901	213.740	124.908	31.251	50.000	
HEXFUCOX	55.327	44.877	75.410	49.771	12.155	50.000	
NEOXANTH	0.815	0.000	1.486	0.472	0.176	50.000	
PRASINOX	0.000	0.000	0.774	5.887	0.509	200.000	
VIOLAX	0.804	0.533	1.486	3.278	0.400	200.000	
DIADINOX	37.139	38.735	33.683	12.177	5.292	25.000	
ALLOX	2.912	1.583	3.081	2.093	0.504	50.000	
DIATDX	12.018	8.936	3.009	1.269	0.735	2.000	
ZEAXANTH	1.198	1.229	1.185	1.177	0.238	25.000	
CANTHAX	0.000	0.000	0.306	0.259	0.046	50.000	
U23	0.000	0.000	0.000	0.000	0.000	-1.000	
CHLORO B	0.000	0.000	2.375	47.144	3.744	200.000	
U25	0.000	0.672	1.409	1.685	0.266	200.000	
CHL ALLO	0.000	0.000	3.716	1.664	0.450	50.000	
CHLORO A	163.329	160.469	350.509	257.383	56.029	50.000	
CHL EPIM	1.931	0.940	2.793	0.000	0.293	50.000	
UNKNOWN4	0.000	0.000	0.000	0.000	0.000	-1.000	
PHYTINX	0.000	0.000	2.446	4.142	0.525	200.000	
PHYTIN B	0.000	0.000	0.000	0.758	0.057	200.000	
PHYTIN A	1.892	1.721	4.580	4.283	0.789	50.000	
CHLA TOT	170.059	174.619	382.016	268.283	60.034	50.000	
% DEGRAD	2.199	2.314	5.053	4.960	0.899	50.000	
PIGM TOT	387.410	381.999	856.493	568.303	131.964	50.000	

STATION: 49  
 LATITUDE: 66 33.6S

DATE: 200185  
 LONGITUDE: 77 57.2E

GMT: 0948  
 SAMPLES: 6

SAMPLE	246	247	248	249	250	251	INTEG	DEPTH
DEPTH (m)	2.0	10.0	25.0	50.0	100.0	200.0	100m mg/m2	GF MAX CONC
PIGMENT CONCENTRATION (ng/l)								
CHLIDE A	0.000	0.000	0.000	0.000	4.941	21.461	1.444	200.000
CHLORO C	47.668	80.949	26.560	102.823	1.667	0.638	5.761	50.000
MCHLIDE	34.152	28.226	9.939	31.507	0.000	0.000	1.910	2.000
PHORB A1	0.000	0.000	0.000	6.797	0.000	0.000	0.255	50.000
PERIDIN	5.522	7.378	3.002	5.875	1.077	0.000	0.485	10.000
FUCOX-X	2.498	3.204	2.611	7.532	5.931	1.875	0.925	50.000
FUCOX	259.033	295.557	225.172	213.732	105.077	5.785	25.642	10.000
HEXFUCOX	69.169	83.330	77.848	75.406	30.502	3.761	8.234	10.000
NEOXANTH	0.635	1.206	0.356	1.486	0.453	0.000	0.124	50.000
PRASINOX	0.414	0.000	0.000	0.000	3.027	0.503	0.255	100.000
VIOLAX	1.256	1.500	1.067	1.486	1.251	0.000	0.196	10.000
DIADINPX	95.353	108.008	61.806	33.687	10.443	2.291	5.211	10.000
ALLOX	1.688	2.653	3.297	3.081	1.391	0.528	0.353	25.000
DIATOX	19.903	15.927	5.541	3.009	0.440	1.476	0.635	2.000
ZEAXANTH	2.977	2.117	1.565	1.185	0.593	0.000	0.157	10.000
CANTHAX	0.626	0.336	0.352	0.306	0.000	0.000	0.026	2.000
u23	0.885	0.916	0.423	0.000	0.000	0.000	0.024	10.000
CHLORO B	0.000	1.104	3.612	15.180	21.916	0.000	2.298	100.000
u26	1.028	1.337	1.344	1.409	1.175	0.000	0.189	50.000
CHL ALLO	1.580	3.220	1.265	3.716	2.550	0.000	0.402	50.000
CHLORO A	395.223	491.169	392.839	350.509	193.816	26.049	44.859	10.000
CHL EPIM	2.912	2.026	0.683	2.805	0.000	0.000	0.160	2.000
UNKNOWN4	0.000	0.000	0.599	0.000	0.000	0.000	0.012	25.000
PHYTINX	0.000	0.000	0.000	2.446	1.288	0.000	0.188	50.000
PHYTIN B	0.000	0.000	0.000	0.000	1.179	0.000	0.088	100.000
PHYTIN A	3.033	3.492	3.525	4.580	2.897	1.169	0.576	50.000
CHLA TOT	429.375	519.394	402.778	382.016	198.757	47.510	48.213	10.000
% DEGRAD	1.722	1.653	1.341	15.776	3.279	2.401	1.014	50.000
PIGM TOT	945.655	1133.642	824.007	943.787	391.615	65.536	103.231	10.000

STATION: 50  
 LATITUDE: 65 17.25

DATE: 210185  
 LONGITUDE: 83 2.3E

GMT: 0412  
 SAMPLES: 6

SAMPLE	253	254	255	256	257	258	INTEG	DEPTH
DEPTH (m)	2.0	10.0	25.0	50.0	100.0	200.0	100m	OF MAX
							mg/m2	CONC
PIGMENT CONCENTRATION (ng/l)								
CHLIDE A	0.000	0.000	4.399	0.000	0.000	3.944	0.297	25.000
CHLORO C	12.263	0.000	19.592	0.000	9.586	0.000	1.184	25.000
MCHLIDE	5.322	9.399	1.260	2.662	0.000	0.000	0.265	10.000
PHORB A1	0.000	0.000	2.250	2.422	0.000	0.000	0.136	50.000
PERIDIN	3.807	2.024	0.782	2.159	0.000	0.000	0.143	2.000
FUCOX-X	4.332	3.992	7.133	4.654	7.955	7.751	1.373	100.000
FUCOX	64.482	72.033	59.156	66.887	28.522	28.525	8.472	10.000
HEXFUCOX	31.360	49.645	41.556	41.433	32.139	30.821	7.095	10.000
NEOXANTH	0.000	0.923	0.957	1.187	0.000	0.000	0.074	50.000
PRASINIX	2.359	2.000	2.667	4.170	0.633	1.110	0.350	50.000
VIOLAX	1.945	1.961	2.577	3.067	1.170	0.754	0.326	50.000
DIADINOX	31.533	35.269	8.502	11.233	3.607	5.260	1.720	10.000
ALLOX	3.827	2.490	2.127	2.073	1.041	0.850	0.292	2.000
DIATOX	6.230	5.008	1.392	1.572	1.270	0.000	0.277	2.000
ZEAXANTH	2.903	1.765	1.132	1.116	0.549	0.475	0.167	2.000
CANTHAX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
u23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORO B	18.638	13.217	22.917	23.040	8.754	9.782	2.732	50.000
u26	1.031	1.131	1.180	0.887	0.893	0.884	0.187	25.000
CHL ALLO	1.346	2.401	1.721	0.000	1.276	0.000	0.166	10.000
CHLORO A	195.212	195.592	156.182	189.374	82.167	95.340	24.460	2.000
CHL EPIM	0.000	8.896	0.000	0.653	0.000	0.000	0.127	10.000
UNKNOWN4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTINX	1.347	2.073	0.956	0.000	0.000	1.150	0.109	10.000
PHYTIN B	0.466	0.000	0.000	0.000	0.000	0.000	0.003	2.000
PHYTIN A	1.695	1.609	2.758	0.000	0.000	1.339	0.151	25.000
CHLA TOT	200.534	194.991	162.440	192.036	82.167	99.283	25.022	2.000
% DEGRAD	2.142	7.134	4.519	1.576	1.529	2.445	0.481	10.000
PIGM TOT	390.098	401.429	341.799	358.590	179.561	187.983	50.106	10.000

STATION: 56  
 LATITUDE: 60 0.15

DATE: 230185  
 LONGITUDE: 82 58.9E

GMT: 0133  
 SAMPLES: 6

SAMPLE	285	286	287	288	289	290	INTEG	DEPTH
DEPTH (m)	3.9	10.0	25.0	50.0	100.0	200.0	100m mg/m2	OF MAX CQNC
PIGMENT CONCENTRATION (ng/l)								
CHLIDE A	4.527	1.761	0.000	0.000	2.535	6.941	0.587	200.000
CHLORO C	4.614	0.972	11.918	2.099	53.395	5.278	4.628	100.000
MCHLIDE	4.791	0.000	7.300	0.000	10.273	0.000	0.950	100.000
PHORB A1	0.000	0.000	2.699	0.000	3.073	0.000	0.284	100.000
PERIDIN	12.478	4.781	8.549	1.661	10.110	0.000	1.129	3.900
FUCOX-X	1.590	0.581	2.630	0.000	3.121	2.967	0.452	100.000
FUCOX	70.738	32.515	126.652	23.330	141.558	51.570	17.438	100.000
HEXFUCOX	36.849	17.383	81.897	12.143	81.014	49.442	11.081	25.000
NEOXANTH	0.000	0.000	0.727	0.000	0.828	0.000	0.077	100.000
PRASINOX	0.000	0.000	0.000	0.000	0.000	0.264	0.013	200.000
VIOLAX	1.335	0.416	0.764	0.000	0.651	0.436	0.100	3.900
DIADINOX	29.194	13.001	31.493	0.465	29.352	7.675	3.573	25.000
ALLOX	1.913	1.066	2.567	1.318	3.540	0.915	0.437	100.000
DIATOX	4.087	2.217	5.189	2.011	5.267	0.000	0.626	100.000
ZEAXANTH	0.857	0.466	0.769	0.000	0.694	0.000	0.078	3.900
CANTHAX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
u23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORO B	0.000	0.000	0.000	0.000	0.000	1.755	0.088	200.000
u26	1.535	0.333	0.587	0.000	1.944	1.399	0.244	100.000
CHL ALLO	0.000	0.000	0.000	0.000	1.566	0.640	0.149	100.000
CHLORO A	165.421	61.927	233.966	22.602	243.853	100.958	30.667	100.000
CHL EPIM	0.000	0.000	0.784	0.000	0.000	0.000	0.016	25.000
UNKNQWN4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	2.044	0.000	0.000	0.000	2.775	1.384	0.292	100.000
CHLA TOT	174.739	63.687	241.266	22.602	256.661	107.900	32.204	100.000
% DEGRAD	1.156	0.000	1.423	0.000	2.807	1.842	0.339	100.000
PIGM TOT	341.972	137.419	518.590	65.629	595.546	231.626	72.907	100.000

STATION: 51  
 LATITUDE: 64 59.75

DATE: 210185  
 LONGITUDE: 83 0.1E

GMT: 0735  
 SAMPLES: 5

SAMPLE	259	260	261	262	263	INTEG	DEPTH
DEPTH (m)	2.0	10.0	50.0	100.0	200.0	100m mg/m2	OF MAX CONC
PIGMENT CONCENTRATION (ng/l)							
CHLIDE A	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORO C	5.199	19.026	0.675	0.000	1.174	0.577	10.000
MCHLIDE	3.025	5.876	0.000	0.000	6.516	0.485	200.000
PHORB A1	0.000	0.000	2.233	0.000	0.000	0.100	50.000
PERIDIN	2.224	1.640	0.000	0.000	0.000	0.053	2.000
FUCOX-X	1.272	3.663	5.589	1.487	0.971	0.507	50.000
FUCOX	36.745	86.044	30.022	6.948	37.989	6.057	10.000
HEXFUCOX	35.247	68.166	22.965	4.396	5.789	3.436	10.000
NEOXANTH	0.362	0.568	0.000	0.000	0.000	0.016	10.000
PRASINDX	0.000	1.151	0.326	0.000	0.472	0.066	10.000
VIDLAX	0.530	0.993	0.585	0.000	0.423	0.075	10.000
DIADINDX	19.741	18.211	3.138	0.964	5.008	1.019	2.000
ALLOX	1.409	1.797	0.824	0.000	0.345	0.106	10.000
DIATOX	6.407	2.612	0.000	0.564	0.859	0.186	2.000
ZEAXANTH	1.201	1.049	0.000	0.000	0.000	0.032	2.000
CANTHAX	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
u23	0.000	0.000	0.000	0.000	0.458	0.023	200.000
CHLORO B	0.000	6.727	7.575	0.000	1.635	0.584	50.000
u26	0.000	0.820	0.613	0.000	0.000	0.047	10.000
CHL ALLO	0.000	0.000	0.633	0.000	0.000	0.028	50.000
CHLORO A	98.383	175.234	68.586	34.040	55.463	13.208	10.000
CHL EPIM	0.000	0.000	0.000	0.000	1.230	0.062	200.000
UNKNOWN4	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	0.968	2.044	1.752	0.000	0.000	0.134	10.000
CHLA TOT	101.409	181.110	68.586	34.040	61.980	13.693	10.000
% DEGRAD	0.946	1.116	6.309	0.000	1.946	0.414	50.000
PIGM TOT	212.714	395.619	145.423	48.400	118.331	26.862	10.000

STATION: 52  
 LATITUDE: 63 59.95

DATE: 210185  
 LONGITUDE: 83 0.3E

GMT: 1757  
 SAMPLES: 5

SAMPLE	264	265	266	267	268	INTEG	DEPTH
DEPTH (m)	2.0	10.0	25.0	50.0	100.0	100m mg/m2	OF MAX CONC
PIGMENT CONCENTRATION (ng/l)							
CHLIDE A	2.405	0.000	0.000	0.000	0.000	0.014	2.000
CHLORO C	4.914	10.655	35.795	23.301	54.395	3.102	100.000
MCHLIDE	6.699	2.210	1.132	1.240	3.160	0.214	2.000
PHORB A1	0.000	0.000	0.000	1.529	5.249	0.189	100.000
PERIDIN	3.772	3.757	2.285	0.799	2.131	0.195	2.000
FUCOX-X	1.065	0.899	2.915	7.027	18.600	0.804	100.000
FUCOX	39.014	38.115	77.573	65.165	120.140	7.671	100.000
HEXFUCOX	33.972	39.960	65.520	37.177	70.768	5.167	100.000
NEOXANTH	0.298	0.400	0.534	0.358	0.830	0.051	100.000
PRASINOX	0.000	0.000	0.000	2.144	3.990	0.180	100.000
VIOLAX	0.689	0.414	0.494	0.586	2.223	0.096	100.000
DIADINDX	25.220	21.022	22.002	9.194	13.705	1.521	2.000
ALLOX	1.588	1.416	2.321	0.778	3.043	0.177	100.000
DIATOX	1.738	2.128	2.247	0.598	1.145	0.131	25.000
ZEAXANTH	1.335	1.331	0.991	0.885	1.406	0.111	100.000
CANTHAX	0.280	0.000	0.000	0.000	0.000	0.002	2.000
U23	0.290	0.302	0.000	0.303	0.000	0.017	50.000
CHLORO B	0.000	0.000	0.000	14.539	25.631	1.186	100.000
U26	0.459	0.514	0.674	0.928	1.067	0.084	100.000
CHL ALLO	0.000	0.000	0.000	0.963	1.581	0.076	100.000
CHLORO A	105.004	104.151	165.486	154.150	276.770	17.837	100.000
CHL EPIM	1.043	0.000	0.686	2.124	1.461	0.136	50.000
UNKNOWN4	0.479	0.354	0.000	0.000	0.000	0.007	2.000
PHYTINX	0.000	0.000	0.000	1.677	2.855	0.134	100.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	3.759	0.837	1.086	2.995	5.550	0.305	100.000
CHLA TOT	114.108	106.361	166.619	155.390	279.930	18.066	100.000
% DEGRAD	4.039	0.781	1.052	5.640	5.629	0.406	50.000
PIGM TOT	239.025	228.485	381.749	328.459	615.701	39.406	100.000



STATION: 53  
 LATITUDE: 62 59.95

DATE: 220185  
 LONGITUDE: 83 0.2E

GMT: 0023  
 SAMPLES: 6

SAMPLE DEPTH (m)	269 2.0	270 10.0	271 25.0	272 50.0	273 100.0	274 200.0	INTEG 100m mg/m2	DEPTH OF MAX CONC
PIGMENT CONCENTRATION (ng/l)								
CHLIDE A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORO C	3.018	4.741	4.499	0.000	2.055	0.000	0.317	10.000
MCHLIDE	4.074	1.179	0.000	0.000	0.000	0.000	0.038	2.000
PHORB A1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PERIDIN	1.735	2.298	5.176	0.000	0.000	0.000	0.140	25.000
FUCOX-X	1.340	1.707	0.000	0.000	0.477	0.000	0.063	10.000
FUCOX	29.076	30.219	32.422	9.432	11.773	9.671	2.885	25.000
HEXFUCOX	41.675	42.061	49.487	10.967	2.927	4.810	2.595	25.000
NEOXANTH	0.000	0.000	0.282	0.000	0.000	0.000	0.006	25.000
PRASINOX	0.000	0.215	0.000	0.000	0.000	0.000	0.002	10.000
VIOLAX	0.000	0.309	0.380	0.000	0.000	0.000	0.011	25.000
DIADINJX	12.392	9.023	15.652	3.653	2.271	1.174	0.857	25.000
ALLOX	1.423	1.336	1.531	0.000	0.000	0.000	0.055	25.000
DIATOX	1.323	1.808	1.230	0.000	0.763	0.000	0.111	10.000
ZEAXANTH	0.730	0.918	0.748	0.000	0.000	0.000	0.030	10.000
CANTHAX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
u23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORD B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
u26	0.972	0.000	0.000	0.000	0.650	0.000	0.055	2.000
CHL ALLO	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORO A	67.867	85.864	89.767	20.891	20.256	15.717	6.278	25.000
CHL EPIM	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
UNKNOWN4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLA TOT	71.941	87.042	89.767	20.891	20.256	15.717	6.316	25.000
% DEGRAD	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PIGM TOT	164.624	181.677	201.175	44.943	41.171	31.372	13.442	25.000

STATION: 54  
 LATITUDE: 61 59.35

DATE: 220185  
 LONGITUDE: 83 0.2E

GMT: 1323  
 SAMPLES: 5

SAMPLE	275	276	277	278	279	INTEG	DEPTH
DEPTH (m)	1.5	10.0	25.0	50.0	100.0	100m mg/m2	OF MAX CONC
	PIGMENT CONCENTRATION (ng/l)						
CHLIDE A	0.000	0.000	4.294	0.000	0.000	0.086	25.000
CHLORO C	8.159	9.894	11.380	0.000	0.000	0.391	25.000
MCHLIDE	0.000	3.235	3.151	0.000	0.000	0.101	10.000
PHURS A1	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PERIDIN	2.387	3.214	1.944	0.000	0.000	0.090	10.000
FUCOX-X	1.583	1.881	1.757	0.000	0.000	0.067	10.000
FUCOX	60.373	59.027	43.058	2.766	4.115	2.226	10.000
HEXFUCOX	72.667	70.258	55.056	1.310	2.381	2.453	1.500
NEOXANTH	0.000	0.000	0.461	0.000	0.000	0.009	25.000
PRASINX	0.528	0.000	0.000	0.000	0.000	0.003	1.500
VIOLAX	0.000	0.000	0.316	0.000	0.000	0.006	25.000
DIADINOX	24.922	21.613	18.847	0.704	2.213	0.856	1.500
ALLOX	2.742	2.560	2.149	0.000	0.000	0.089	1.500
DIATOX	2.153	1.777	1.105	0.000	0.000	0.055	1.500
ZEAXANTH	1.012	0.916	0.654	0.000	0.000	0.030	1.500
CANTHAX	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
u23	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORO B	1.876	0.000	1.448	0.000	0.000	0.040	1.500
u26	1.737	0.000	0.649	0.000	0.000	0.023	1.500
CHL ALLO	0.000	0.000	0.882	0.000	0.000	0.018	25.000
CHLORO A	141.462	136.175	107.860	9.241	6.690	5.084	1.500
CHL EPIM	0.000	1.302	0.000	0.000	0.000	0.015	10.000
UNKNOWN4	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	0.000	0.000	0.668	0.000	0.000	0.013	25.000
CHLA TOT	141.462	139.409	115.305	9.241	6.690	5.271	1.500
% DEGRAD	0.000	0.925	1.327	0.000	0.000	0.037	25.000
PIGM TOT	321.710	321.852	255.677	14.021	15.399	11.656	10.000

STATION: 55  
 LATITUDE: 60 59.85

DATE: 220185  
 LONGITUDE: 83 0.0E

GMT: 1917  
 SAMPLES: 5

SAMPLE	280	281	282	283	284	INTEG	DEPTH
DEPTH (m)	1.5	10.0	23.0	50.0	100.0	100m mg/m2	OF MAX CONC
PIGMENT CONCENTRATION (ng/l)							
CHLIDE A	6.692	0.000	0.000	0.000	0.000	0.038	1.500
CHLORO C	57.317	82.224	59.591	0.000	4.221	2.514	10.000
MCHLIDE	12.828	13.586	12.756	1.208	0.000	0.521	10.000
PHORB A1	5.319	4.623	4.606	0.000	0.000	0.172	1.500
PERIDIN	9.316	9.311	8.125	1.413	0.000	0.371	1.500
FUCOX-X	3.922	3.991	3.169	0.000	0.000	0.129	10.000
FUCOX	222.570	215.348	193.570	6.770	0.808	7.747	1.500
HEXFUCOX	64.843	64.249	64.609	1.411	0.543	2.424	1.500
NEOXANTH	1.116	0.703	0.361	0.000	0.000	0.021	1.500
PRASINOX	0.976	0.000	0.000	0.000	0.000	0.006	1.500
VIOLAX	0.624	0.950	0.717	0.000	0.000	0.028	10.000
DIADINOX	43.837	43.519	35.569	0.000	0.000	1.431	1.500
ALLOX	2.700	2.697	2.090	0.000	0.000	0.086	1.500
DIATOX	1.775	2.780	2.447	0.000	0.000	0.099	10.000
ZEAXANTH	1.347	1.972	1.181	0.000	0.000	0.053	10.000
CANTHAX	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
u23	0.384	0.747	0.000	0.000	0.000	0.010	10.000
CHLORO B	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
u26	0.772	0.756	0.708	0.000	0.000	0.027	1.500
CHL ALLO	0.000	2.835	0.000	0.000	0.000	0.030	10.000
CHLORO A	352.327	342.806	319.619	9.340	0.834	12.484	1.500
CHL EPIM	1.036	1.595	1.109	0.000	0.000	0.045	10.000
UNKNOWN4	0.000	0.538	0.000	0.000	0.000	0.006	10.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	4.366	5.079	3.687	0.000	0.000	0.153	10.000
CHLA TOT	371.847	356.392	332.375	10.549	0.834	13.044	1.500
% DEGRAD	2.302	3.814	2.751	0.000	0.000	0.112	10.000
PIGM TOT	794.668	800.321	713.913	20.143	6.406	28.387	10.000

STATION: 57  
LATITUDE: 60 0.1S

DATE: 230185  
LONGITUDE: 88 0.3E

GMT: 1620  
SAMPLES: 4

SAMPLE DEPTH (m)	291 2.3	292 10.0	293 25.0	294 50.0	INTEG 100m mg/m2	DEPTH OF MAX CONC
PIGMENT CONCENTRATION (ng/l)						
CHLIDE A	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORD C	4.539	1.982	8.075	1.101	0.226	25.000
MCHLIDE	2.067	0.000	5.303	2.730	0.153	25.000
PHORB A1	0.000	0.000	1.288	0.000	0.026	25.000
PERIDIN	0.000	1.408	2.671	1.942	0.094	25.000
FUCOX-X	2.109	1.863	2.492	1.955	0.108	25.000
FUCOX	33.650	21.343	36.746	21.571	1.454	25.000
HEXFUCOX	26.588	19.790	28.651	18.975	1.198	25.000
NEOXANTH	0.000	0.000	0.000	0.000	0.000	-1.000
PRASINIX	0.000	0.000	0.000	0.000	0.000	-1.000
VIOLAX	0.000	0.000	0.237	0.000	0.005	25.000
DIADINIX	12.640	9.123	10.878	9.122	0.513	2.300
ALLOX	1.068	0.653	1.374	0.907	0.053	25.000
DIATIX	1.093	0.767	1.214	0.887	0.051	25.000
ZEAXANTH	0.961	0.380	0.503	0.723	0.029	2.300
CANTHAX	0.000	0.000	0.000	0.368	0.005	50.000
u23	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORD B	0.000	0.000	0.000	2.229	0.028	50.000
u25	1.762	0.574	0.000	0.382	0.022	2.300
CHL ALLO	0.000	0.000	0.714	1.589	0.034	50.000
CHLORD A	62.059	46.891	67.444	49.030	2.876	25.000
CHL EPIM	0.000	0.000	0.740	1.764	0.037	50.000
UNKNOWN4	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	0.000	0.000	2.590	1.147	0.066	25.000
CHLA TOT	64.126	46.891	72.747	51.760	3.029	25.000
% DEGRAD	0.000	0.000	6.829	7.999	0.237	50.000
PIGM TOT	148.538	104.785	170.920	116.422	6.976	25.000

STATION: 53  
 LATITUDE: 60 59.8S

DATE: 230185  
 LONGITUDE: 88 0.4E

GMT: 2359  
 SAMPLES: 5

SAMPLE	295	296	297	298	299	INTEG	DEPTH
DEPTH (m)	3.2	10.0	25.0	50.0	101.4	100m mg/m2	OF MAX CONC
PIGMENT CONCENTRATION (ng/l)							
CHLIDE A	0.000	0.000	7.055	23.168	6.564	1.195	50.000
CHLORO C	0.327	43.859	68.989	23.121	36.010	3.669	25.000
MCHLIDE	8.268	15.249	22.393	11.571	7.349	1.300	25.000
PHORB A1	0.000	40.439	5.133	0.000	9.629	0.791	10.000
PERIDIN	3.620	90.963	7.584	5.050	0.000	1.360	10.000
FUCOX-X	1.416	5.100	3.070	2.634	6.695	0.399	101.400
FUCOX	103.720	387.829	194.750	121.970	123.249	16.634	10.000
HEXFUCOX	46.236	44.021	68.237	44.112	33.550	4.697	25.000
NEOXANTH	0.000	23.445	0.884	0.000	0.000	0.273	10.000
PRASINIX	0.000	0.642	0.000	0.000	0.000	0.007	10.000
VIOLAX	0.000	20.068	0.434	0.000	1.496	0.266	10.000
DIADINOX	40.241	175.652	34.988	34.673	11.969	4.512	10.000
ALLOX	1.431	1.799	2.336	2.073	1.373	0.190	25.000
OIATOX	3.154	19.748	4.260	7.583	1.444	0.648	10.000
ZEAXANTH	0.000	14.350	0.645	0.937	0.000	0.205	10.000
CANTHAX	0.000	0.625	0.453	0.000	0.000	0.016	10.000
u23	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORO B	0.000	86.296	0.000	0.000	6.389	1.105	10.000
u26	1.178	6.308	1.170	0.000	0.000	0.100	10.000
CHL ALLO	0.000	571.628	1.422	0.000	0.000	6.259	10.000
CHLORO A	183.611	911.672	288.106	197.249	194.607	29.447	10.000
CHL EPIM	0.000	15.004	0.738	0.000	0.000	0.178	10.000
UNKNOWN4	0.000	3.018	0.000	0.000	0.000	0.033	10.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	2.335	0.000	0.000	0.000	0.025	10.000
PHYTIN A	1.886	64.293	3.392	0.000	5.278	0.917	10.000
CHLA TOT	191.879	926.921	317.554	231.988	208.520	31.942	10.000
% DEGRAD	0.973	42.722	3.257	0.000	6.672	0.709	10.000
PIGM TOT	395.087	2544.344	716.044	474.141	445.602	74.226	10.000

STATION: 59  
 LATITUDE: 62 0.4S

DATE: 240185  
 LONGITUDE: 87 59.8E

GMT: 0607  
 SAMPLES: 6

SAMPLE DEPTH (m)	300 2.3	301 10.0	302 25.0	303 50.0	304 100.0	305 200.0	INTEG 100m mg/m2	DEPTH OF MAX CONC
	PIGMENT CONCENTRATION (ng/l)							
CHLIDE A	0.000	2.641	0.000	0.000	0.000	0.000	0.030	10.000
CHLORO C	2.162	21.719	36.726	0.000	3.870	0.000	1.285	25.000
MCHLIDE	14.884	15.746	11.281	0.000	0.000	0.000	0.496	10.000
PHORB A1	0.000	0.000	5.794	4.974	3.786	2.794	0.726	25.000
PERIDIN	0.000	0.000	4.625	0.000	0.000	0.000	0.093	25.000
FUCOX-X	2.367	3.716	3.374	9.454	5.234	6.056	1.174	50.000
FUCOX	65.217	117.460	95.416	76.944	33.679	30.669	10.587	10.000
HEXFUCOX	43.387	77.048	63.155	28.982	14.529	13.812	5.302	10.000
NEOXANTH	0.000	0.670	0.000	0.000	0.000	0.000	0.008	10.000
PRASINOX	0.000	0.802	1.210	3.283	1.395	1.047	0.313	50.000
VIOLAX	0.000	0.677	0.000	0.838	0.000	1.018	0.090	200.000
DIADINOX	29.404	20.231	32.380	5.704	3.533	0.166	1.546	25.000
ALLOX	3.239	2.307	2.604	1.783	1.119	0.000	0.249	2.300
DIATOX	4.837	2.939	4.500	0.000	0.000	0.000	0.153	2.300
ZEAXANTH	0.349	0.995	1.136	0.000	0.000	0.000	0.039	25.000
CANTHAX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
u23	0.300	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORO B	2.595	8.958	3.872	18.835	3.883	5.763	1.856	50.000
u26	0.000	1.685	1.343	2.291	1.533	1.922	0.343	50.000
CHL ALLO	0.000	0.000	0.000	0.000	0.332	0.000	0.062	100.000
CHLORO A	168.538	221.453	194.942	153.311	62.397	82.789	22.017	10.000
CHL EPIM	0.300	0.000	0.000	0.000	1.437	0.000	0.108	100.000
UNKNOWN4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTINX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	2.842	1.963	0.000	2.599	1.222	1.703	0.314	2.300
CHLA TOT	183.422	239.840	206.223	153.311	62.397	92.789	22.543	10.000
% DEGRAD	1.525	0.812	2.733	4.707	10.445	5.152	1.291	100.000
PIGM TOT	345.320	501.010	462.356	308.999	143.454	147.739	46.791	10.000

STATION: 60  
 LATITUDE: 62 59.9S

DATE: 240185  
 LONGITUDE: 87 59.8E

GMT: 1212  
 SAMPLES: 5

SAMPLE DEPTH (m)	306	307	308	309	310	INTEG 100m mg/m2	DEPTH OF MAX CONC
PIGMENT CONCENTRATION (ng/l)							
CHLIDE A	47.156	5.432	0.000	11.119	0.000	0.769	2.300
CHLORO C	9.183	5.476	27.899	16.413	0.000	1.292	25.000
MCHLIDE	7.841	12.422	5.271	0.000	0.000	0.295	10.000
PHORB A1	0.000	0.000	59.393	0.000	0.000	1.188	25.000
PERIDIN	2.241	3.466	1.379	0.000	0.000	0.091	10.000
FUCOX-X	4.550	4.110	5.082	8.167	0.000	0.483	50.000
FUCOX	95.563	72.297	93.076	50.716	2.022	5.222	2.300
HEXFUCOX	74.299	56.459	73.856	28.756	0.000	3.653	2.300
NEOXANTH	0.000	0.000	0.558	0.000	0.000	0.011	25.000
PRASINOX	0.865	0.000	0.000	1.821	0.000	0.074	50.000
VIOLAX	0.576	0.000	0.677	2.175	0.000	0.099	50.000
DIADINOX	30.091	30.961	32.547	2.662	0.000	1.287	25.000
ALLOX	2.424	2.087	3.817	0.000	0.000	0.115	25.000
DIATOX	3.365	4.023	3.625	0.000	0.000	0.139	10.000
ZEAXANTH	1.263	1.094	2.794	0.000	0.000	0.076	25.000
CANTHAX	0.000	0.000	0.377	2.750	0.000	0.111	50.000
u23	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORO B	2.323	0.000	2.366	43.387	0.000	1.639	50.000
u26	0.000	0.000	0.579	0.525	0.000	0.031	25.000
CHL ALLO	0.000	2.230	1.142	0.000	0.000	0.048	10.000
CHLORO A	247.360	164.037	179.172	169.130	47.316	14.492	2.300
CHL EPIM	0.000	1.799	0.000	0.000	0.000	0.020	10.000
UNKNOW4	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTINX	0.000	0.000	0.000	4.919	0.000	0.194	50.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	0.000	1.841	0.943	2.985	0.000	0.152	50.000
CHLA TOT	302.357	181.891	184.443	180.249	47.316	15.555	2.300
% DEGRAD	0.000	3.127	24.999	4.201	0.000	0.693	25.000
PIGM TOT	529.100	367.735	494.551	345.525	49.338	31.509	2.300

STATION: 61  
 LATITUDE: 64 0.0S

DATE: 240185  
 LONGITUDE: 88 0.0E

GMT: 2009  
 SAMPLES: 5

SAMPLE DEPTH (m)	311	312	313	314	315	INTEG 100m mg/m2	DEPTH OF MAX CONC
PIGMENT CONCENTRATION (ng/l)							
CHLIDE A	0.000	2.767	0.000	8.488	0.000	0.351	50.000
CHLORO C	0.000	29.430	26.457	42.352	0.000	2.460	50.000
MCHLIDE	16.047	12.090	12.541	4.977	0.000	0.672	1.700
PHORB A1	0.000	0.000	0.000	4.030	0.000	0.151	50.000
PERIDIN	11.277	5.621	5.160	3.237	0.000	0.356	1.700
FUCOX-X	6.271	5.839	5.688	18.247	0.000	0.903	50.000
FUCOX	106.616	120.142	112.963	94.138	7.671	8.005	10.000
HEXFUCOX	67.972	58.081	57.116	65.160	3.021	4.736	1.700
NEOXANTH	0.000	0.461	0.000	0.980	0.000	0.042	50.000
PRASINOX	0.000	0.377	0.000	13.366	0.000	0.506	50.000
VIOLAX	0.000	1.121	0.000	6.929	0.000	0.273	50.000
DIADINOX	47.530	35.194	31.806	10.707	0.585	1.740	1.700
ALLOX	2.466	2.224	2.233	2.194	0.000	0.167	1.700
DIATDX	7.013	4.529	3.621	1.069	0.000	0.206	1.700
ZEAXANTH	1.968	2.025	1.612	1.988	0.000	0.142	10.000
CANTHAX	0.000	0.570	0.000	0.000	0.000	0.007	10.000
u23	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORO B	5.249	3.786	3.795	58.837	0.000	2.357	50.000
u25	0.000	0.808	0.000	1.104	0.000	0.051	50.000
CHL ALLO	5.623	0.000	0.000	0.000	0.000	0.033	1.700
CHLORO A	313.477	279.474	262.163	284.868	54.784	22.385	1.700
CHL EPIM	0.000	2.429	0.000	0.000	0.000	0.028	10.000
UNKNOWN4	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTINX	0.000	0.000	0.000	9.732	0.000	0.365	50.000
PHYTIN B	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTIN A	2.739	2.578	3.316	2.707	0.000	0.214	25.000
CHLA TOT	329.524	294.331	274.709	298.332	54.784	23.408	1.700
% DEGRAD	2.475	1.673	1.193	5.231	0.000	0.254	50.000
PIGM TOT	594.250	569.595	528.475	635.111	66.061	46.150	50.000



STATION: 62  
 LATITUDE: 64 58.15

DATE: 250185  
 LONGITUDE: 87 58.1E

GMT: 0211  
 SAMPLES: 2

SAMPLE	316	317	INTEG	DEPTH
DEPTH (m)	0.0	10.0	100m mg/m2	OF MAX CONC
PIGMENT CONCENTRATION (ng/l)				
CHLIDE A	0.000	0.000	0.000	-1.000
CHLORO C	0.000	0.000	0.000	-1.000
MCHLIDE	0.000	2.739	0.014	10.000
PHORB A1	0.000	0.000	0.000	-1.000
PERIDIN	0.000	2.245	0.011	10.000
FUCOX-X	1.056	1.294	0.012	10.000
FUCOX	4.229	27.308	0.158	10.000
HEXFUCOX	1.989	22.179	0.121	10.000
NEOXANTH	0.000	0.000	0.000	-1.000
PRASINX	0.000	0.277	0.001	10.000
VIOLAX	0.000	0.547	0.003	10.000
DIADINX	0.000	16.808	0.084	10.000
ALLOX	0.000	1.337	0.007	10.000
DIATOX	0.000	5.079	0.025	10.000
ZEAXANTH	0.000	0.998	0.005	10.000
CANTHAX	0.000	0.000	0.000	-1.000
u23	0.000	0.000	0.000	-1.000
CHLORO B	0.000	2.015	0.010	10.000
u26	0.000	0.642	0.003	10.000
CHL ALLO	0.000	0.000	0.000	-1.000
CHLORO A	45.519	104.720	0.752	10.000
CHL EPIM	0.000	0.000	0.000	-1.000
UNKNOWN4	0.000	0.000	0.000	-1.000
PHYTINX	0.000	0.000	0.000	-1.000
PHYTIN B	0.000	0.000	0.000	-1.000
PHYTIN A	0.000	1.067	0.005	10.000
CHLA TOT	45.519	107.459	0.765	10.000
% DEGRAD	0.000	0.984	0.005	10.000
PIGM TOT	52.393	189.257	1.211	10.000

54

STATION: 64  
 LATITUDE: 62 59.55

DATE: 260185  
 LONGITUDE: 93 0.7E

GMT: 0804  
 SAMPLES: 6

SAMPLE	320	321	322	324	325	325	INTEG	DEPTH
DEPTH (m)	10.0	25.0	50.0	100.0	200.0	200.0	100m mg/m2	OF MAX CONC
PIGMENT CONCENTRATION (ng/l)								
CHLIDE A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORO C	6.875	10.879	52.009	0.000	0.000	0.000	2.288	50.000
MCHLIDE	12.994	9.256	14.603	0.000	0.000	0.000	0.960	50.000
PHORB A1	4.194	0.000	0.000	0.000	0.000	0.000	0.073	10.000
PERIDIN	2.786	0.000	2.717	0.000	0.000	0.000	0.151	10.000
FUCOX-X	1.815	1.999	7.740	1.815	1.832	1.832	0.590	50.000
FUCOX	75.358	98.817	144.185	6.573	8.379	8.379	3.614	50.000
HEXFUCOX	22.345	36.575	37.475	3.648	3.518	3.518	2.986	50.000
NEOXANTH	0.000	0.000	1.840	0.000	0.000	0.000	0.069	50.000
PRASINOX	0.000	0.000	3.432	0.677	0.367	0.367	0.193	50.000
VIOLAX	0.908	0.000	1.866	0.566	0.000	0.000	0.128	50.000
DIADINOX	39.490	44.203	20.897	0.665	0.933	0.933	2.455	25.000
ALLOX	1.713	2.927	1.938	0.311	0.439	0.439	0.206	25.000
DIATOX	4.548	7.294	1.883	0.598	0.000	0.000	0.341	25.000
ZEAXANTH	0.807	3.993	1.898	0.000	0.000	0.000	0.165	25.000
CANTHAX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
u23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
CHLORO B	3.354	0.000	31.240	2.777	2.374	2.374	1.557	50.000
u26	1.774	0.000	0.970	0.639	0.617	0.617	0.142	10.000
CHL ALLO	0.000	0.000	2.387	0.000	0.000	0.000	0.090	50.000
CHLORO A	144.422	231.071	283.307	49.863	34.633	34.633	23.244	50.000
CHL EPIM	0.000	0.000	1.975	2.073	0.588	0.588	0.259	100.000
UNKNOWN4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
PHYTINX	0.000	0.000	4.019	0.000	0.000	0.000	0.151	50.000
PHYTIN B	1.684	0.000	0.000	0.000	0.000	0.000	0.029	10.000
PHYTIN A	1.867	0.000	3.285	0.000	0.000	0.000	0.156	50.000
CHLA TOT	157.415	240.327	297.910	49.863	34.633	34.633	24.204	50.000
% DEGRAD	3.708	0.000	3.768	3.992	1.670	1.670	0.589	100.000
PIGM TOT	327.433	447.020	619.567	70.206	53.681	53.681	45.854	50.000

PIGMENT CONTOUR LEVELS (ng/L)								
Linetype	Chlorophyll a	% Degradation	Fucoxanthin	Hexfucox	Fucox-x	Alloxanthin	Chlorophyll b	Prasincoxanthin
1	100	5	100	50	5	2	5	2
2	200	10	200	100	10	5	10	4
3	500	20	500	200	15	10	15	6
4	1000	30	1000	500	20	15	20	8
5	1500	40	1500	1000	30	20	40	10
6	2000	50	2000	1500	40	30	60	20
6	3000	60	3000	2000	50	40	80	30
6	4000	70	4000		60	50	100	40
6	5000	80	5000		70	60		50
6	6000	90	6000					
6	7000							
6	8000							
6	9000							

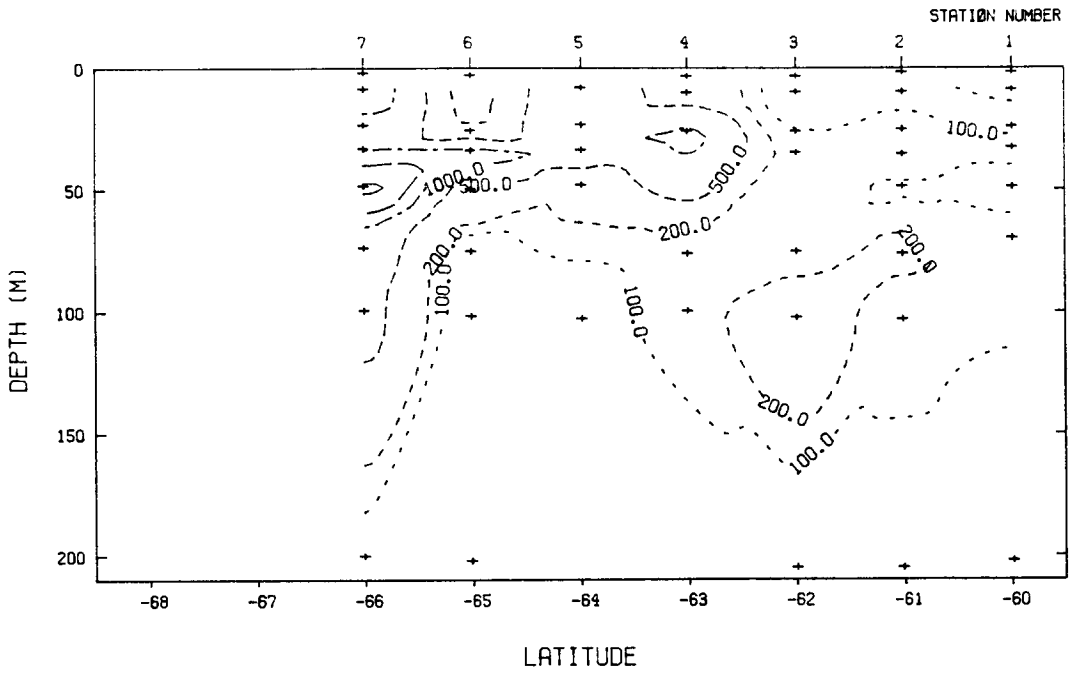
Above: Table 4. Contour levels used in Figure 3.

Opposite and following pages: Figure 3. Vertical distribution of marker pigments along north-south transects. Contour levels and linetypes vary according to the pigment, as shown in Table 4.

Linetype 1 - - - -  
 Linetype 2 - - - - -  
 Linetype 3 - - - - -  
 Linetype 4 - - - - -  
 Linetype 5 - - - - -  
 Linetype 6 - - - - -

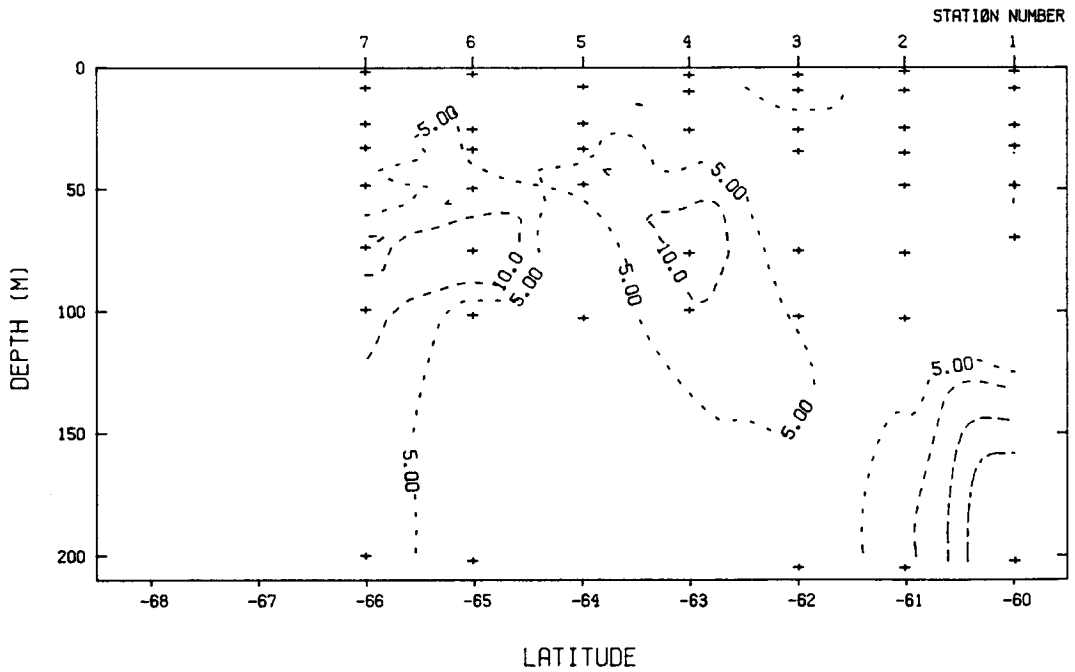
SIBEX2

CHLOROPHYLL A - 58 DEG EAST



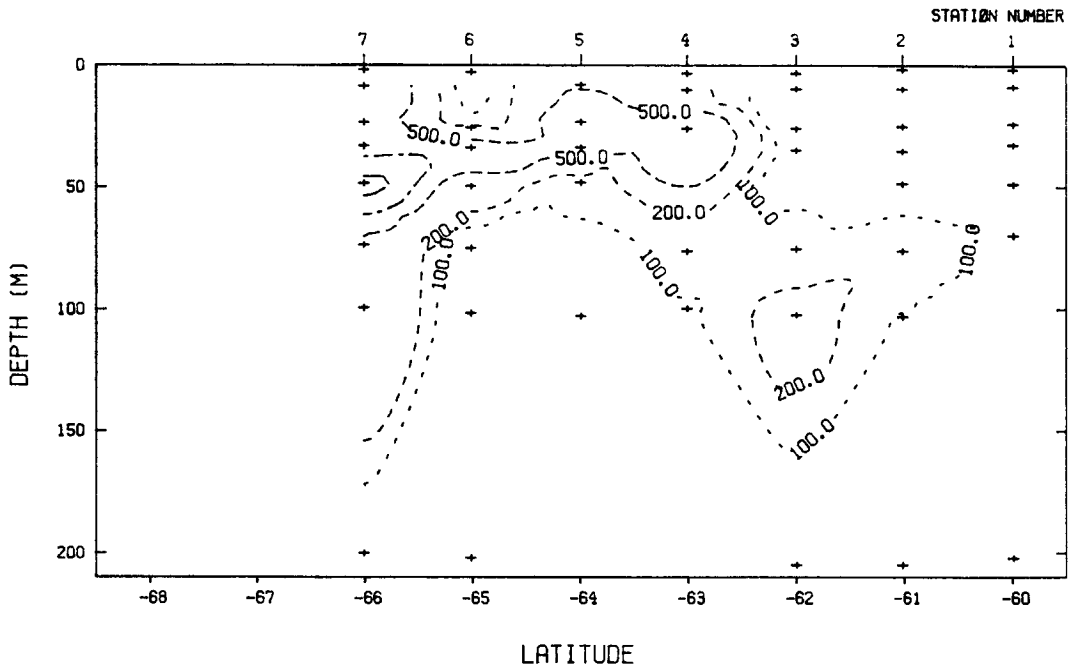
SIBEX2

%DEGRADATION - 58 DEG EAST



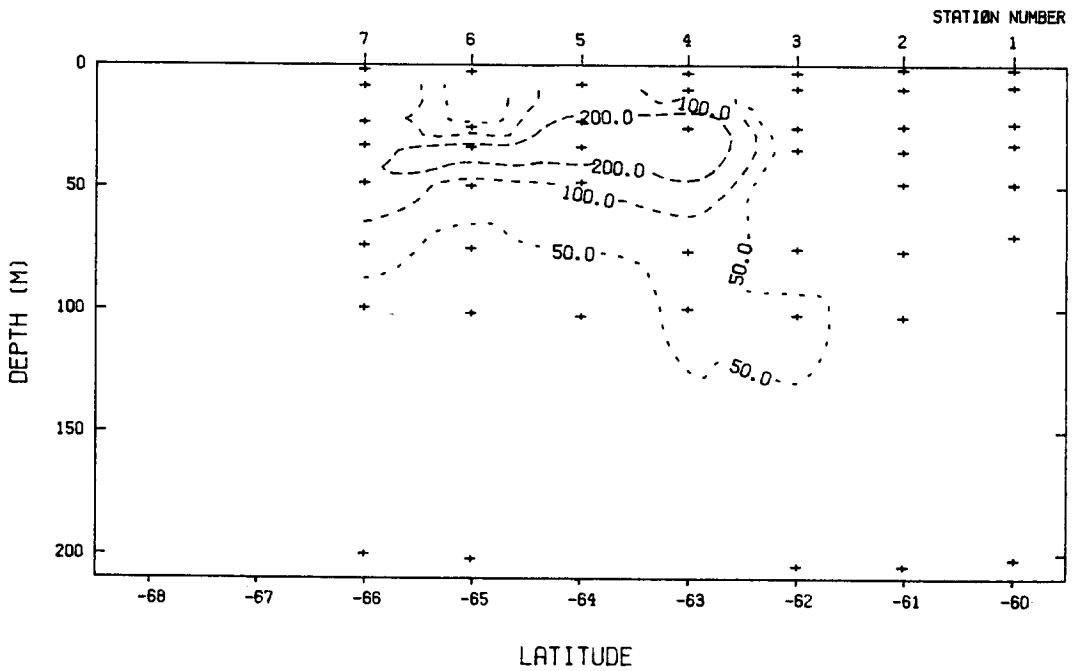
SIBEX2

FUCOXANTHIN - 58 DEG EAST



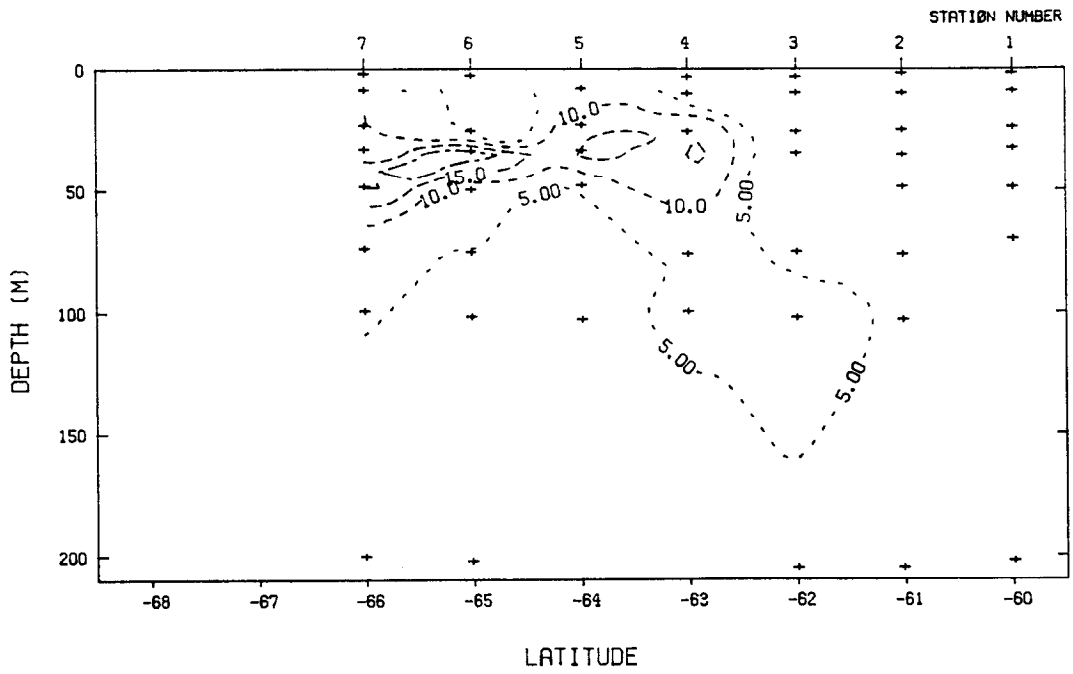
SIBEX2

19'-HEXANØYLØXYFUCOXANTHIN - 58 DEG EAST



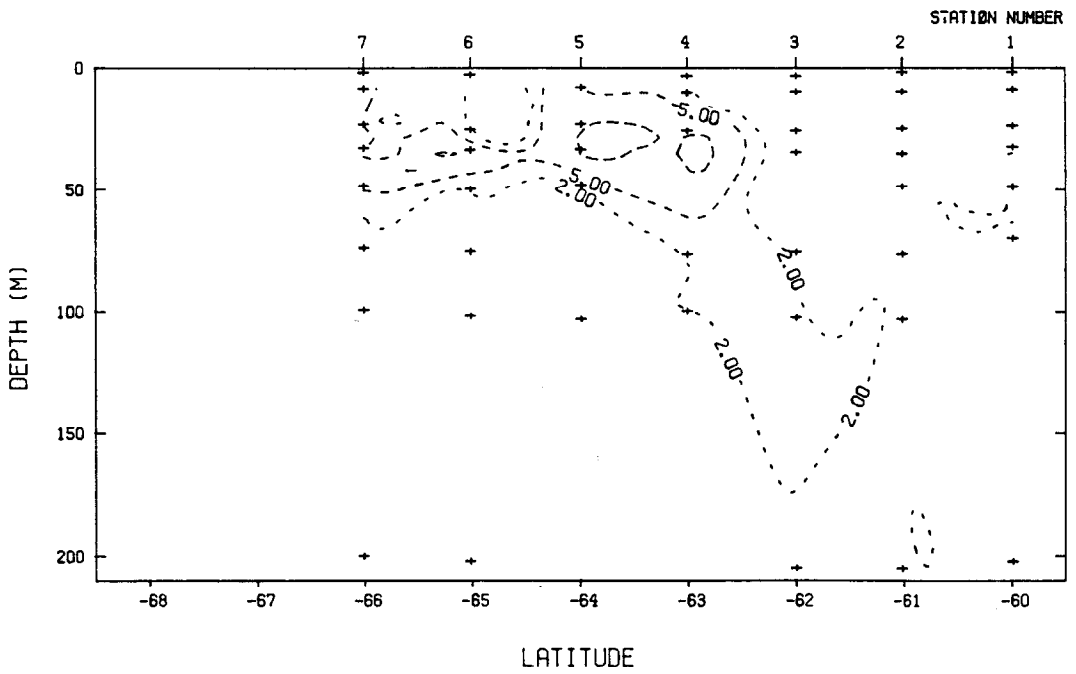
SIBEX2

FUCOX-X - 58 DEG EAST



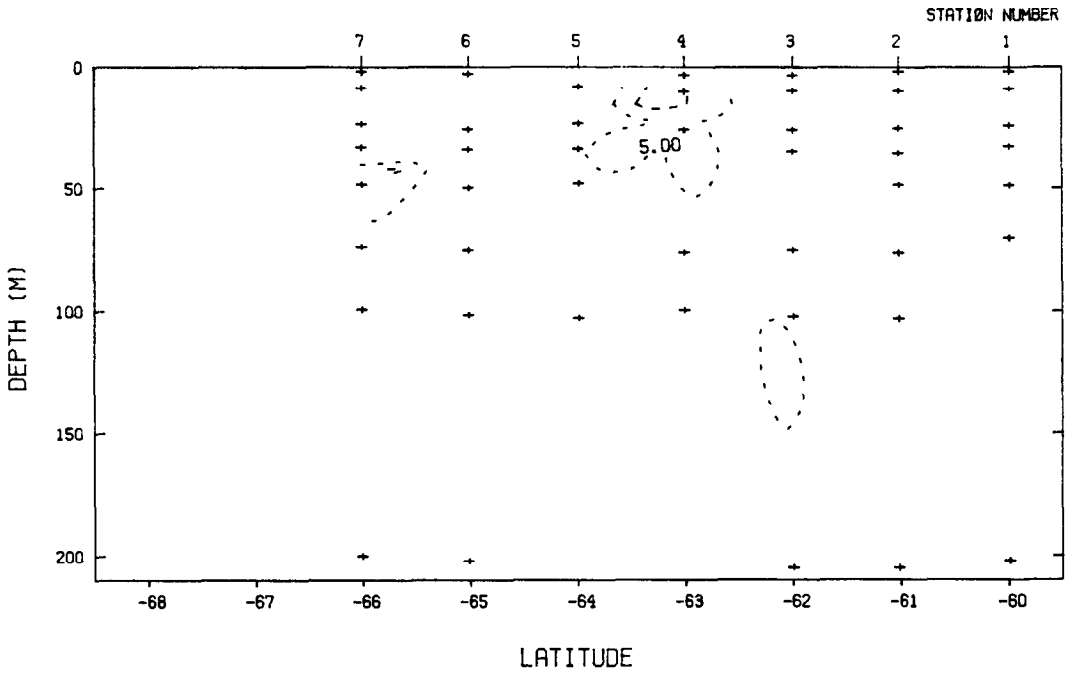
SIBEX2

ALLOXANTHIN - 58 DEG EAST



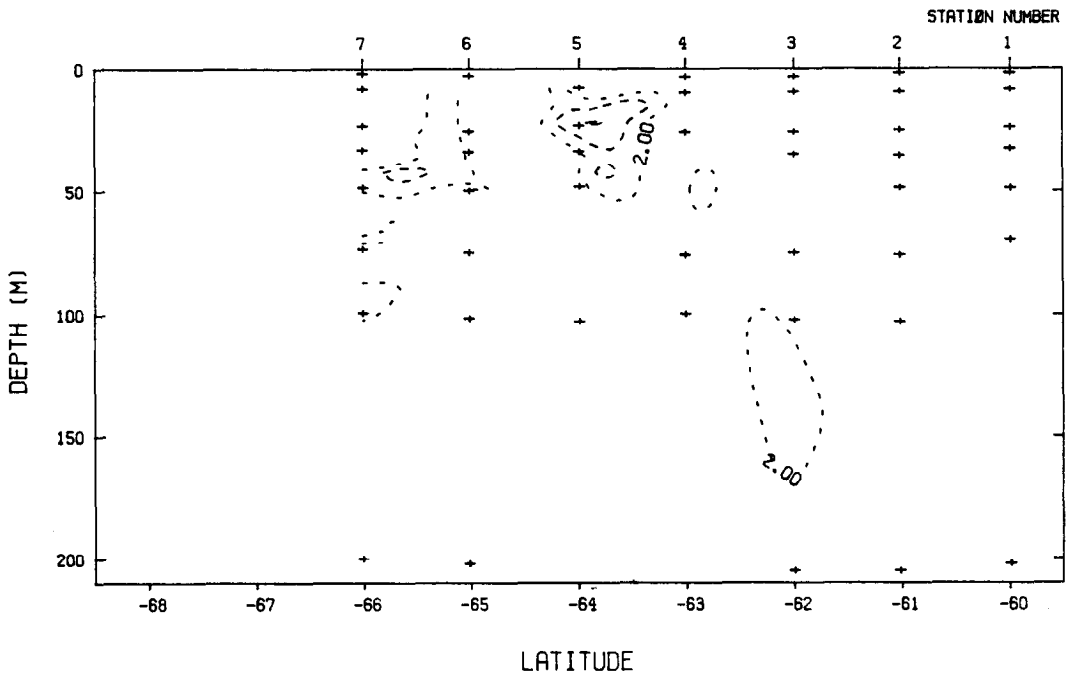
SIBEX2

CHLOROPHYLL B - 58 DEG EAST



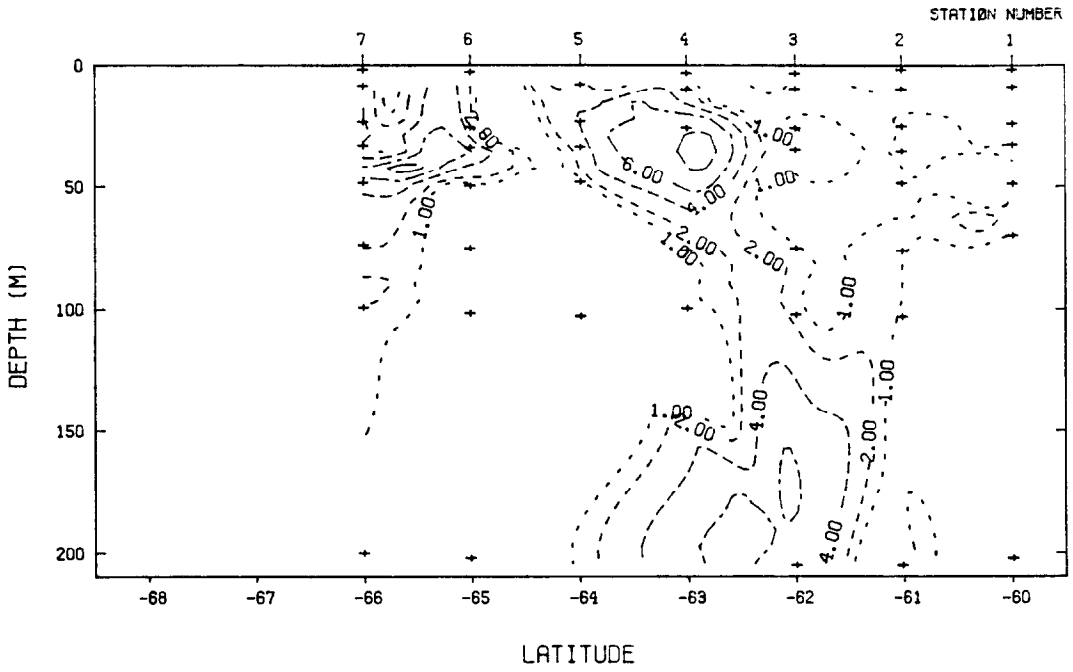
SIBEX2

PRASINOXANTHIN - 58 DEG EAST



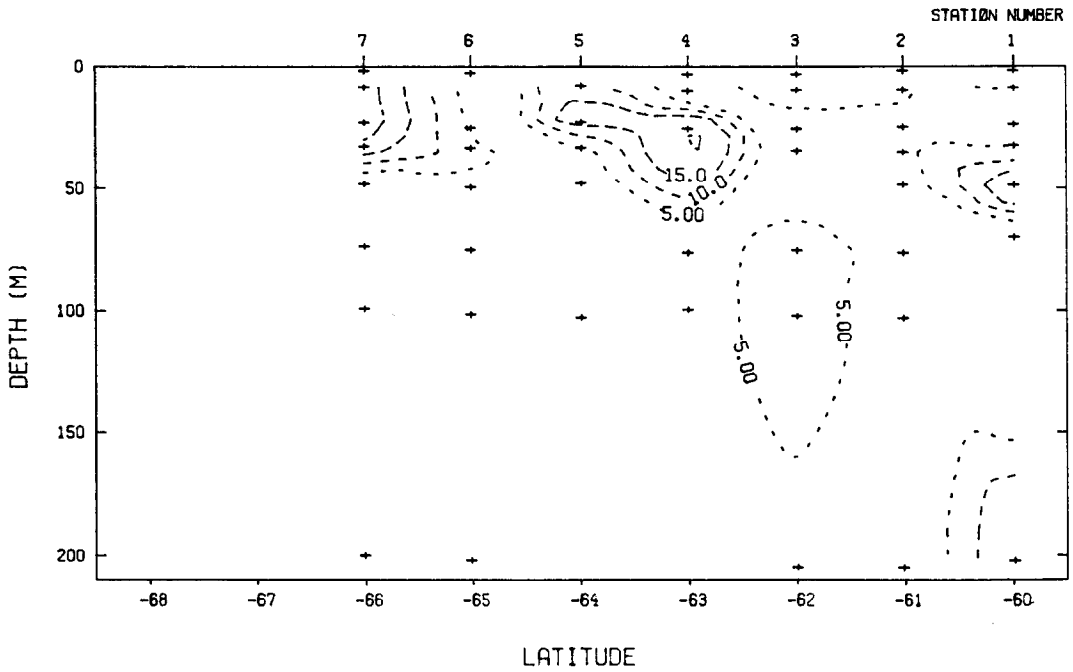
SIBEX2

Zeaxanthin - 58 DEG EAST



SIBEX2

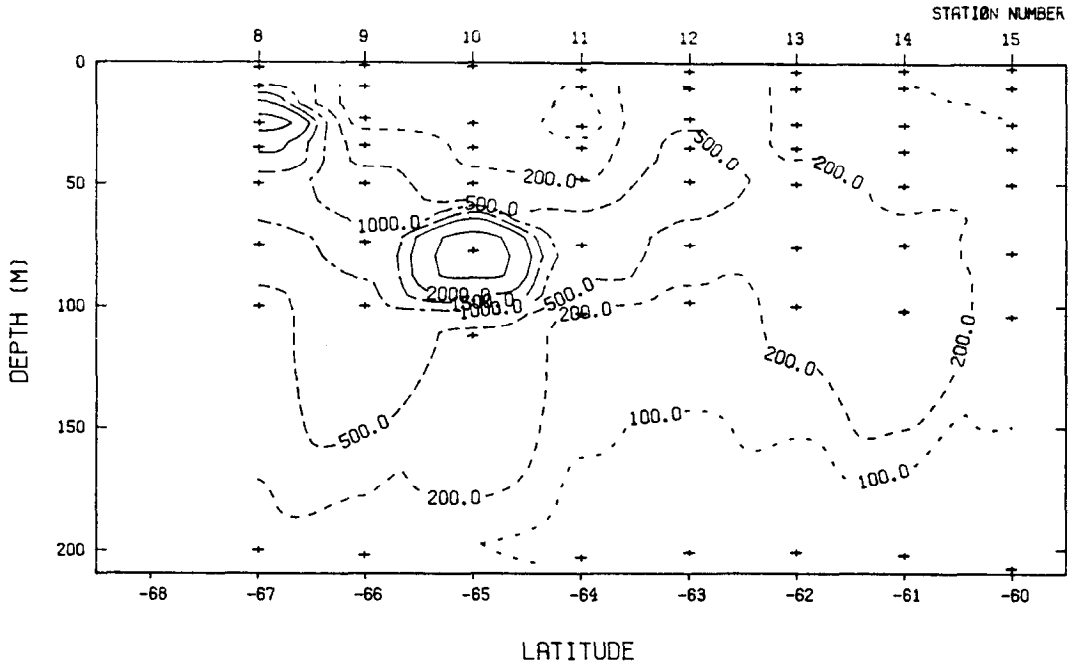
Peridinin - 58 DEG EAST





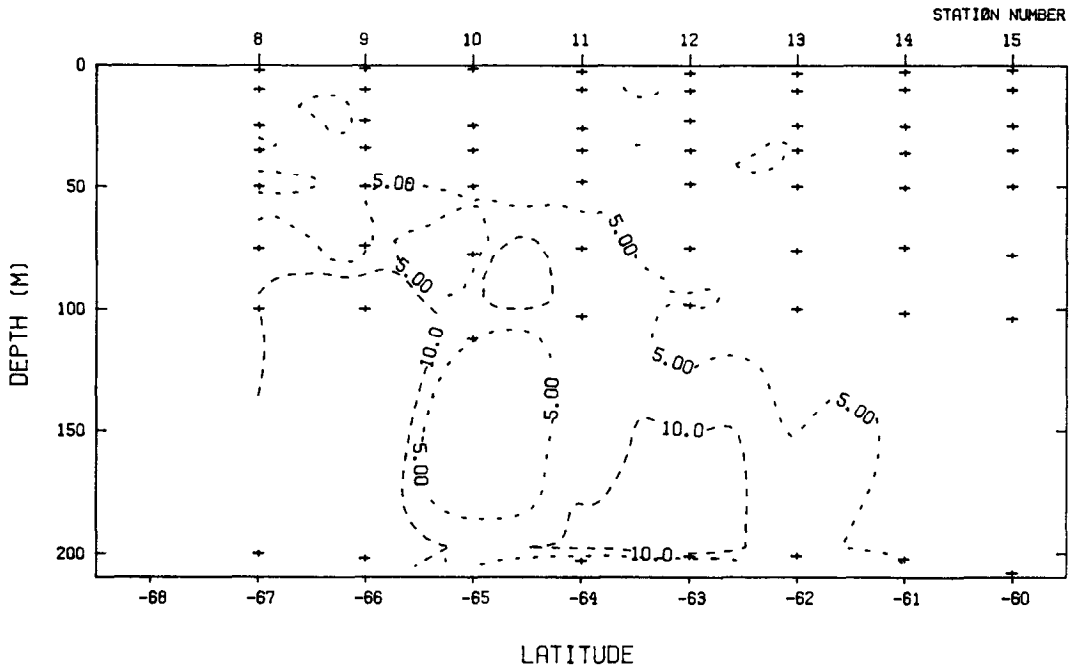
SIBEX2

CHLOROPHYLL A - 63 DEG EAST



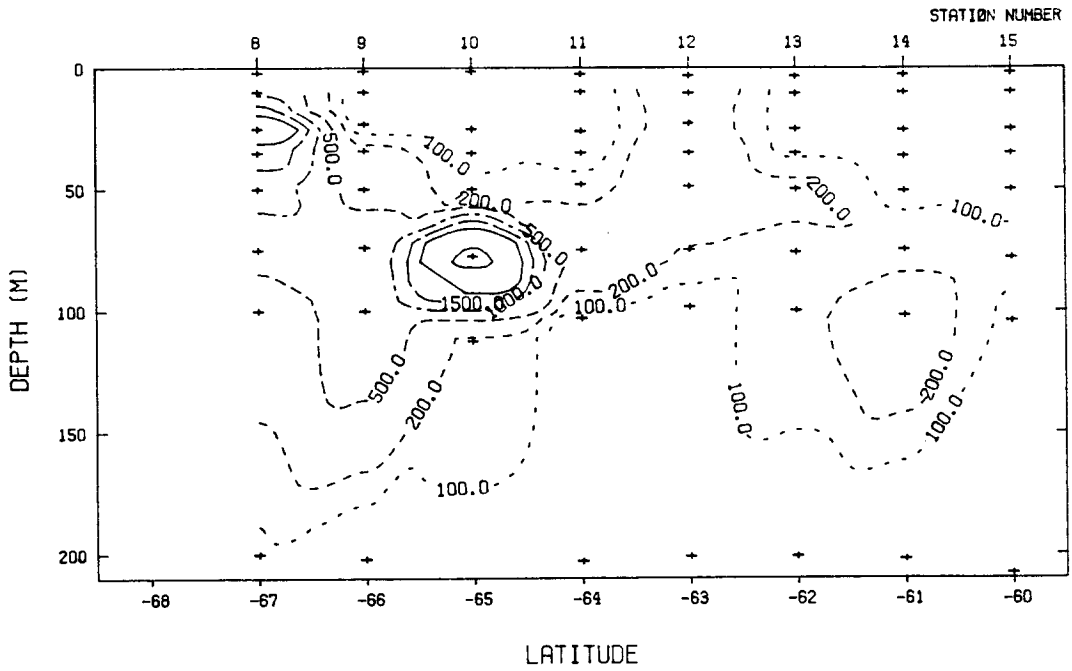
SIBEX2

%DEGRADATION - 63 DEG EAST



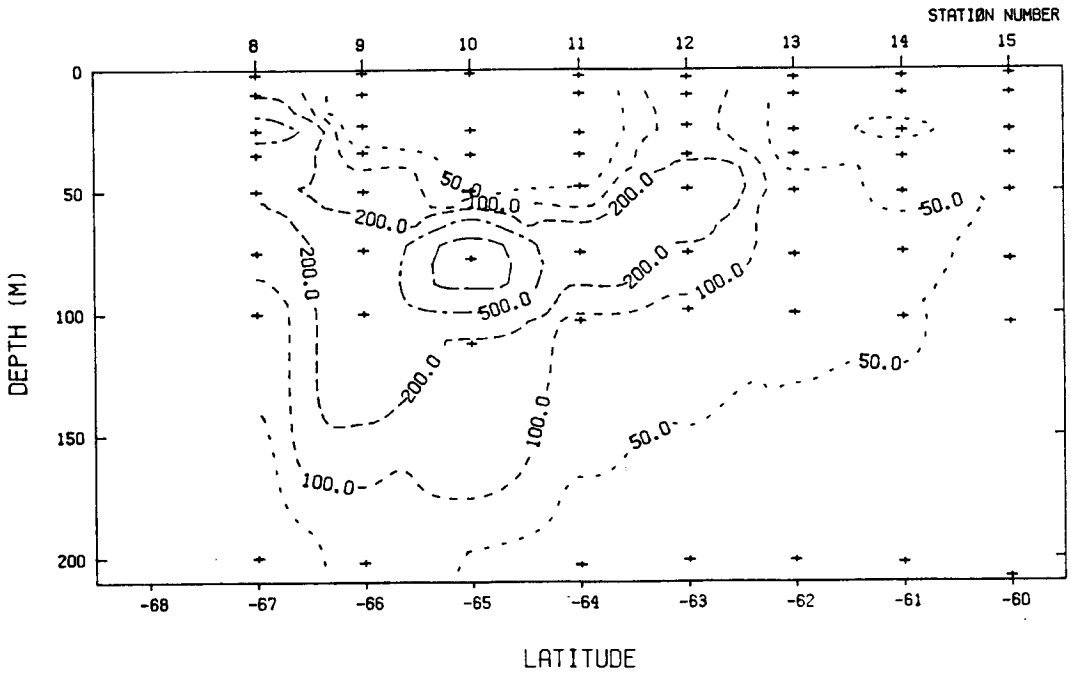
SIBEX2

FUCOXANTHIN - 63 DEG EAST



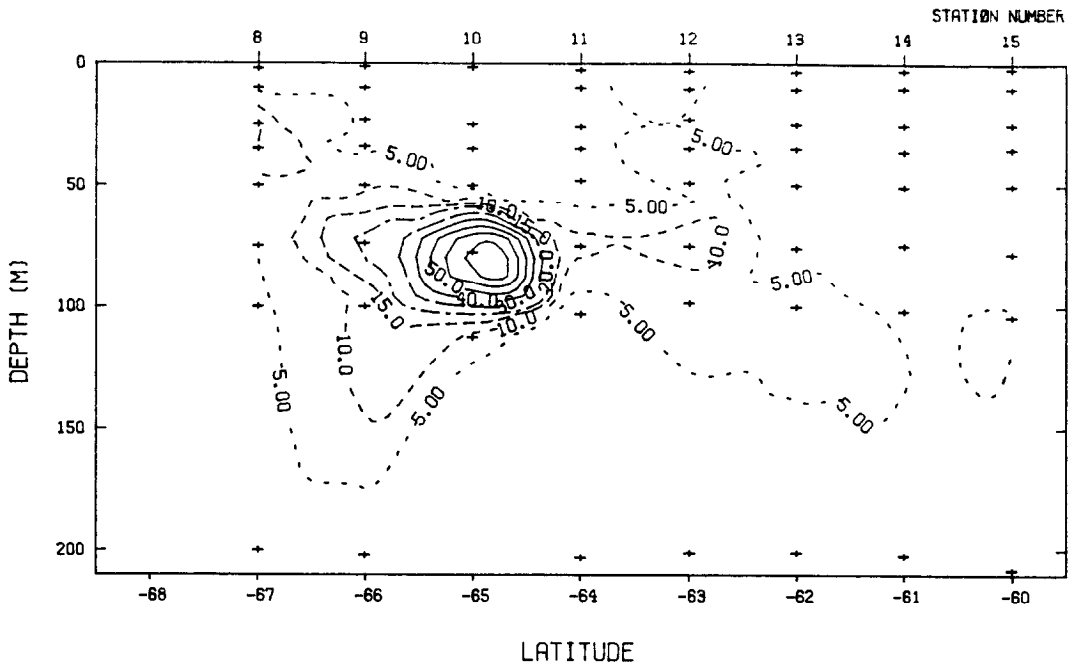
SIBEX2

19'-HEXANØYLØXYFUCOXANTHIN - 63 DEG EAST



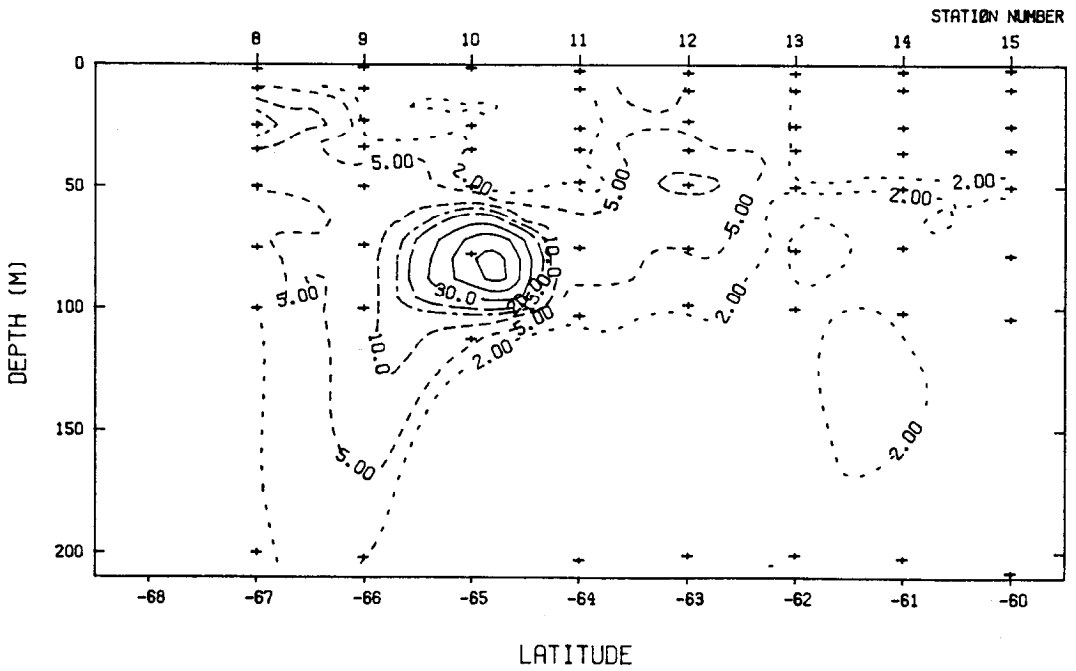
SIBEX2

FUCOX-X - 63 DEG EAST



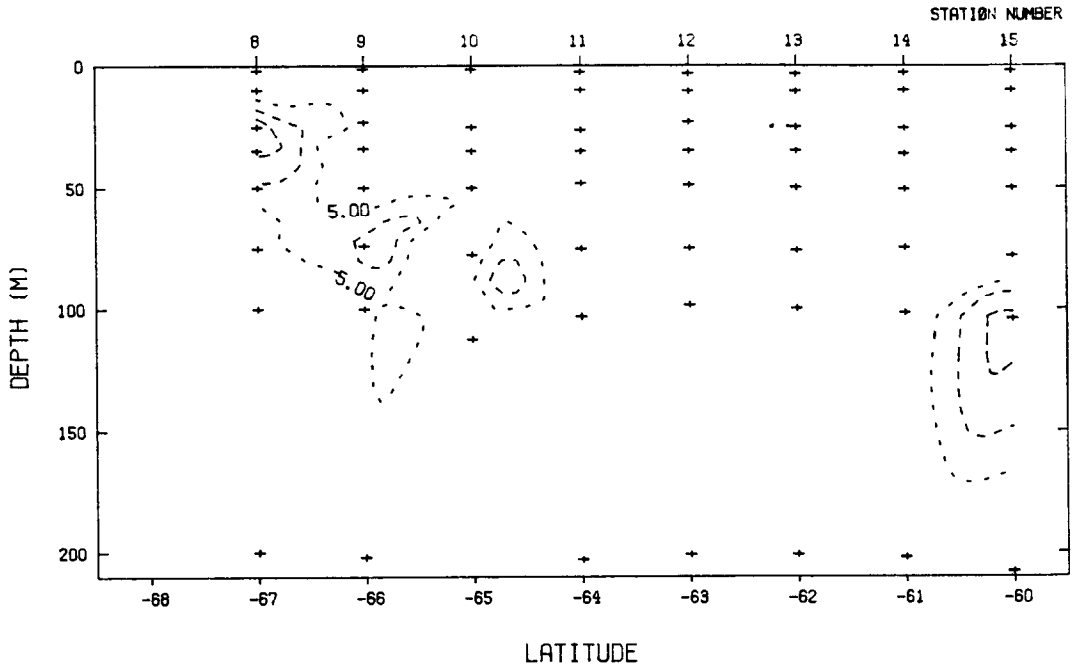
SIBEX2

ALLØXANTHIN - 63 DEG EAST



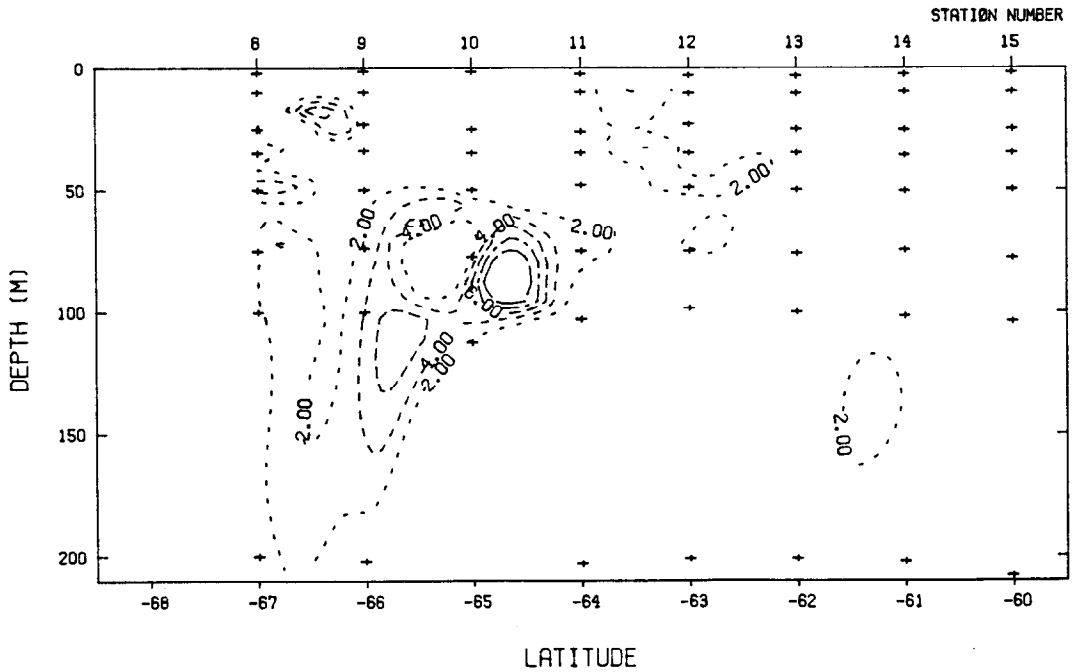
SIBEX2

CHLOROPHYLL B - 63 DEG EAST



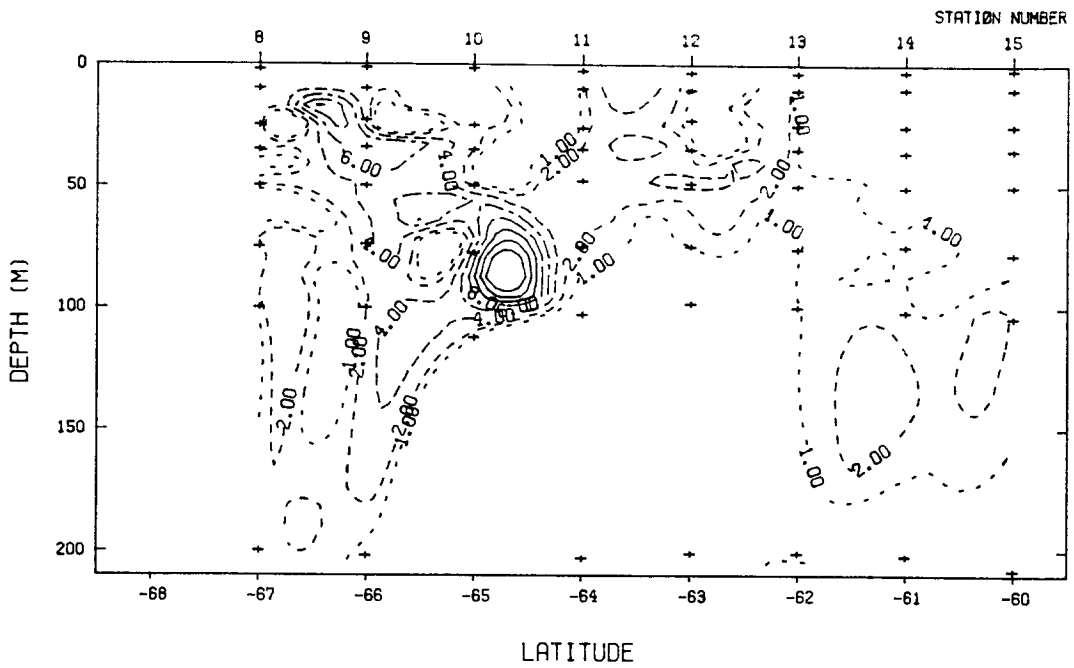
SIBEX2

PRASINOXANTHIN - 63 DEG EAST



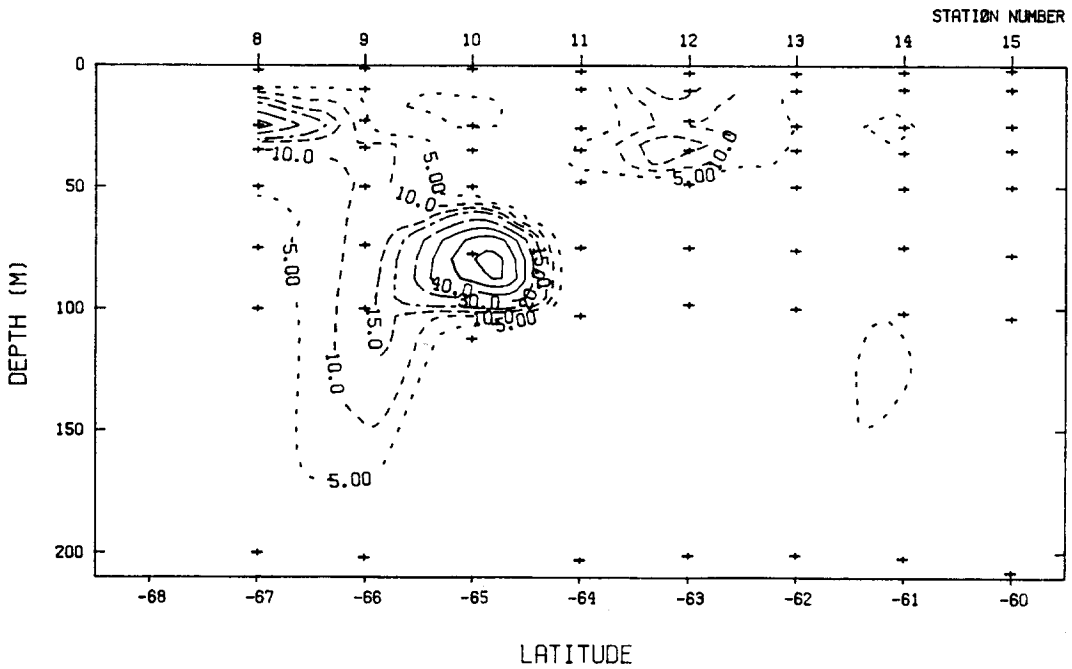
SIBEX2

ZEAXANTHIN - 63 DEG EAST



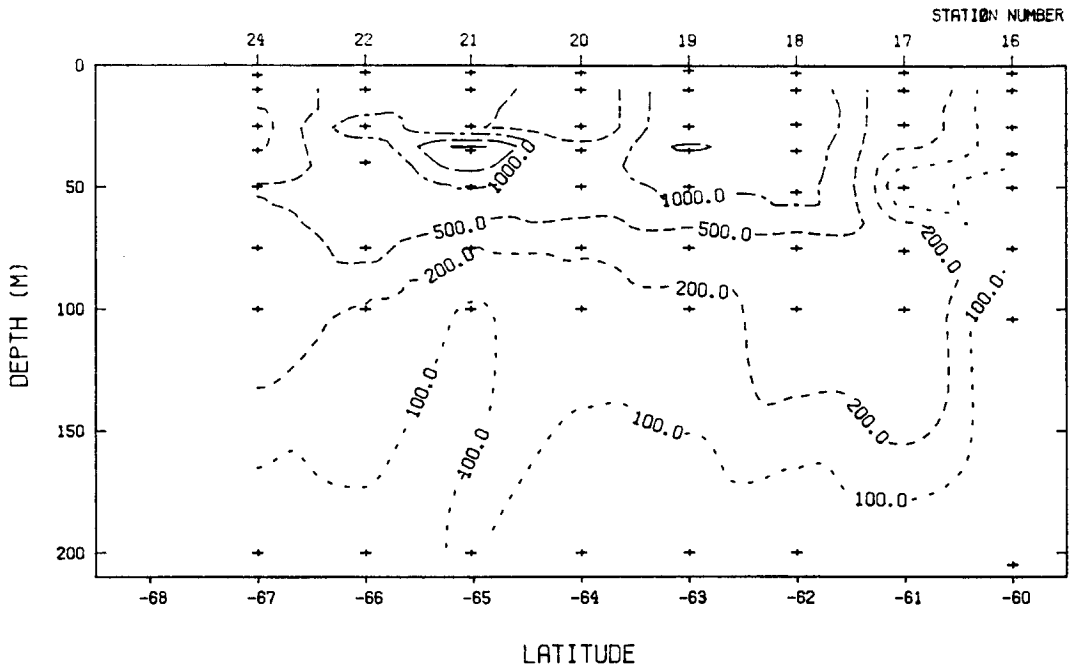
SIBEX2

PERIDININ - 63 DEG EAST



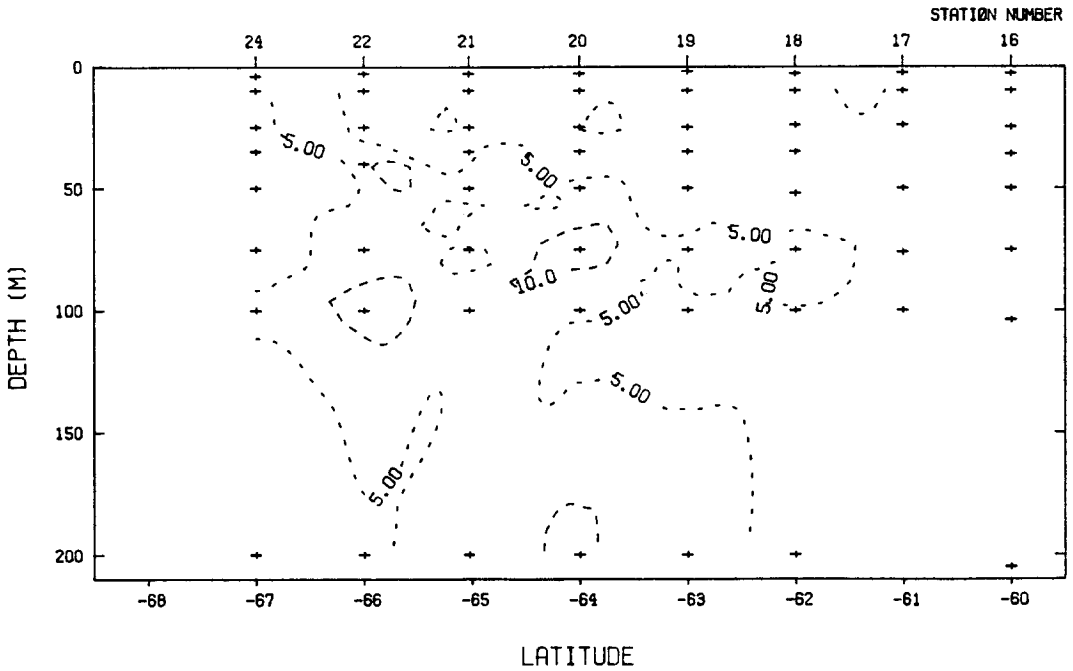
SIBEX2

CHLOROPHYLL A - 68 DEG EAST



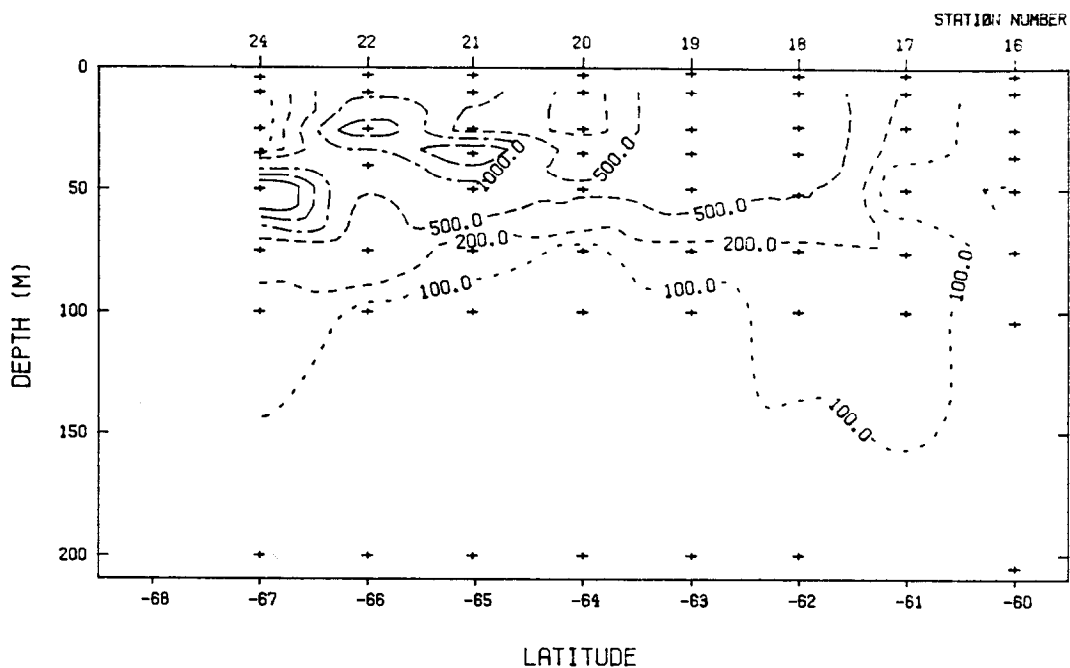
SIBEX2

%DEGRADATION - 68 DEG EAST



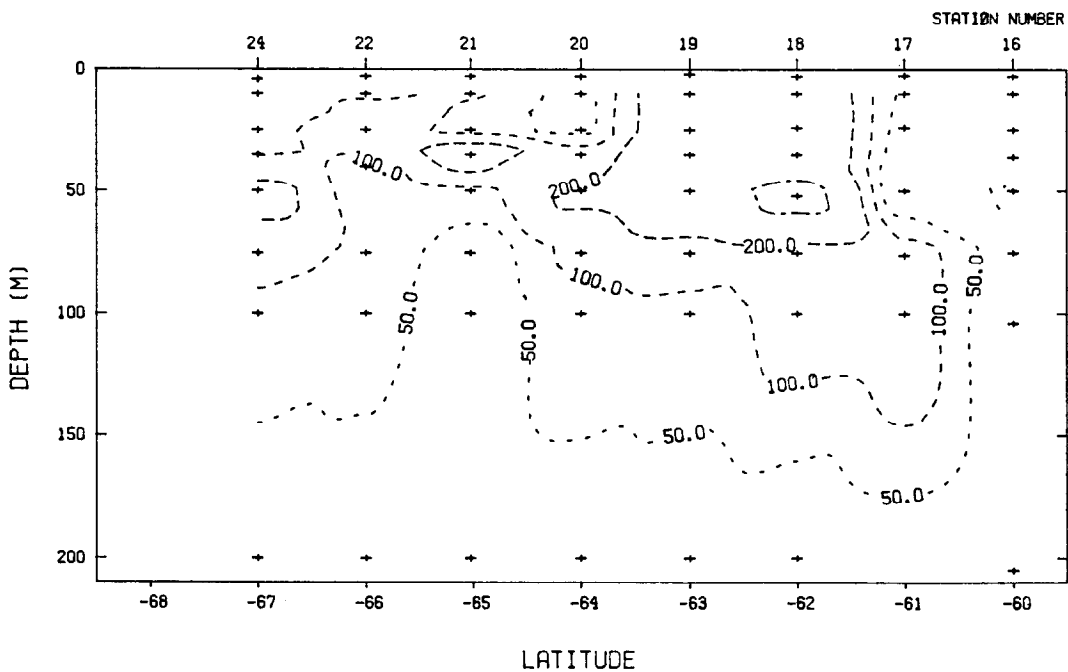
SIBEX2

FUCOXANTHIN - 68 DEG EAST



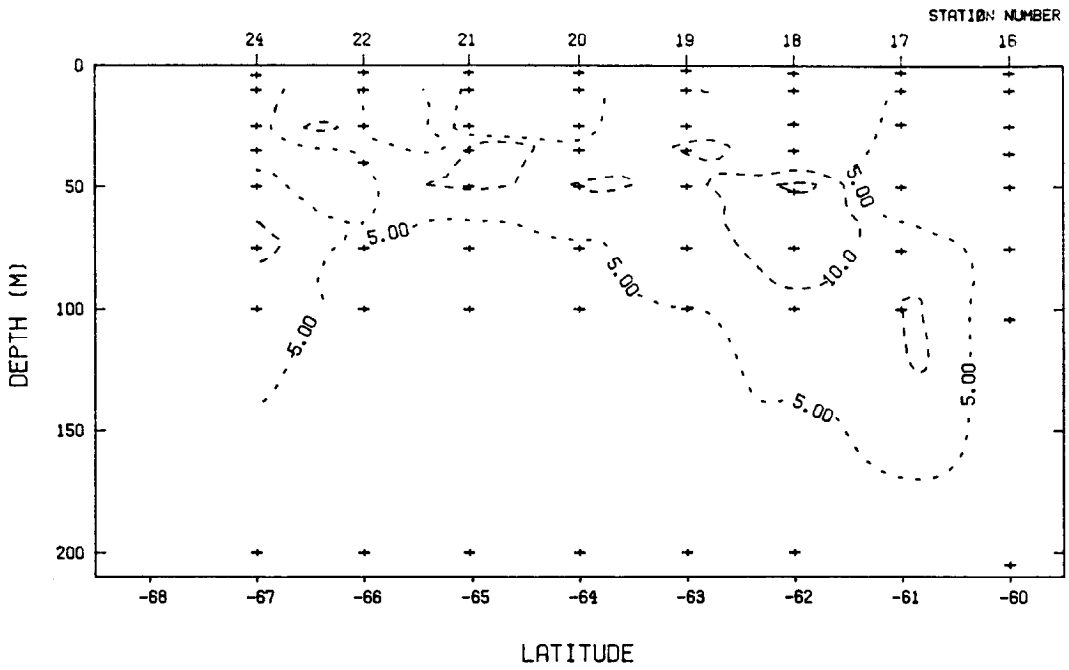
SIBEX2

19'-HEXANØYLØXYFUCOXANTHIN - 68 DEG EAST



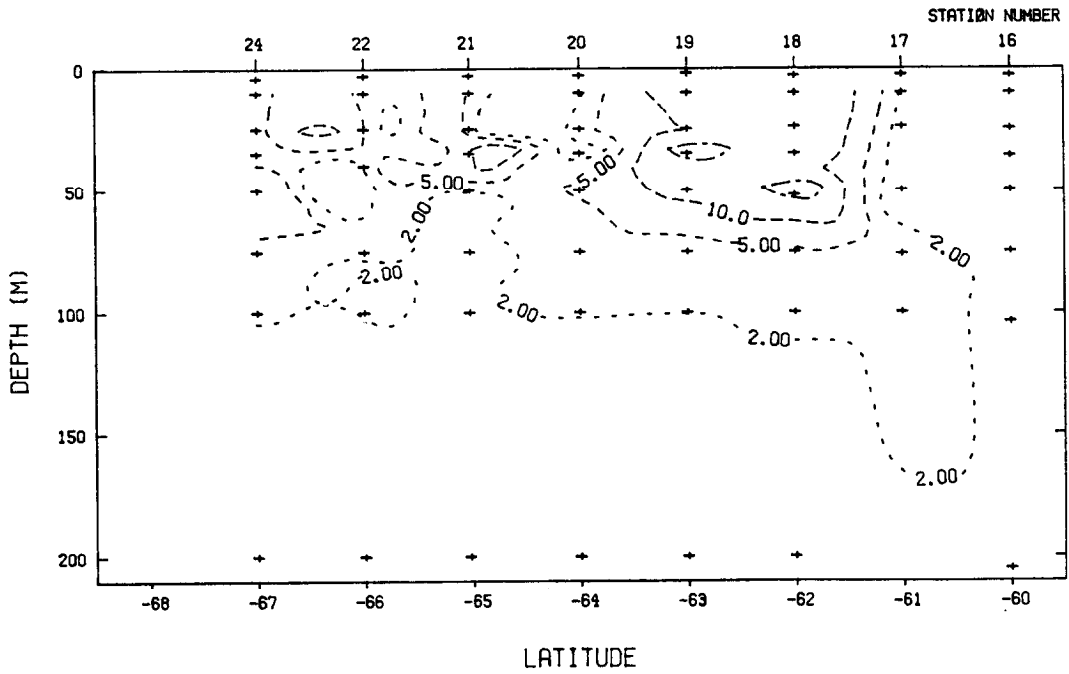
SIBEX2

FUCØX-X - 68 DEG EAST



SIBEX2

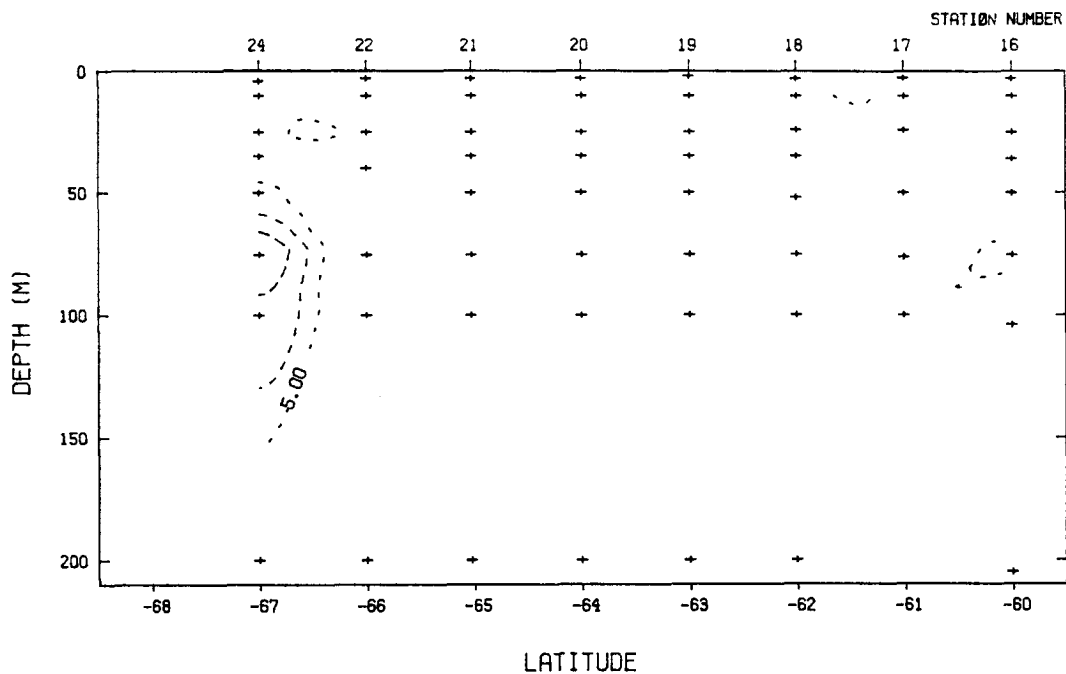
ALLØXANTHIN - 68 DEG EAST





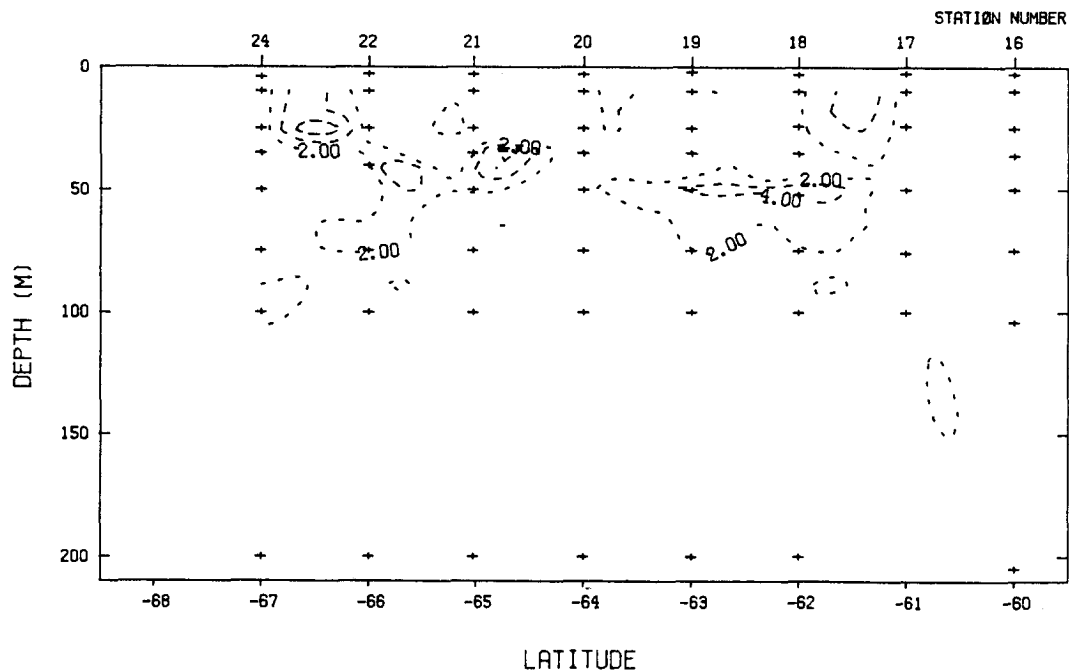
SIBEX2

CHLOROPHYLL B - 68 DEG EAST



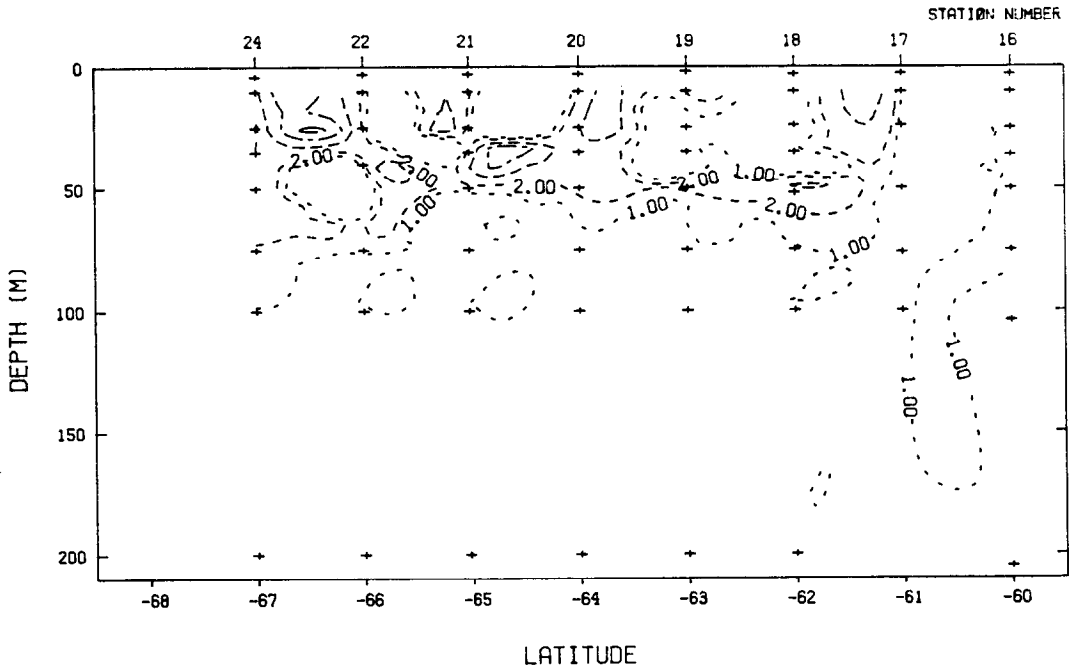
SIBEX2

PRASINOXANTHIN - 68 DEG EAST



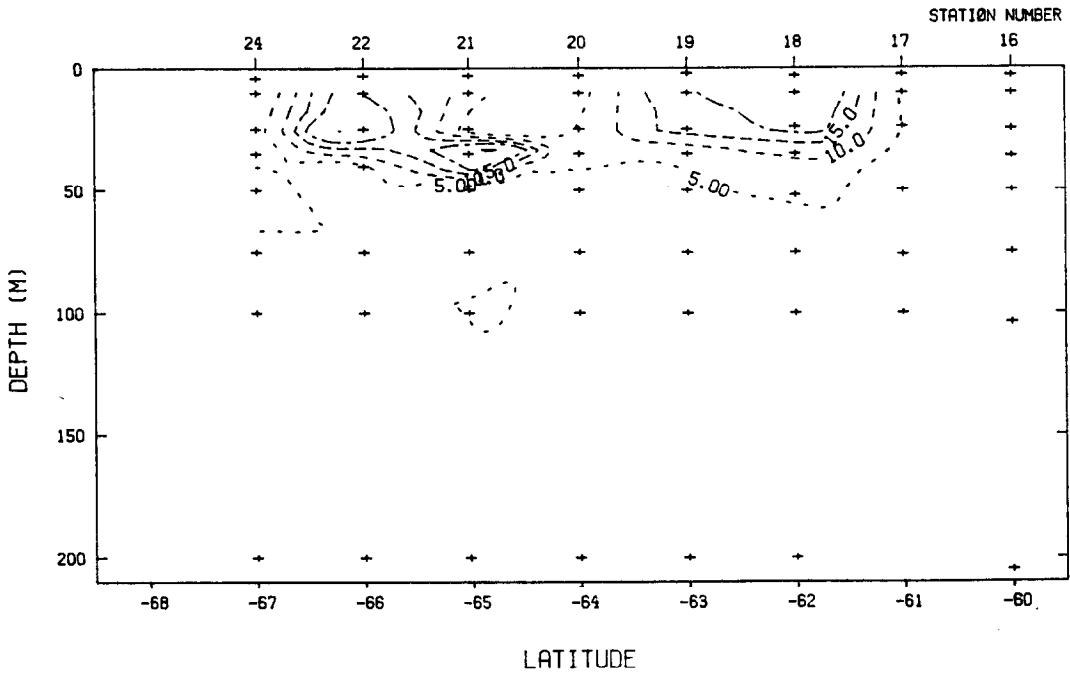
SIBEX2

Zeaxanthin - 68 DEG EAST



SIBEX2

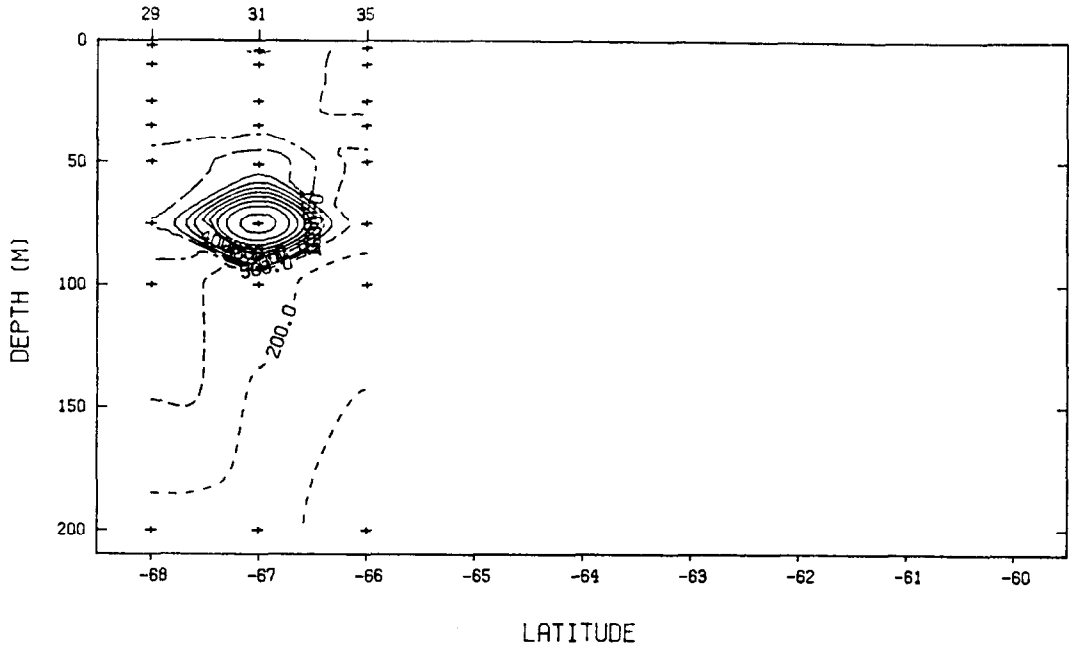
Peridinin - 68 DEG EAST



SIBEX2

CHLOROPHYLL A - 73 DEG EAST

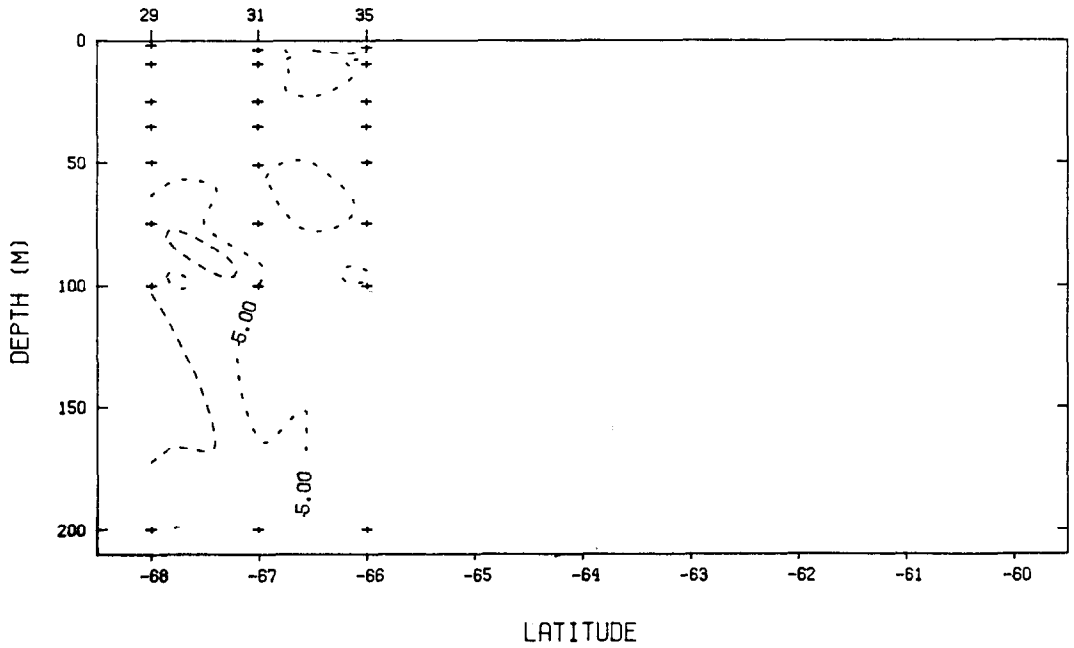
STATION NUMBER



SIBEX2

%DEGRADATION - 73 DEG EAST

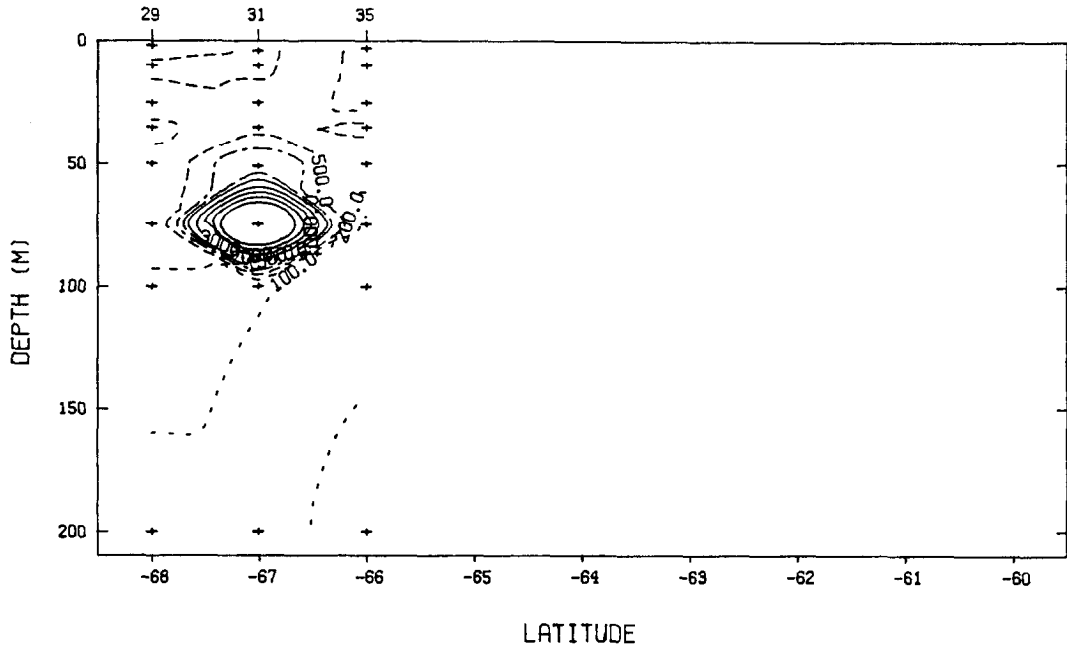
STATION NUMBER



SIBEX2

FUCOXANTHIN - 73 DEG EAST

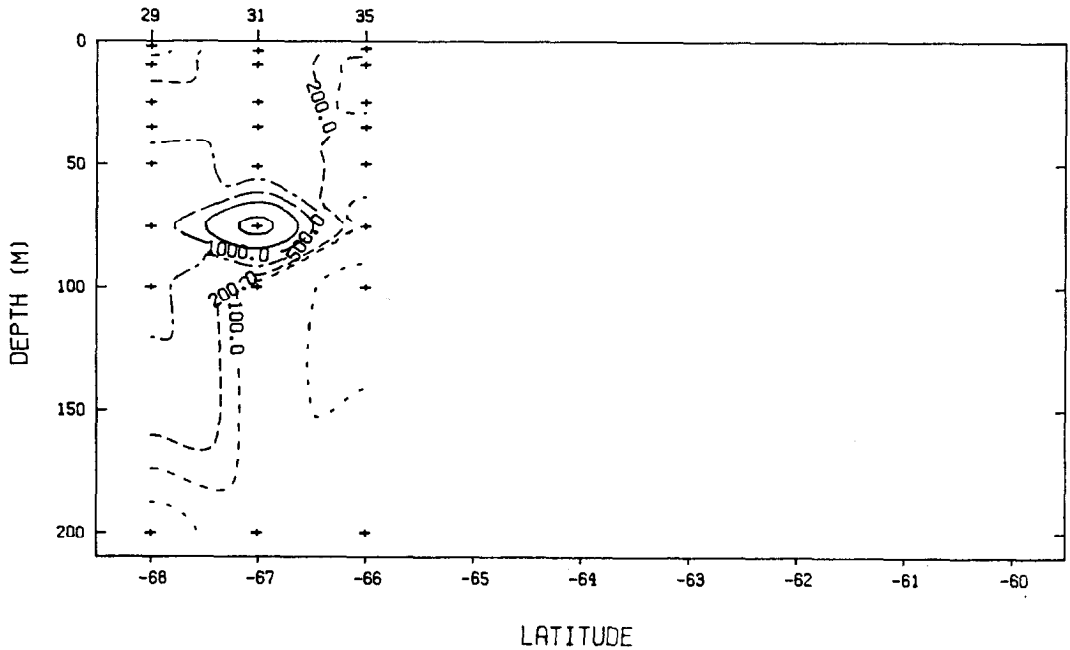
STATION NUMBER



SIBEX2

19'-HEXANØYLØXYFUCOXANTHIN - 73 DEG EAST

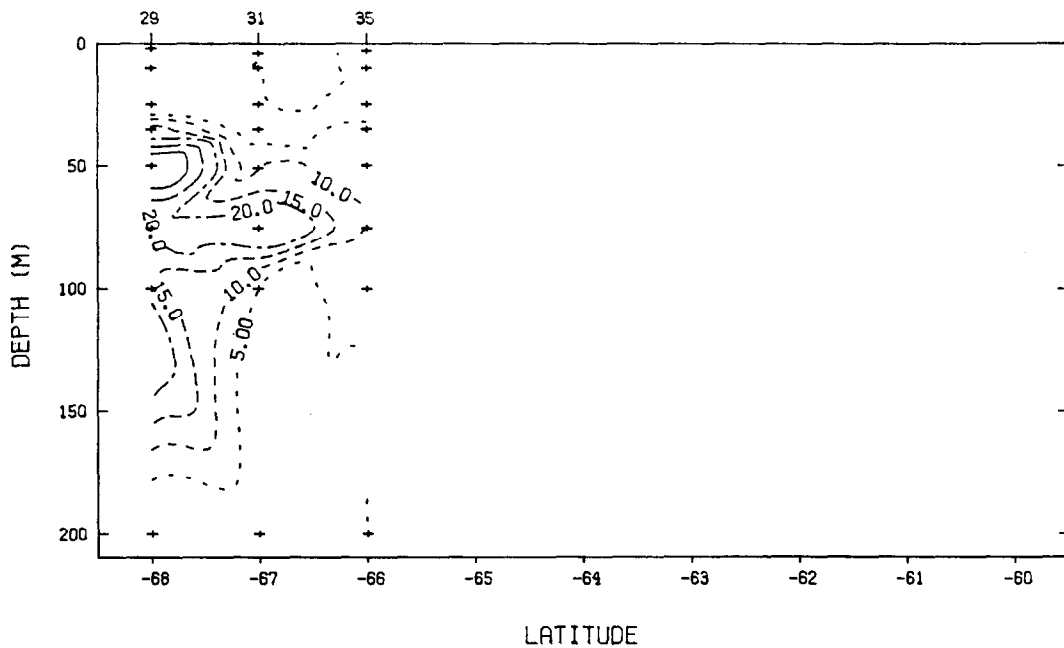
STATION NUMBER



SIBEX2

FUCOX-X - 73 DEG EAST

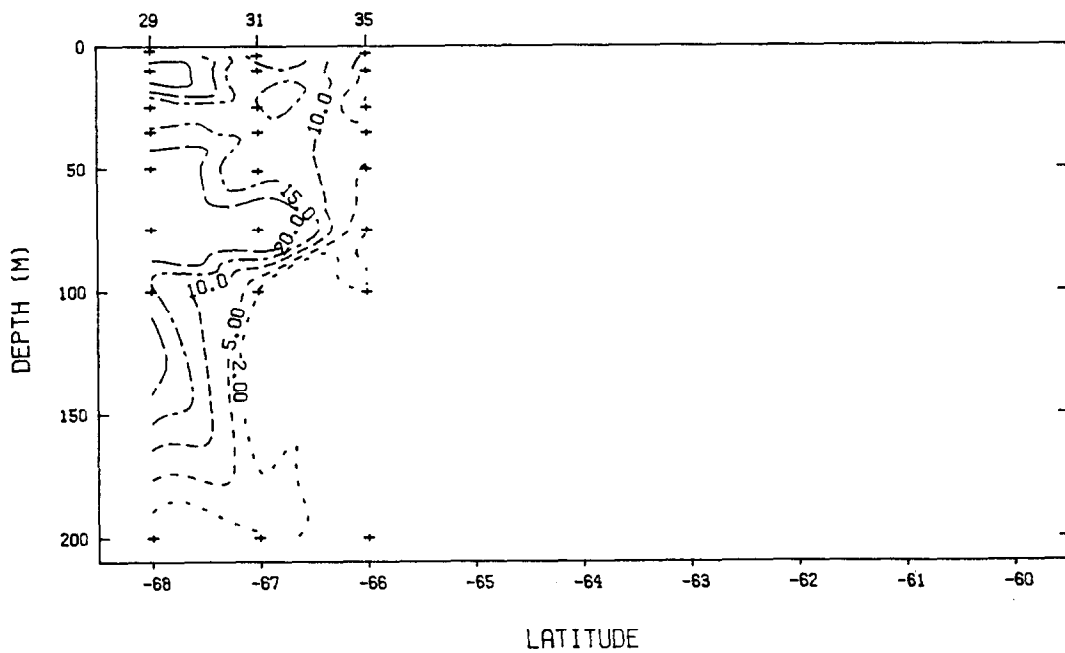
STATION NUMBER



SIBEX2

ALLØXANTHIN - 73 DEG EAST

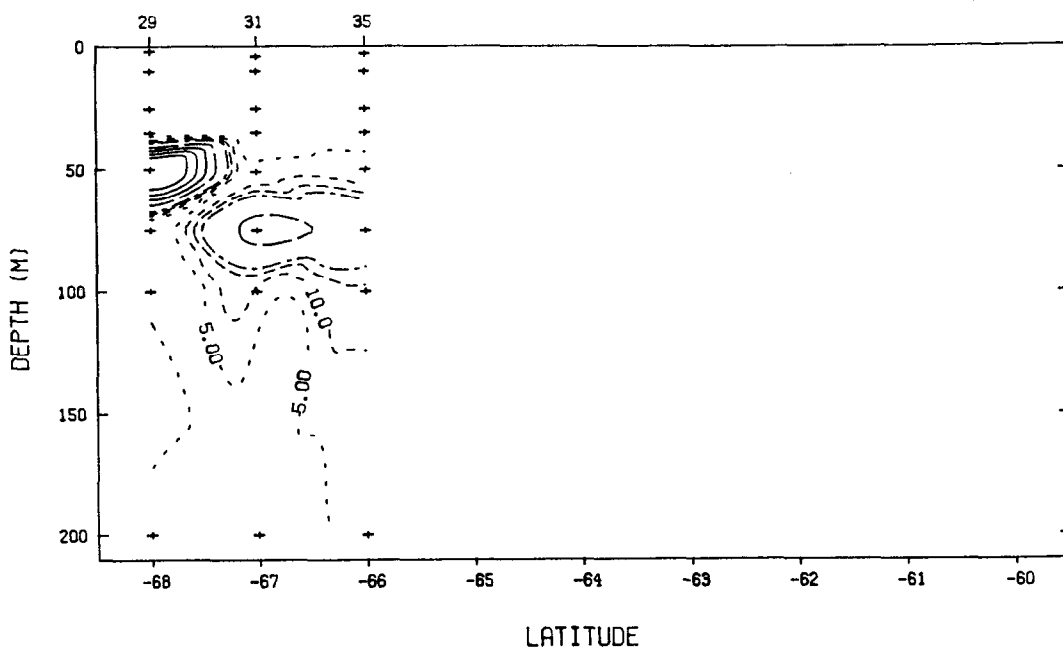
STATION NUMBER



SIBEX2

CHLOROPHYLL B - 73 DEG EAST

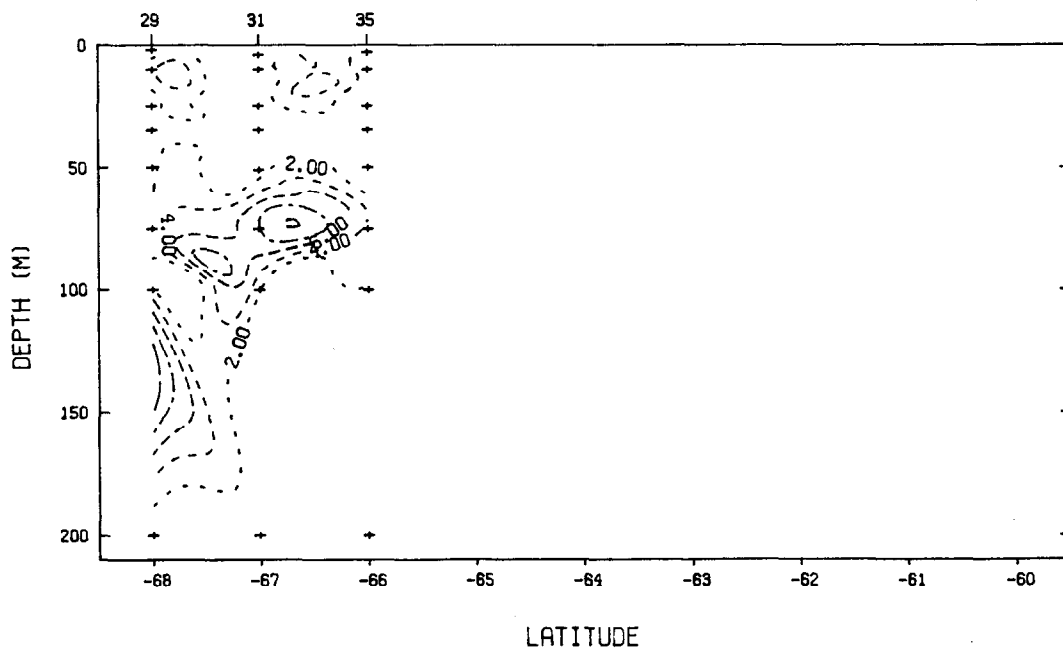
STATION NUMBER



SIBEX2

PRASINOXANTHIN - 73 DEG EAST

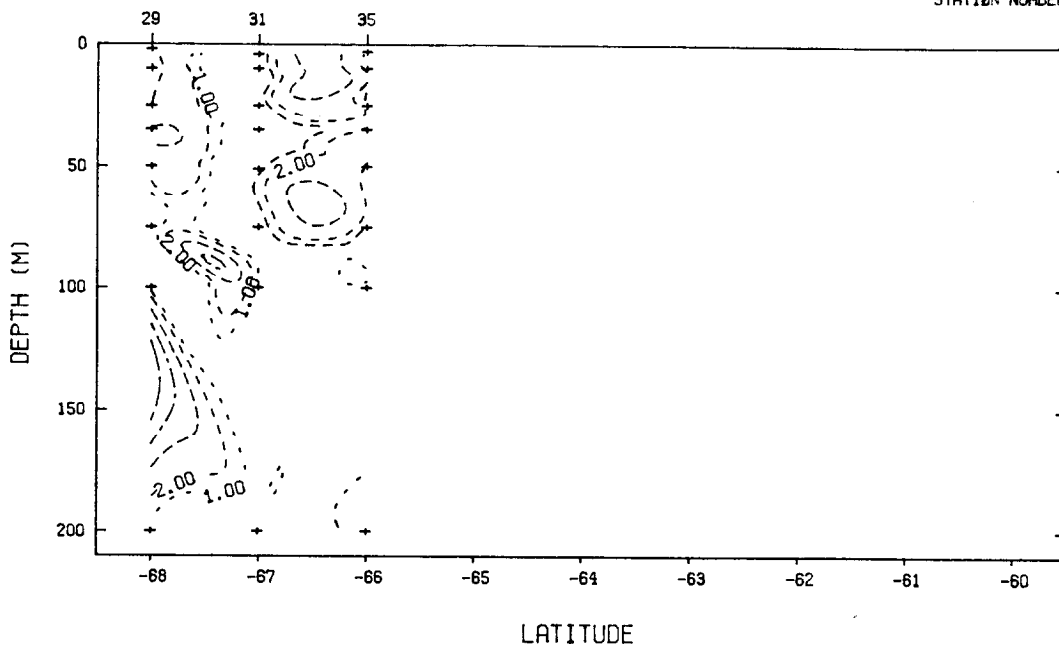
STATION NUMBER



SIBEX2

Zeaxanthin - 73 DEG EAST

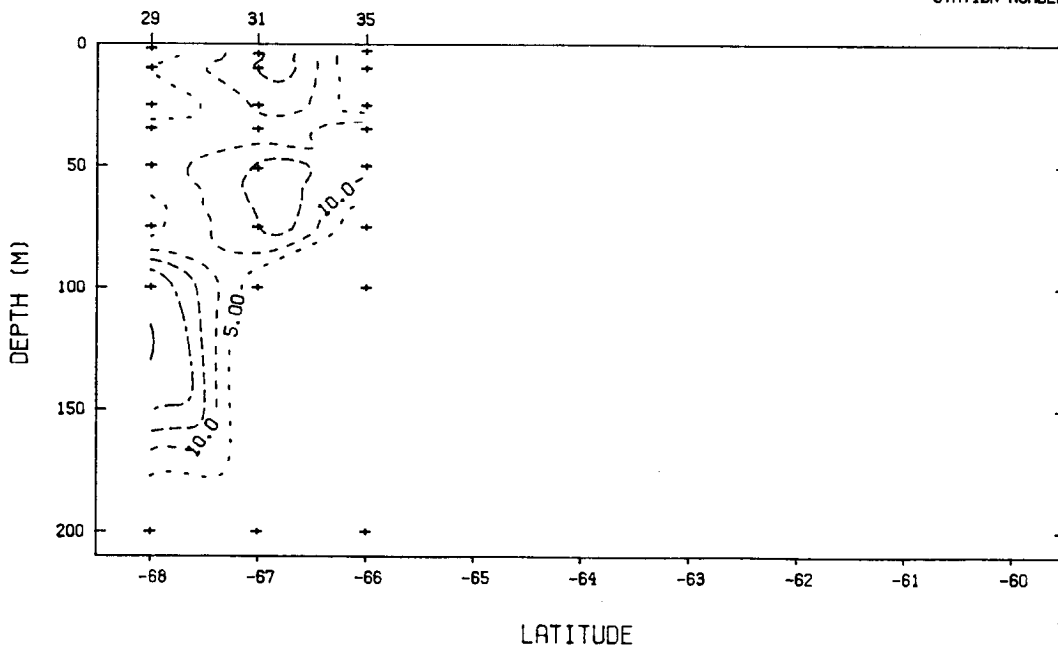
STATION NUMBER



SIBEX2

Peridinin - 73 DEG EAST

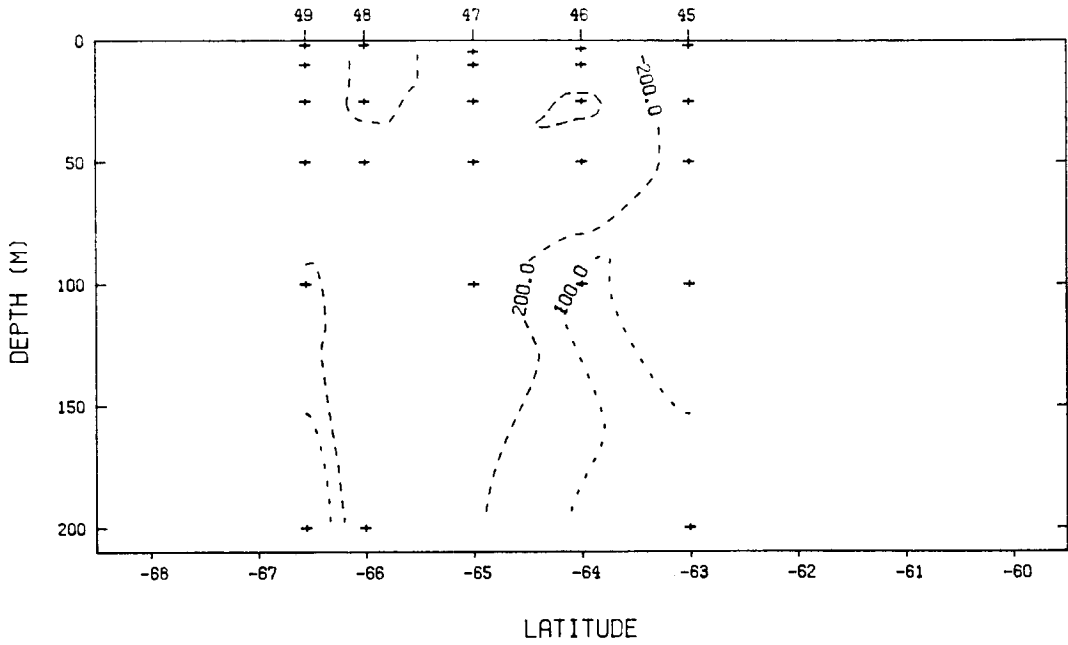
STATION NUMBER



SIBEX2

CHLOROPHYLL A - 78 DEG EAST

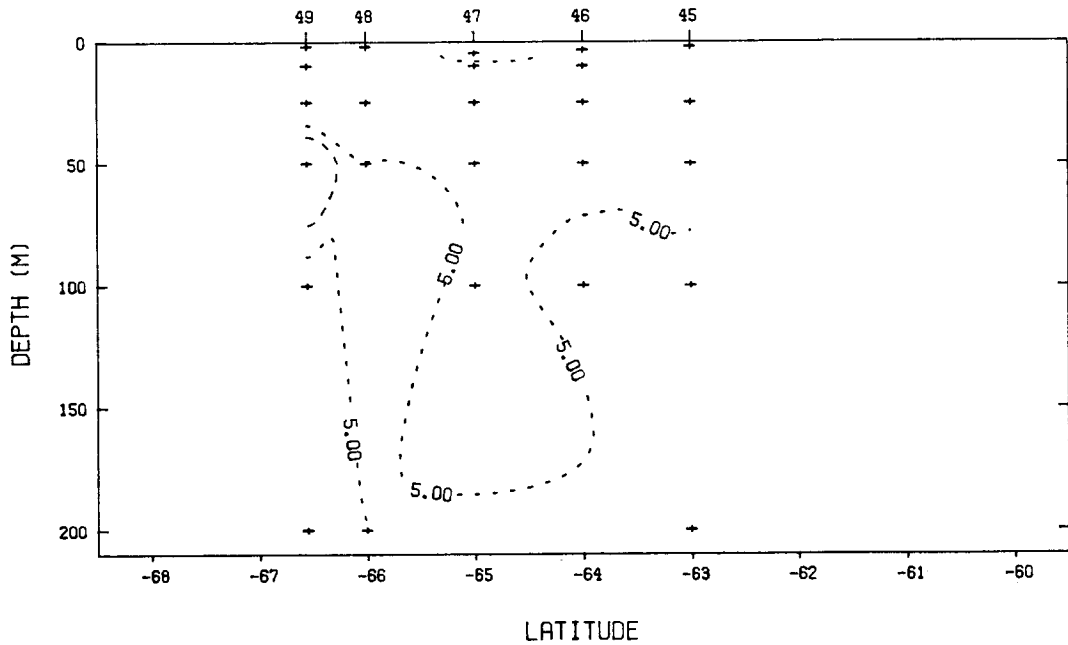
STATION NUMBER



SIBEX2

%DEGRADATION - 78 DEG EAST

STATION NUMBER

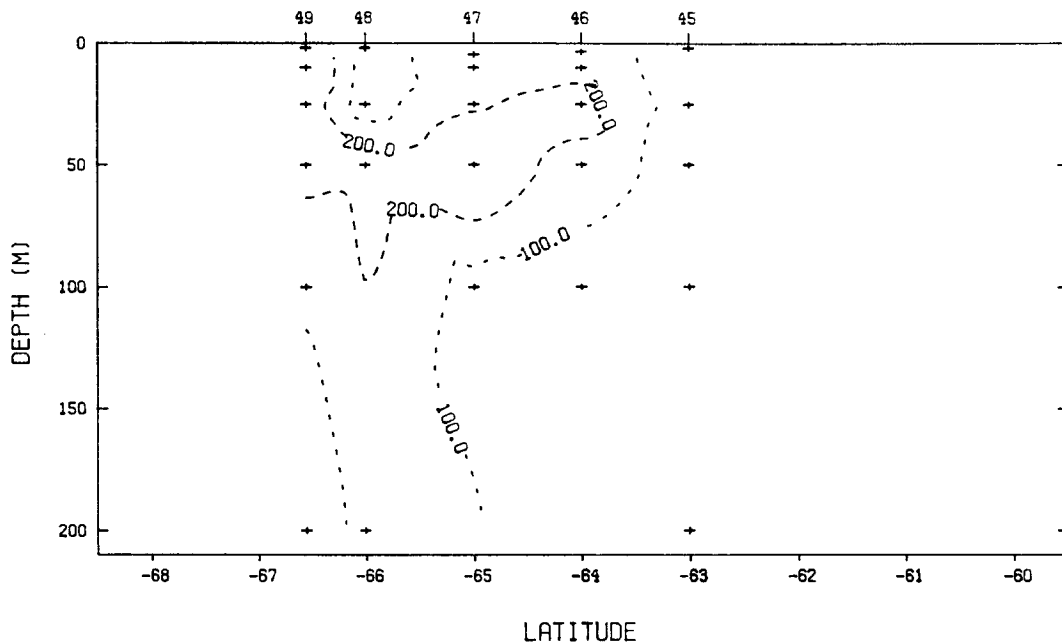




SIBEX2

FUCOXANTHIN - 78 DEG EAST

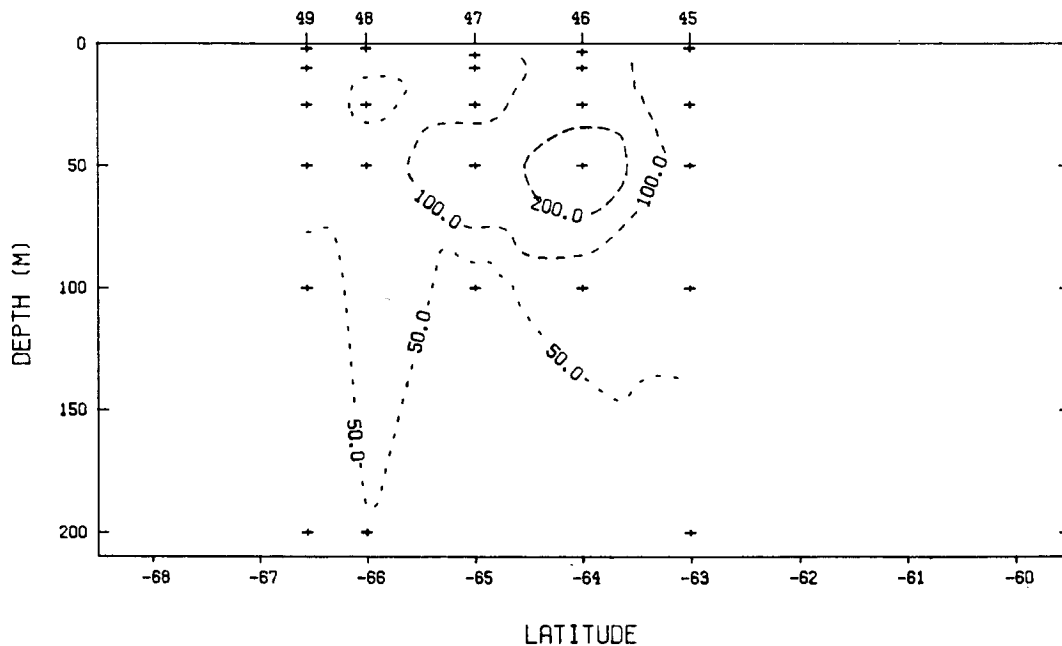
STATION NUMBER



SIBEX2

19'-HEXANOYLØXYFUCOXANTHIN - 78 DEG EAST

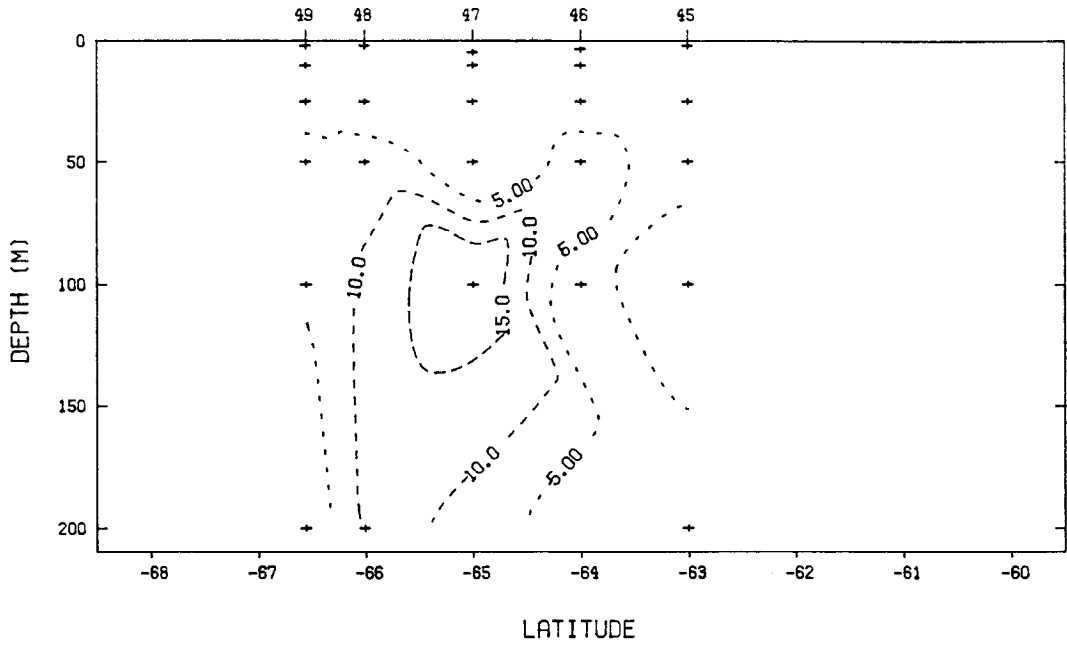
STATION NUMBER



SIBEX2

FUCØX-X - 78 DEG EAST

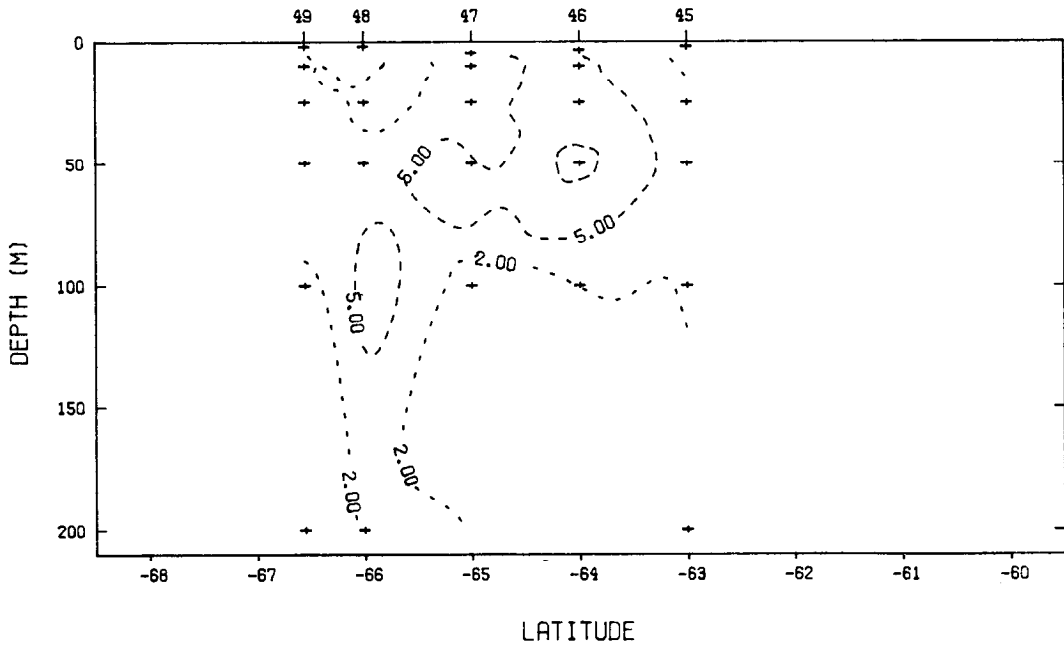
STATION NUMBER



SIBEX2

ALLØXANTHIN - 78 DEG EAST

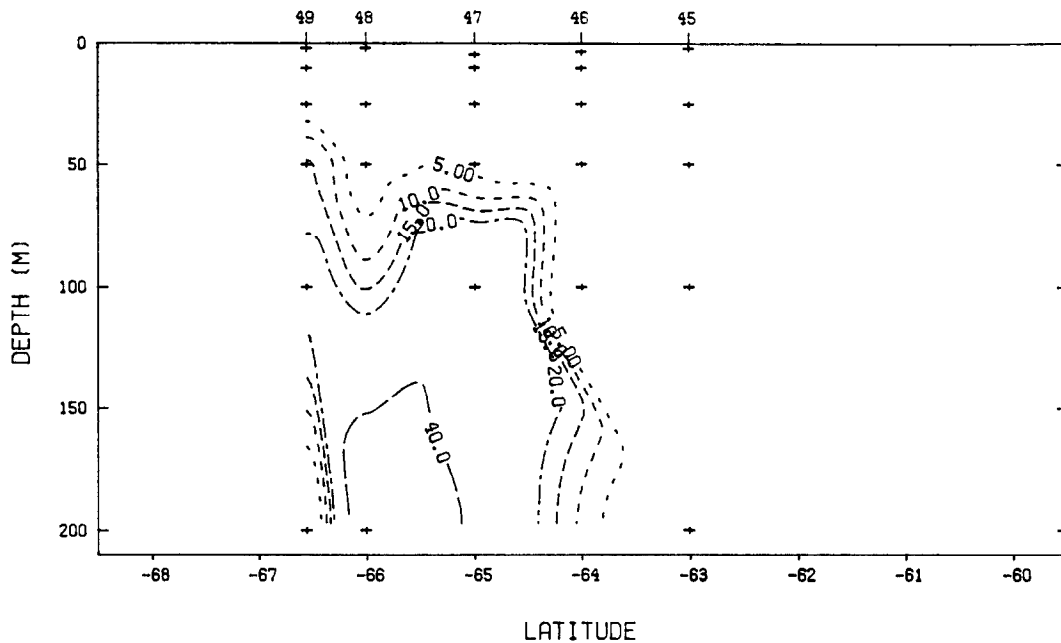
STATION NUMBER



SIBEX2

CHLOROPHYLL B - 78 DEG EAST

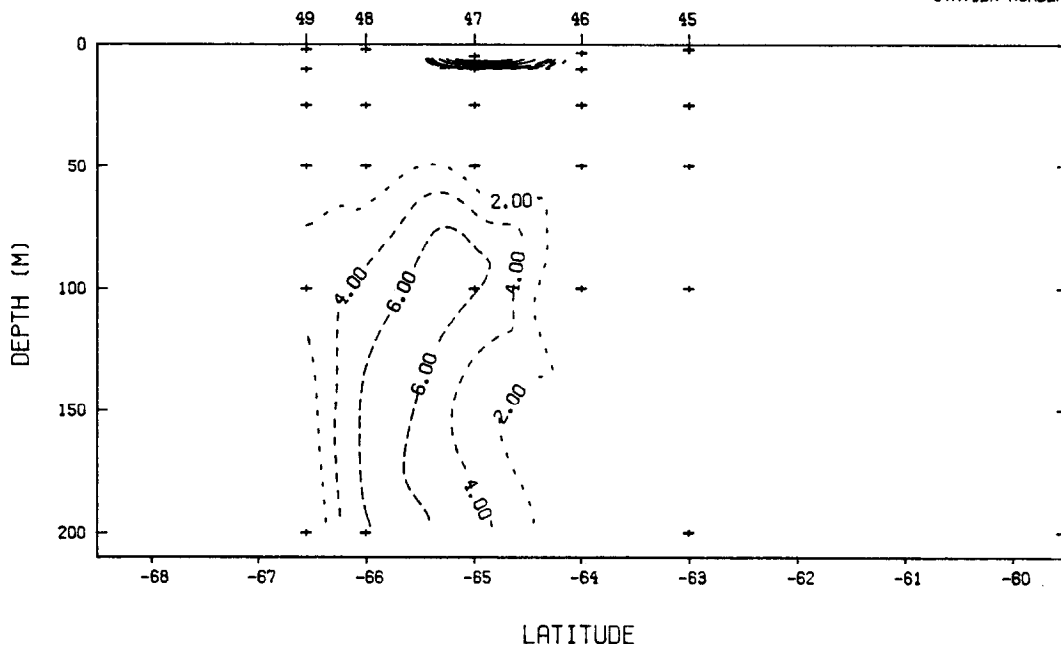
STATION NUMBER



SIBEX2

PRASINOXANTHIN - 78 DEG EAST

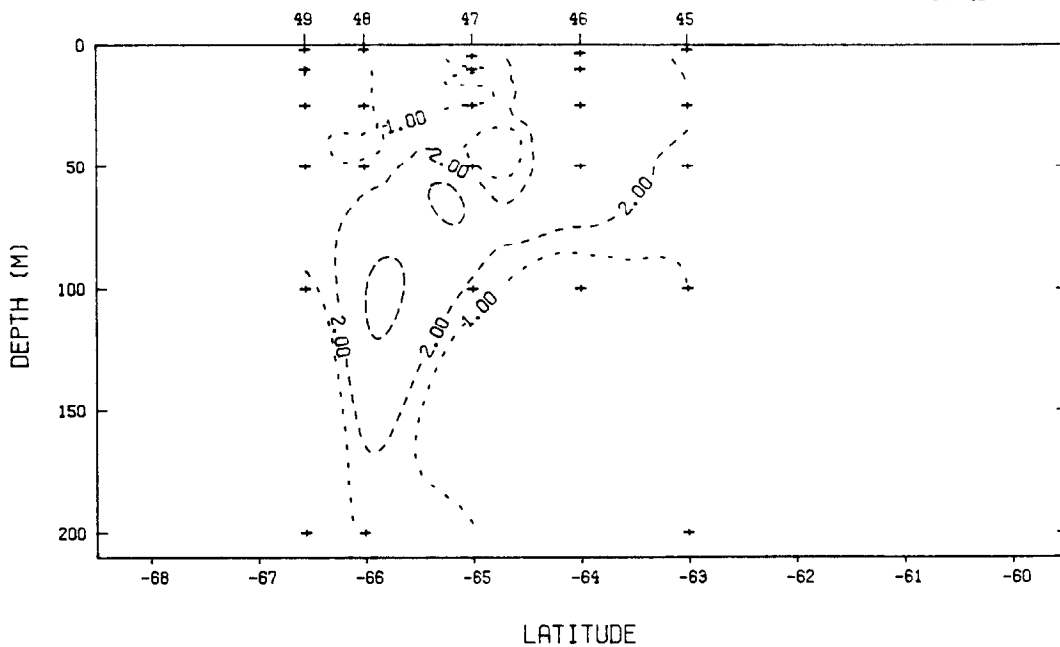
STATION NUMBER



SIBEX2

ZEAXANTHIN - 78 DEG EAST

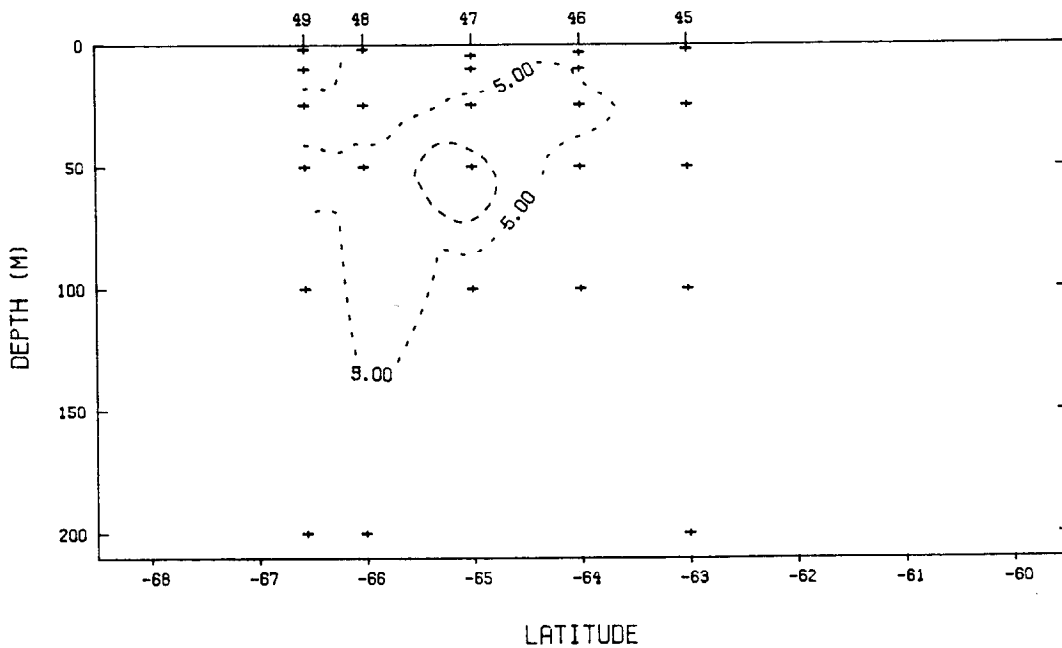
STATION NUMBER



SIBEX2

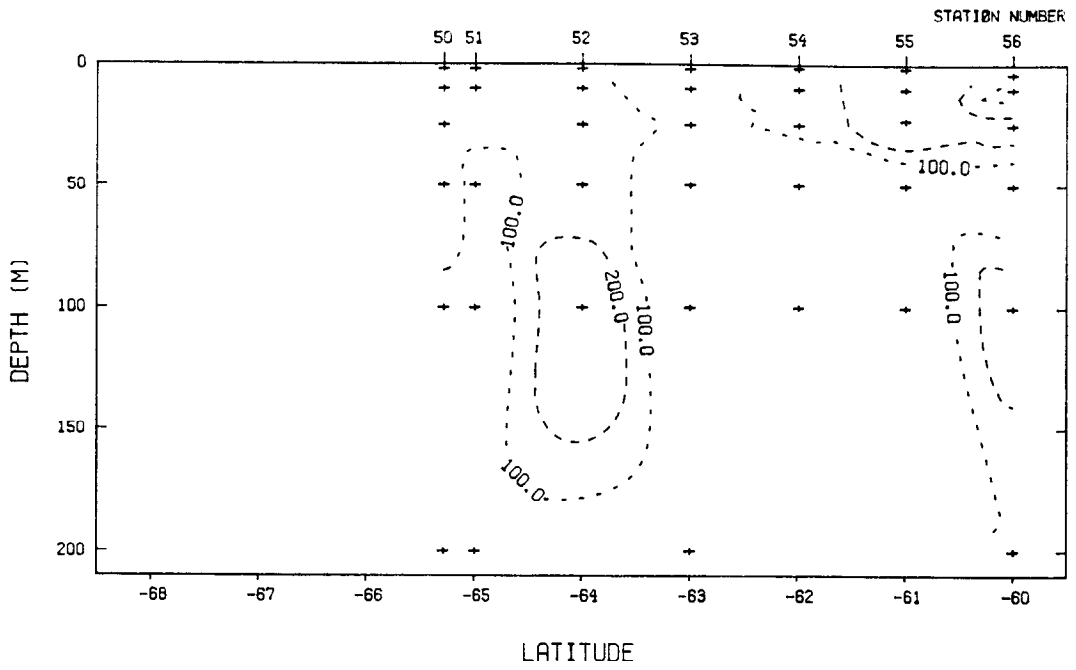
PERIDININ - 78 DEG EAST

STATION NUMBER



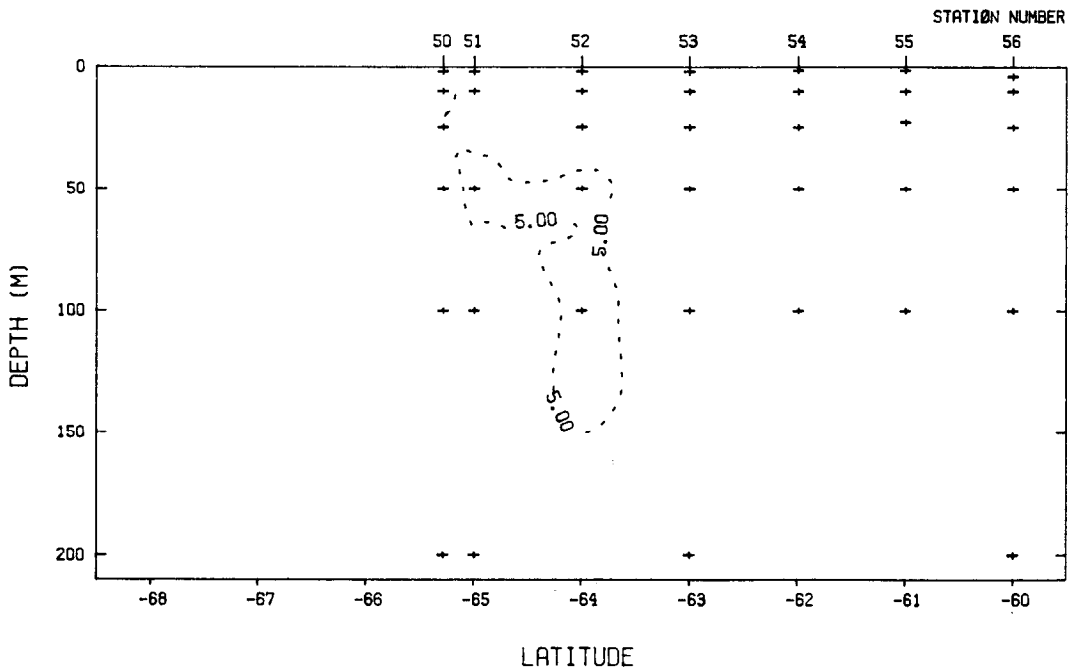
SIBEX2

CHLOROPHYLL A - 83 DEG EAST



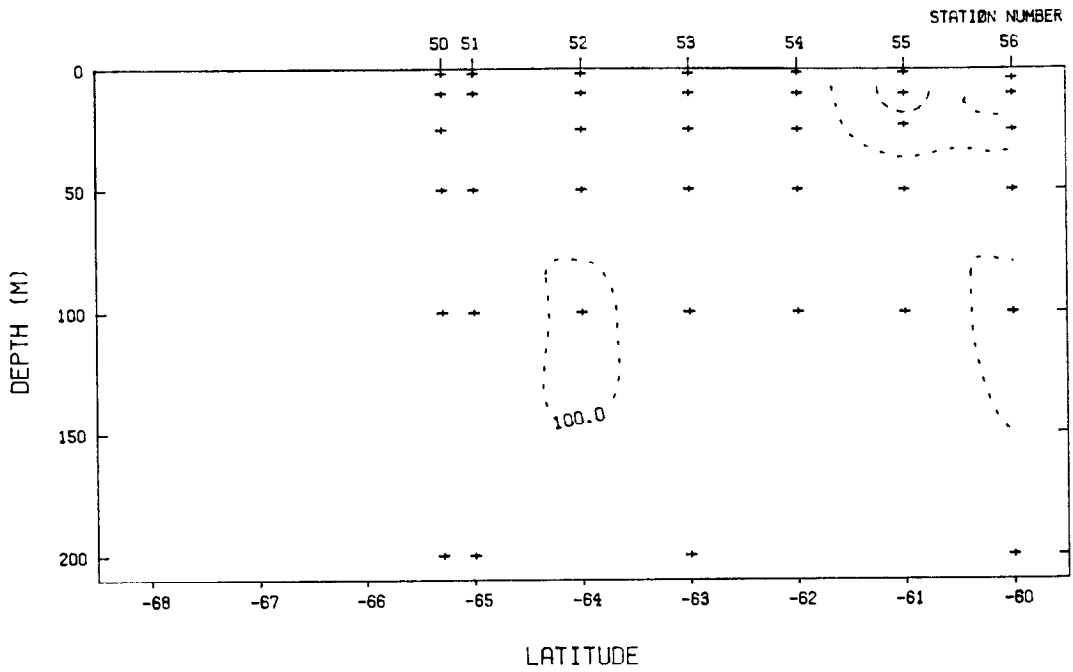
SIBEX2

%DEGRADATION - 83 DEG EAST



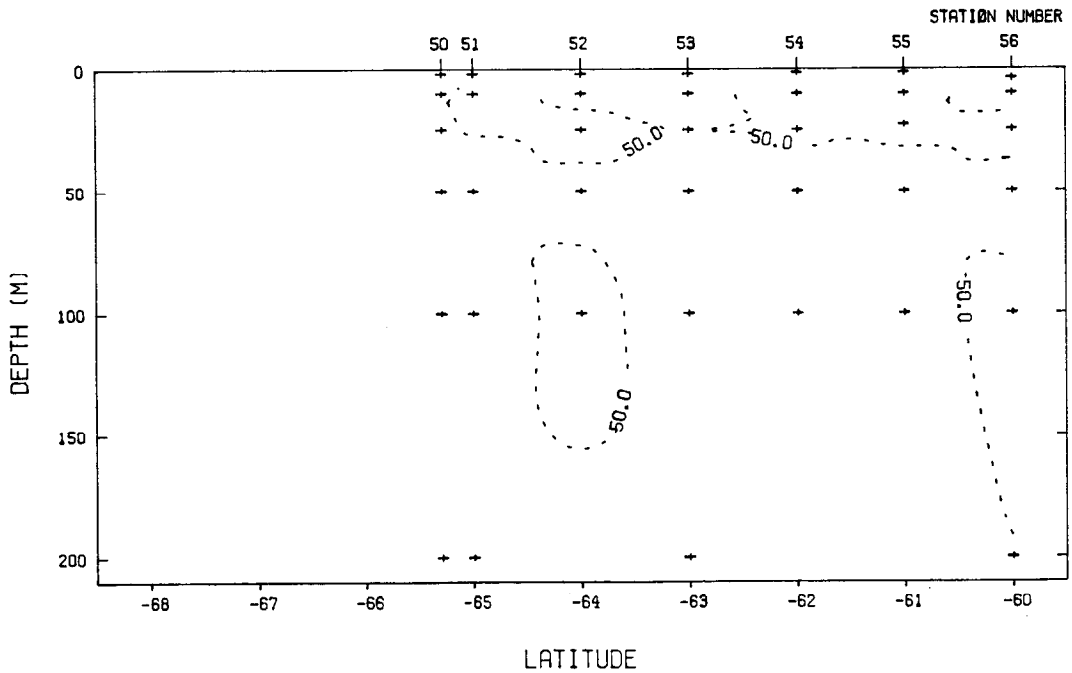
SIBEX2

FUCOXANTHIN - 83 DEG EAST



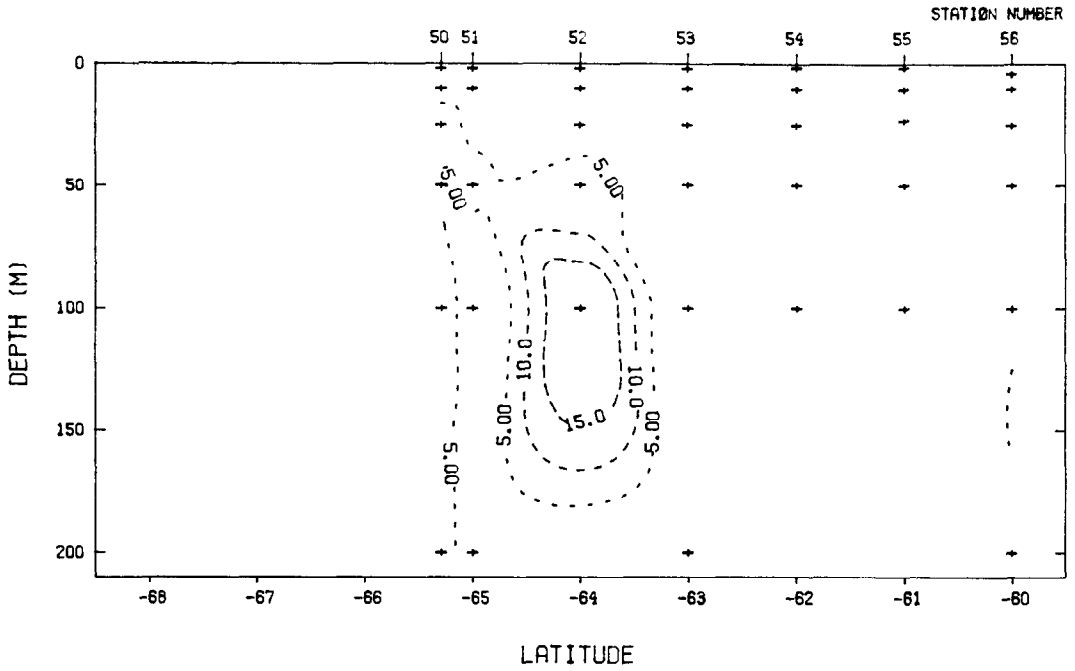
SIBEX2

19'-HEXANØYLØXYFUCOXANTHIN - 83 DEG EAST



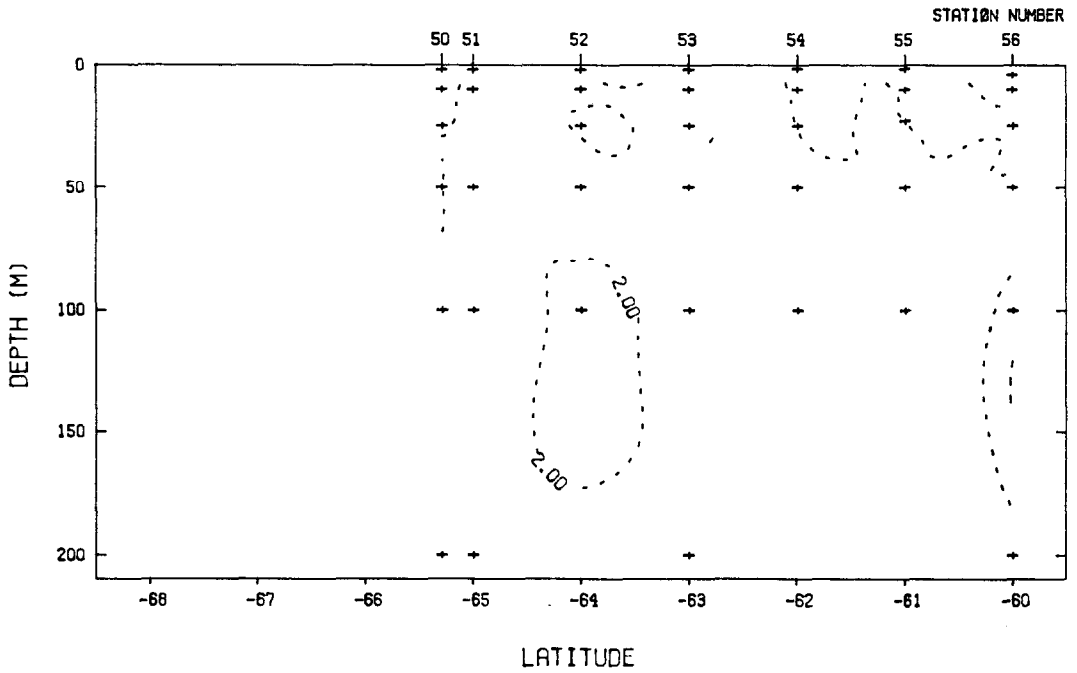
SIBEX2

FUCØX-X - 83 DEG EAST



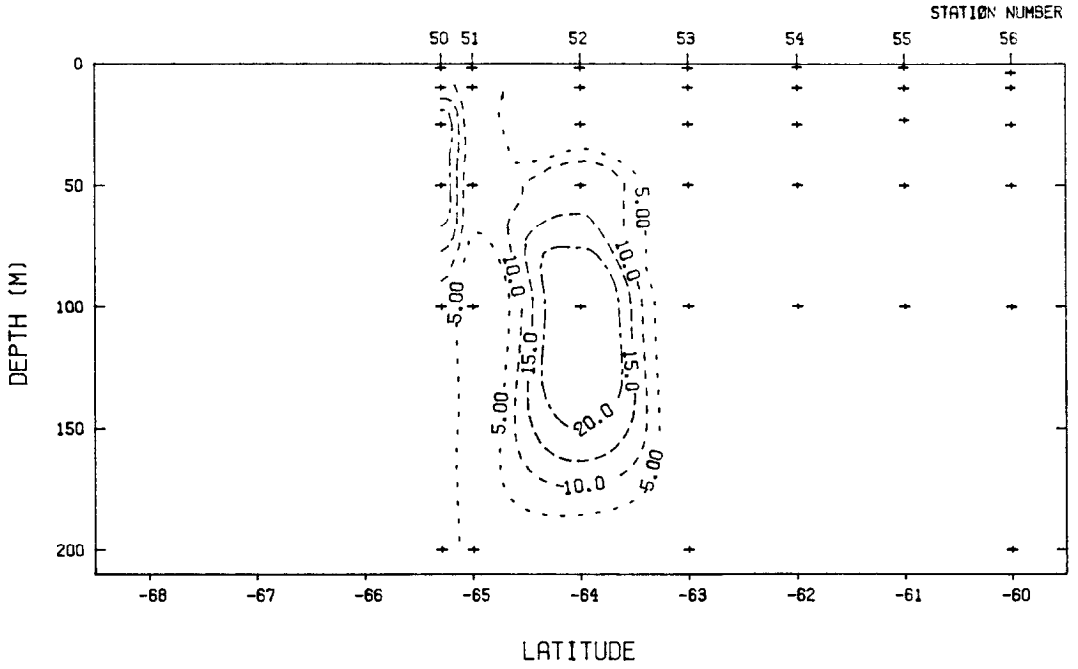
SIBEX2

ALLØXANTHIN - 83 DEG EAST



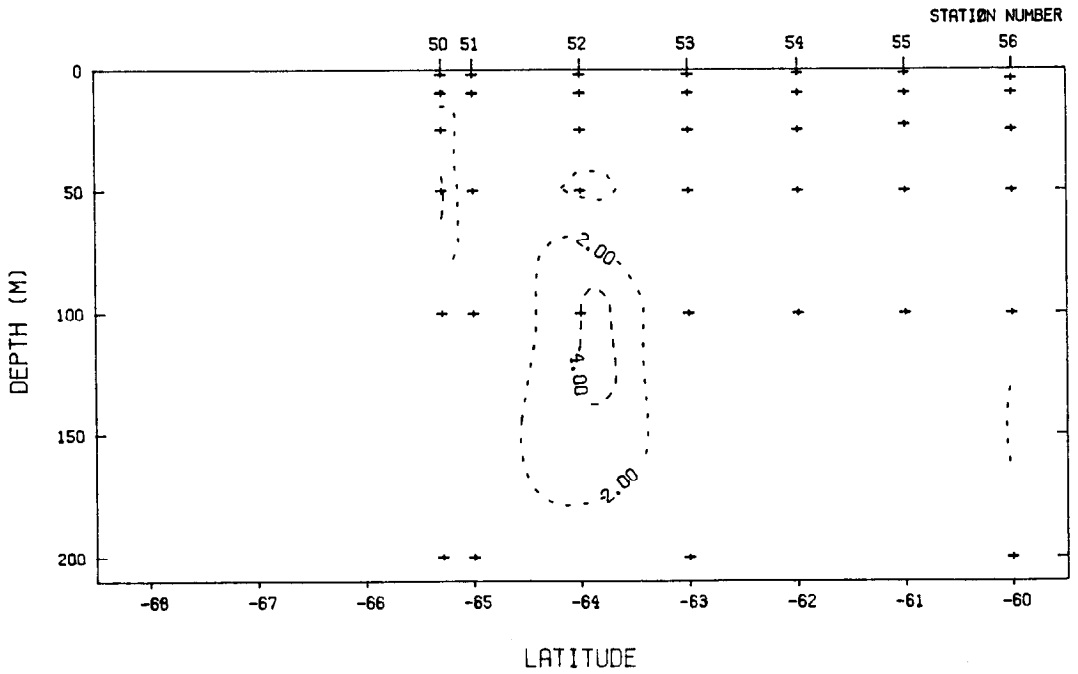
SIBEX2

CHLOROPHYLL B - 83 DEG EAST



SIBEX2

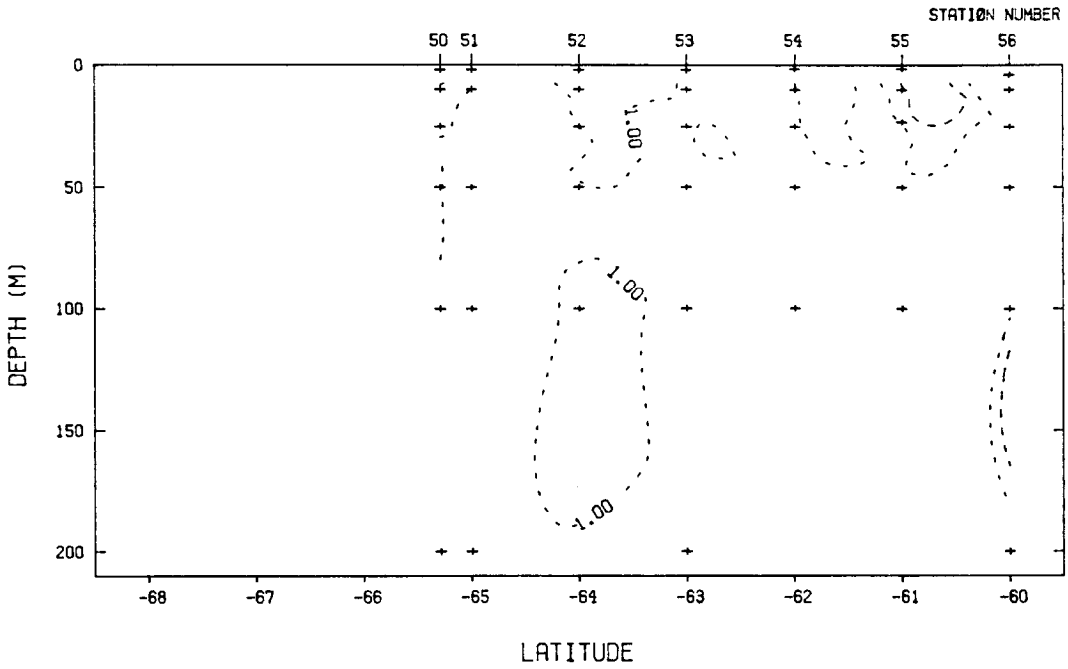
PRASINOXANTHIN - 83 DEG EAST





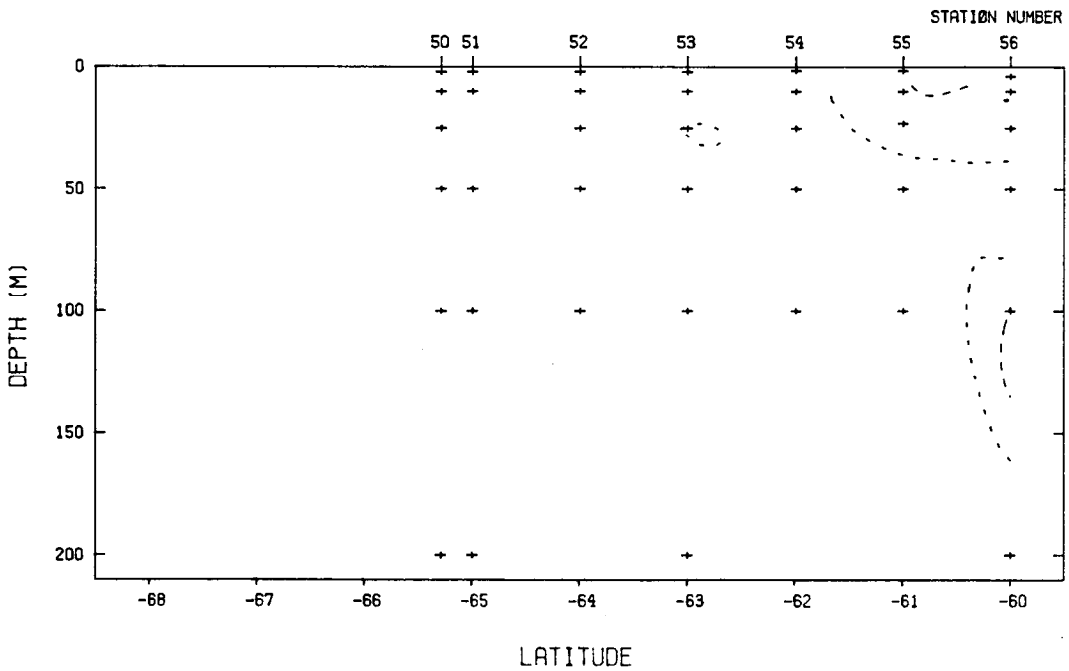
SIBEX2

Zeaxanthin - 83 DEG EAST



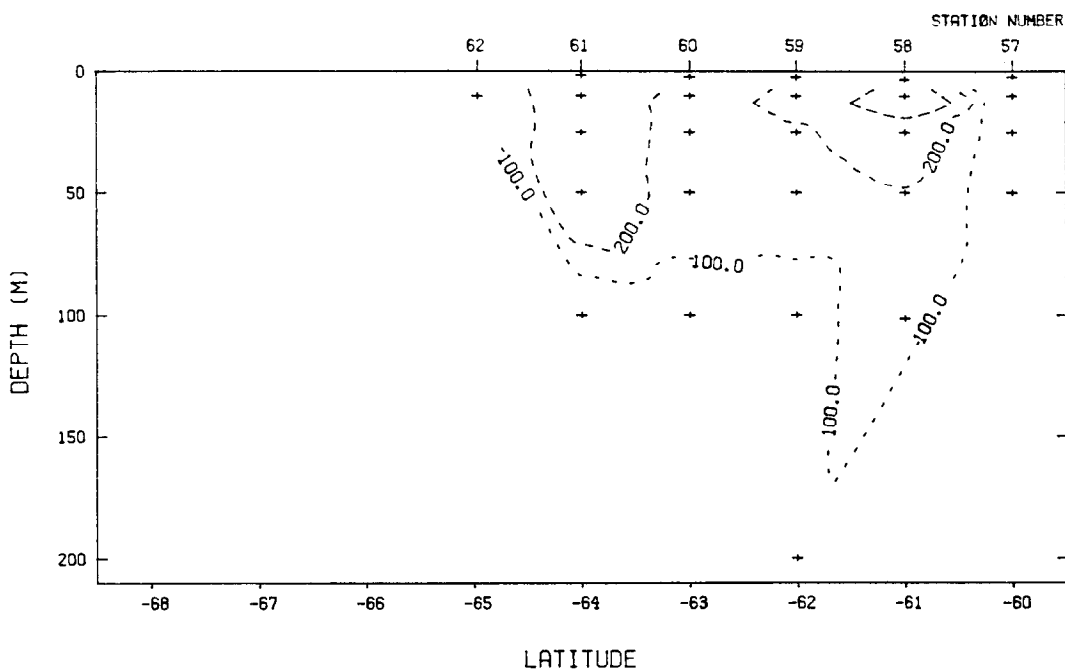
SIBEX2

Peridinin - 83 DEG EAST



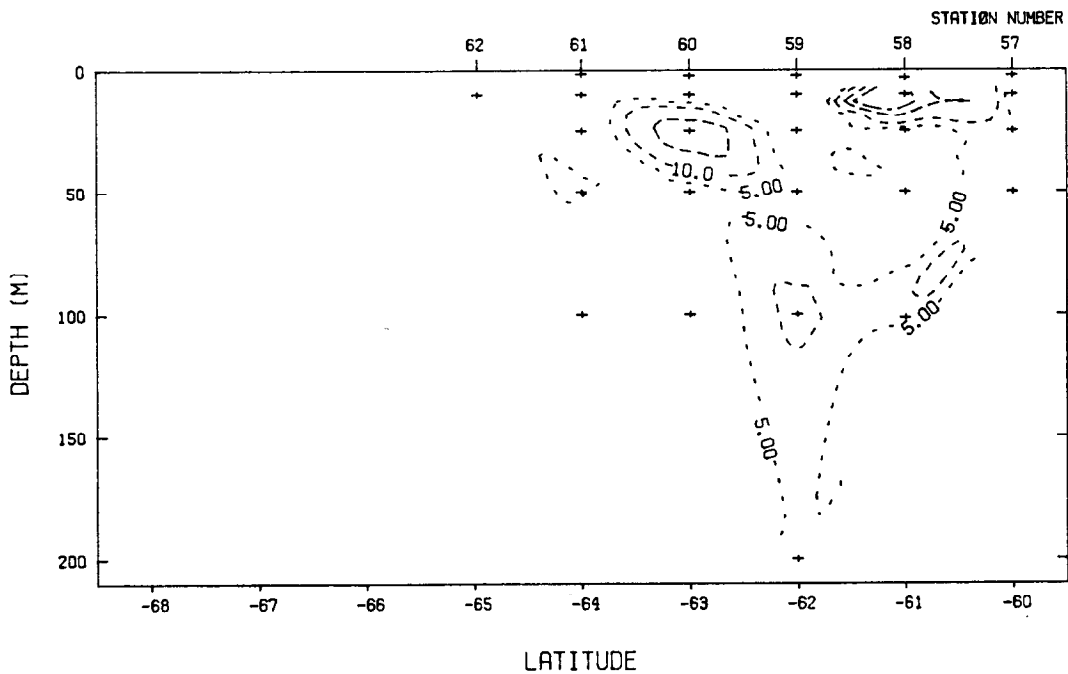
SIBEX2

CHLOROPHYLL A - 88 DEG EAST



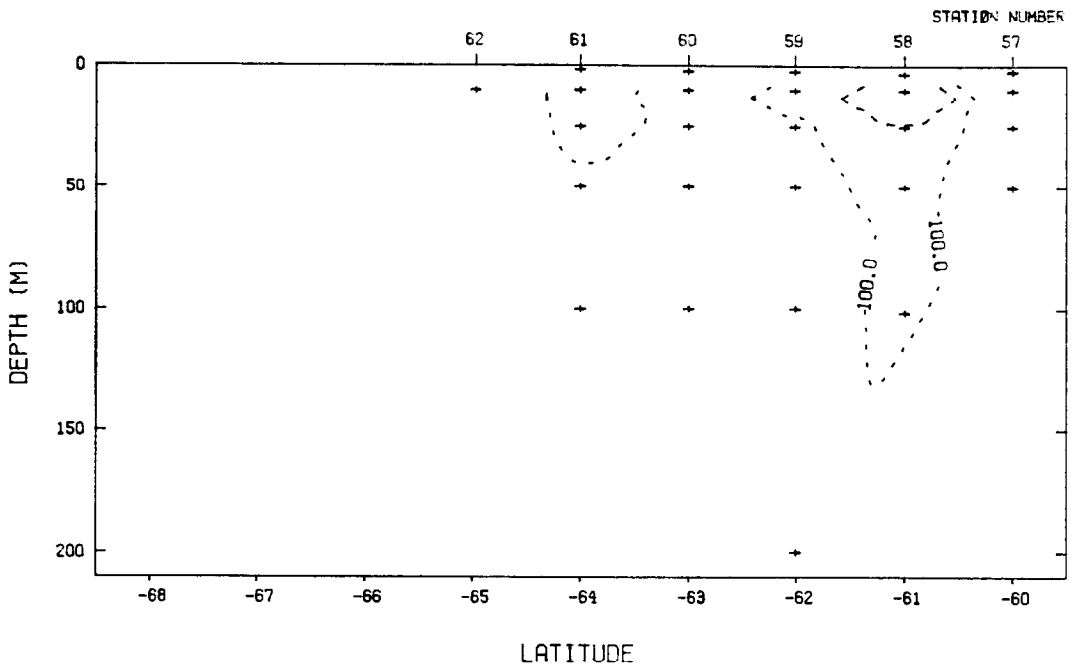
SIBEX2

%DEGRADATION - 88 DEG EAST



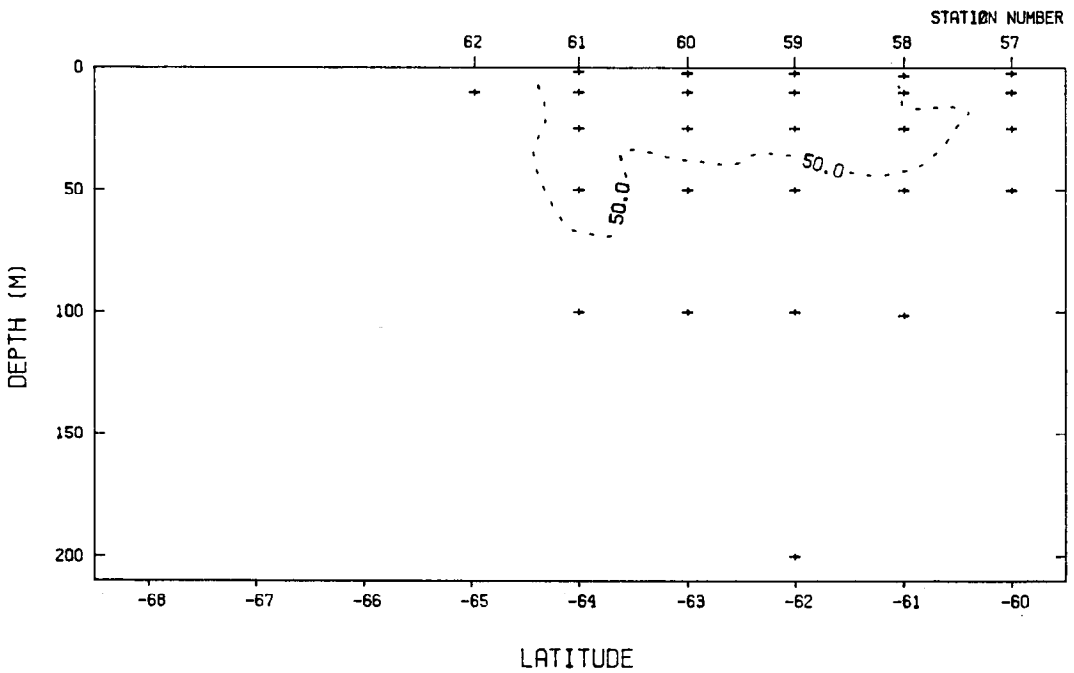
SIBEX2

FUCOXANTHIN - 88 DEG EAST



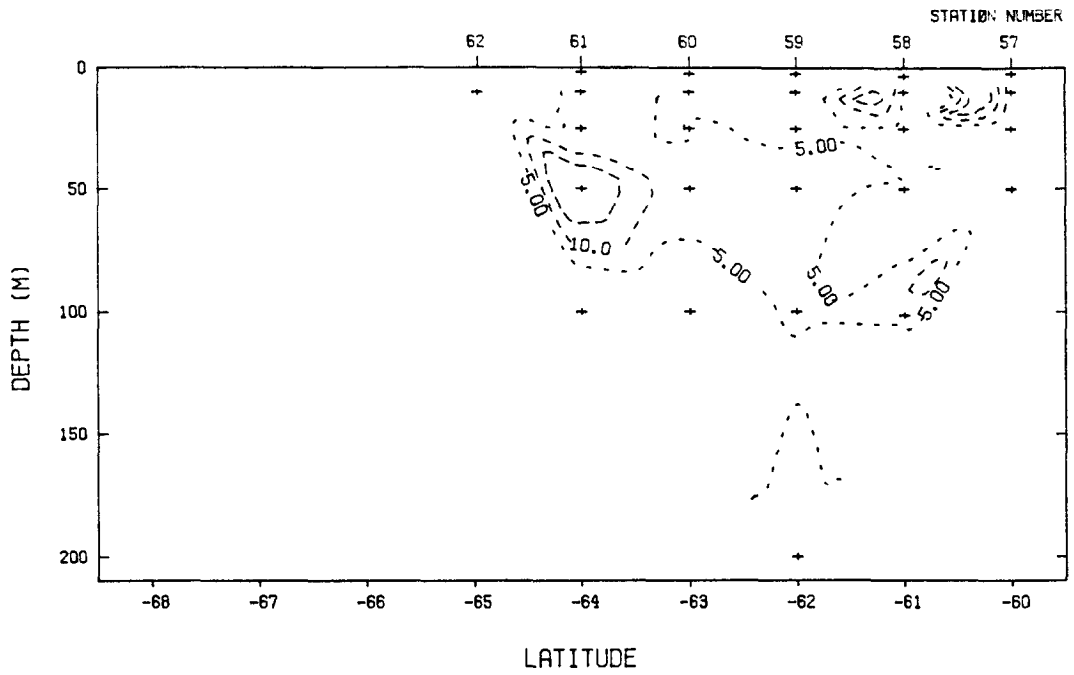
SIBEX2

19'-HEXANØYLØXYFUCOXANTHIN - 88 DEG EAST



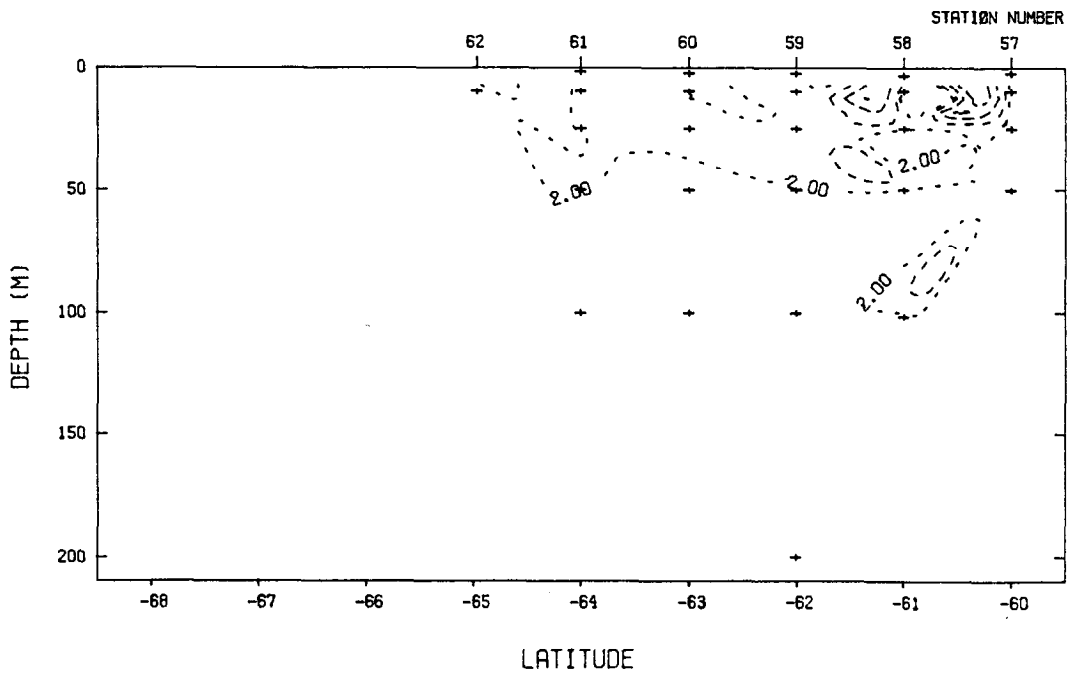
SIBEX2

FUCØX-X - 88 DEG EAST



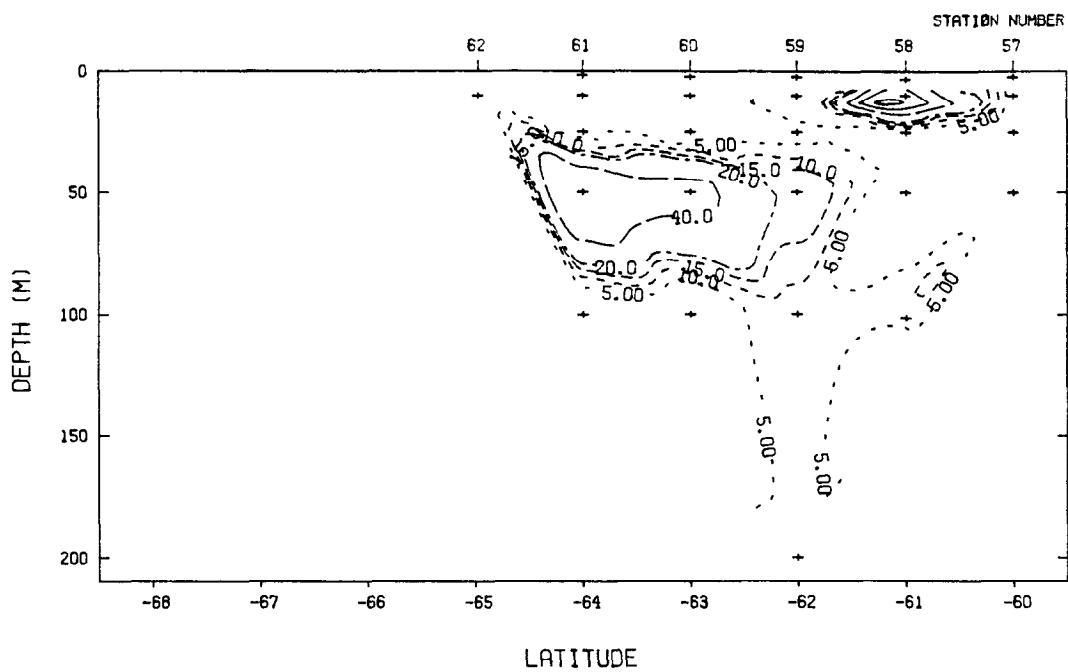
SIBEX2

ALLØXANTHIN - 88 DEG EAST



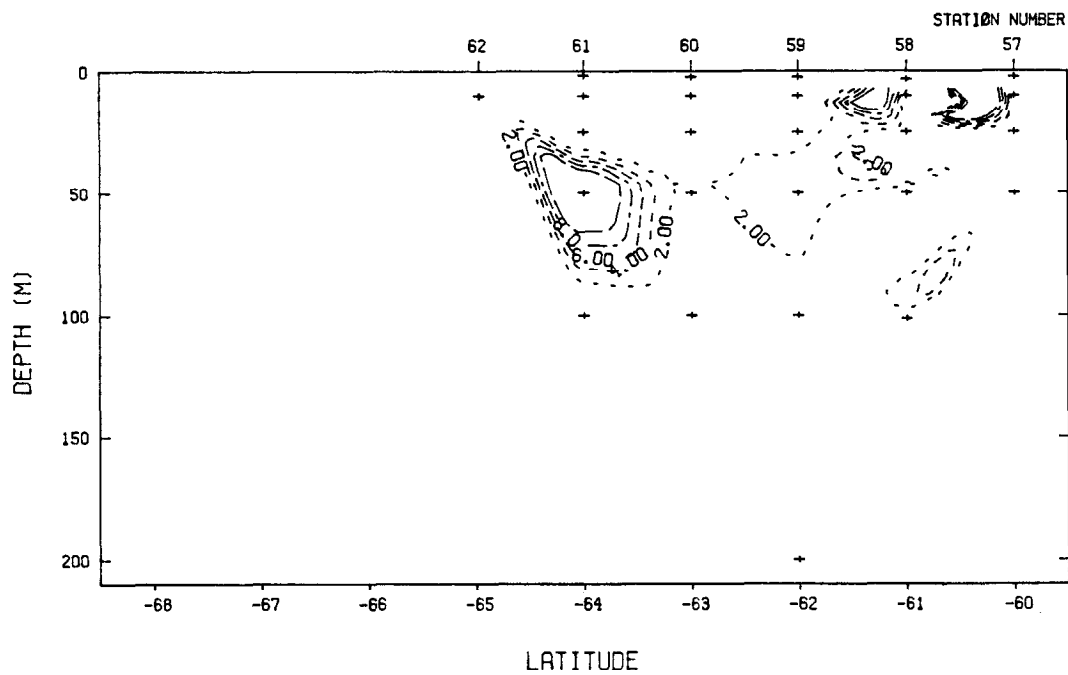
SIBEX2

CHLOROPHYLL B - 88 DEG EAST



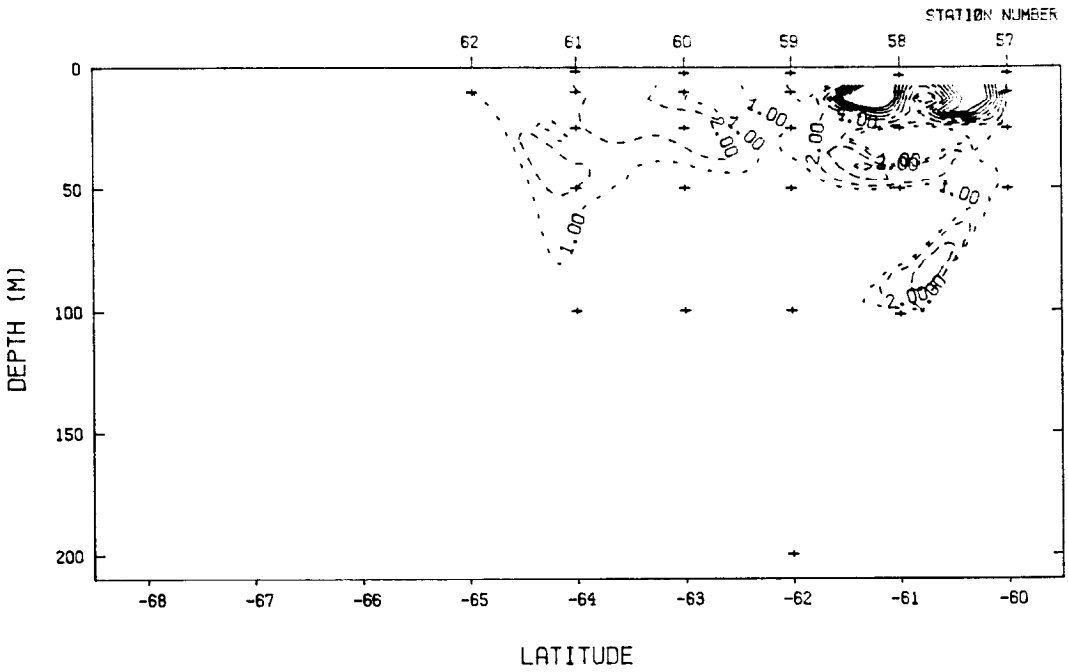
SIBEX2

PRASINOXANTHIN - 88 DEG EAST



SIBEX2

ZEAXANTHIN - 88 DEG EAST



SIBEX2

PERIDININ - 88 DEG EAST

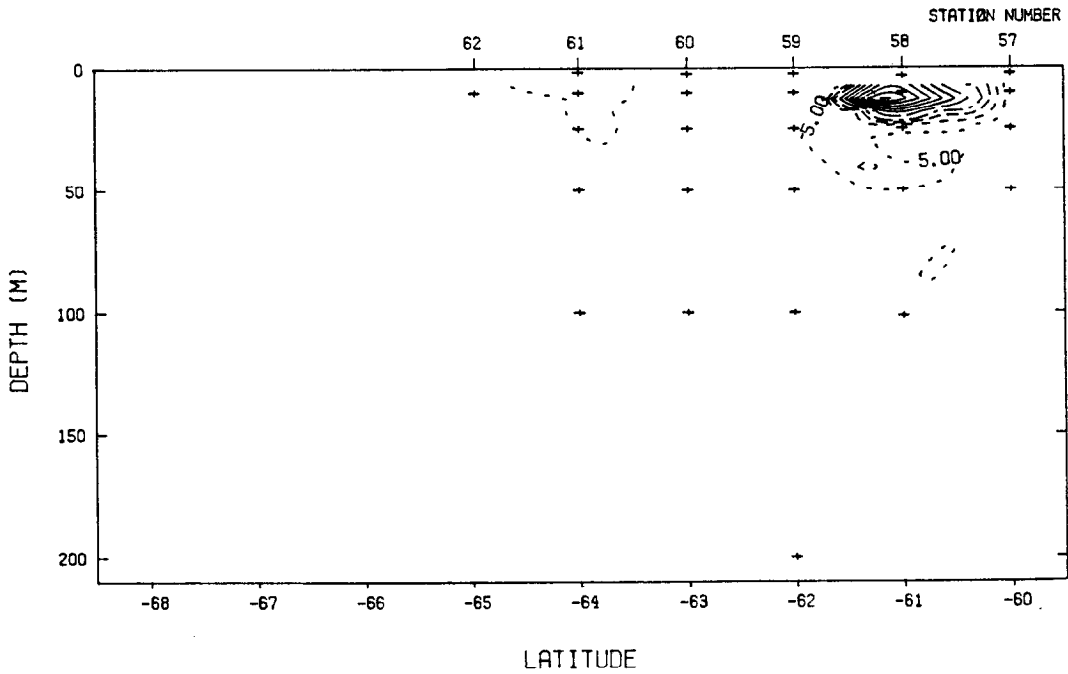
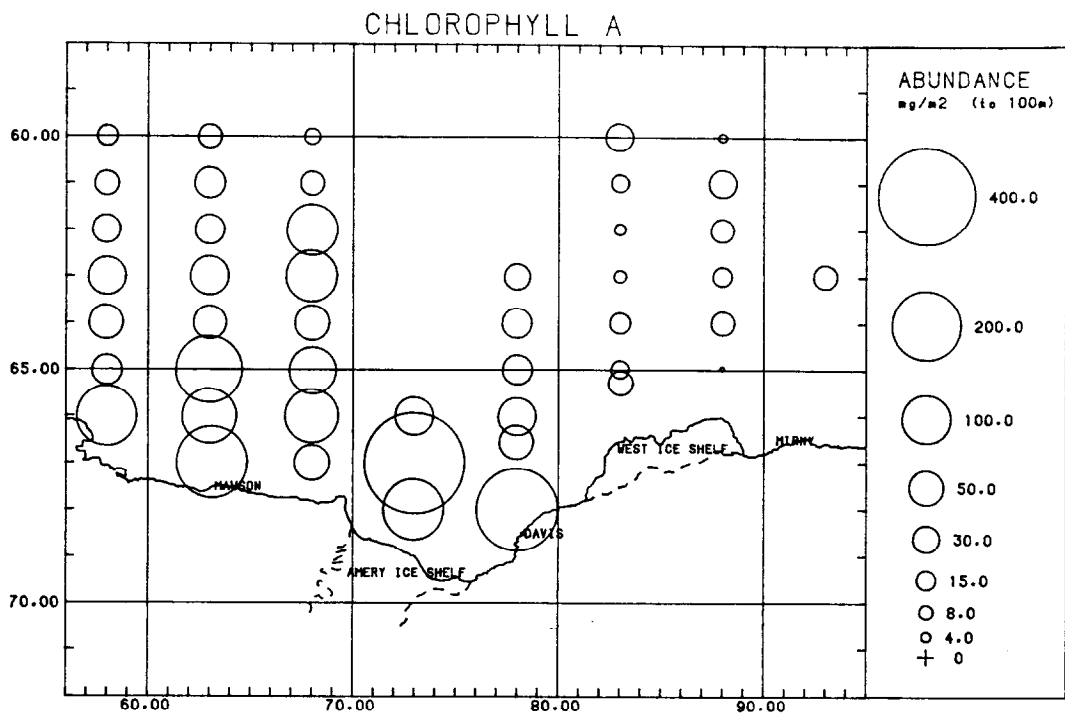
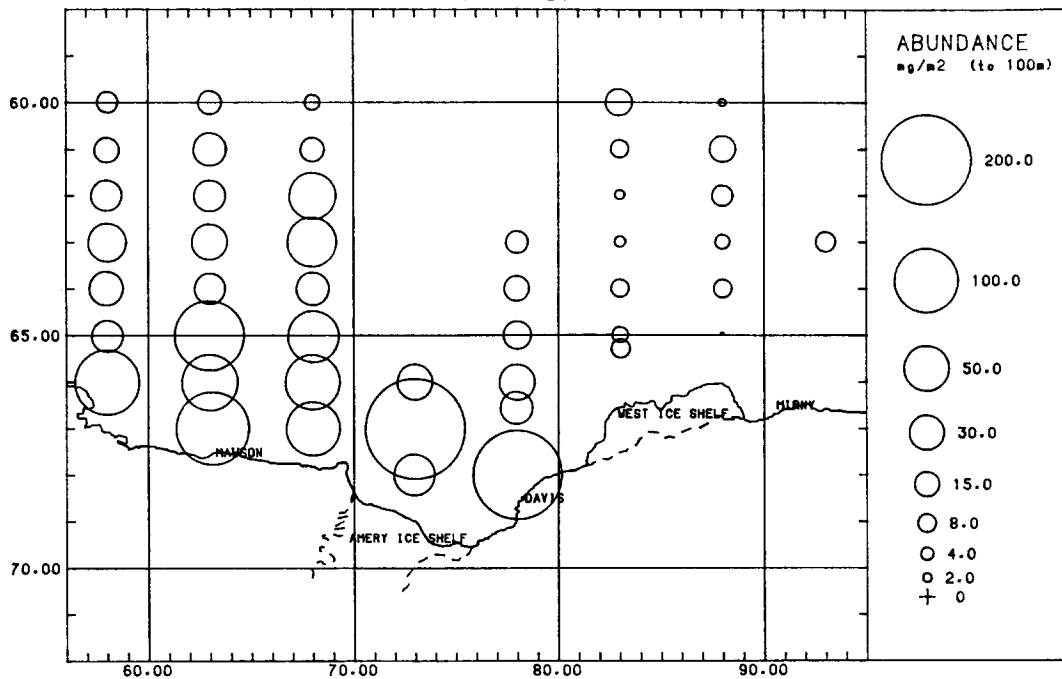


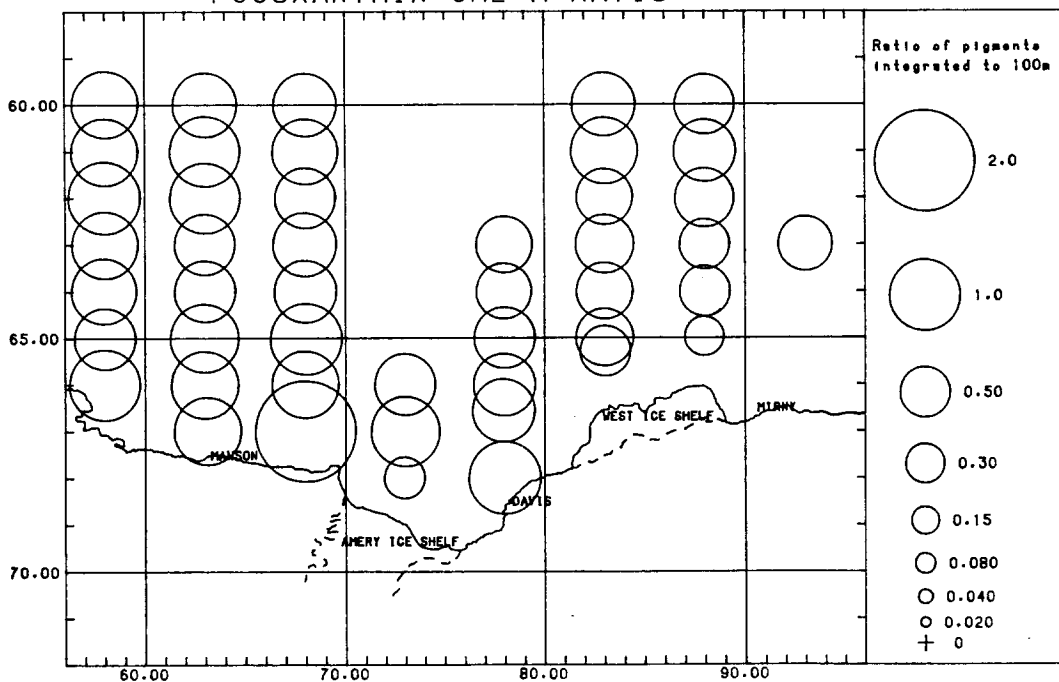
Figure 4. Geographic distribution of marker pigments and ratios of each marker pigment to chlorophyll *a* (integrated abundance for upper 100 m of water column).



### FUCOXANTHIN

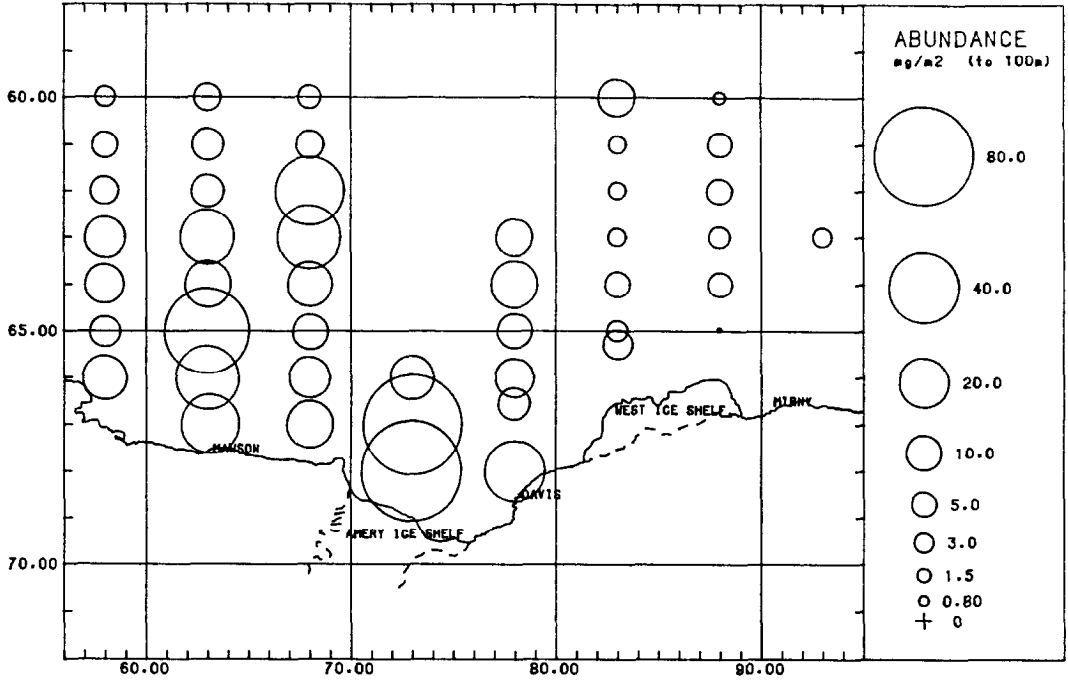


### FUCOXANTHIN:CHL A RATIO

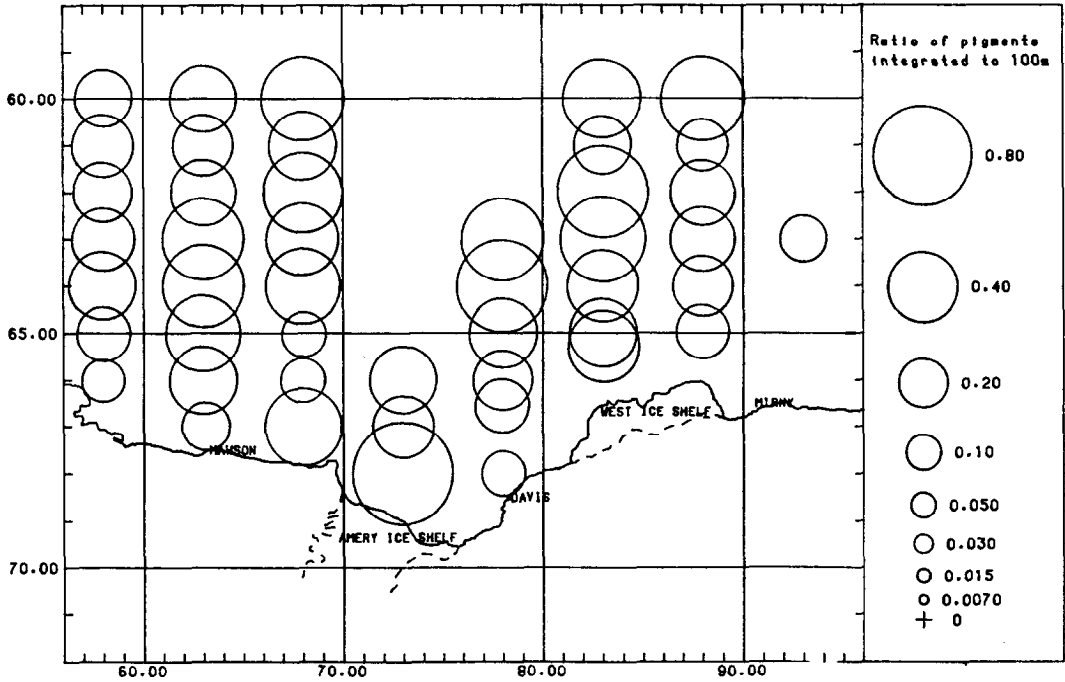




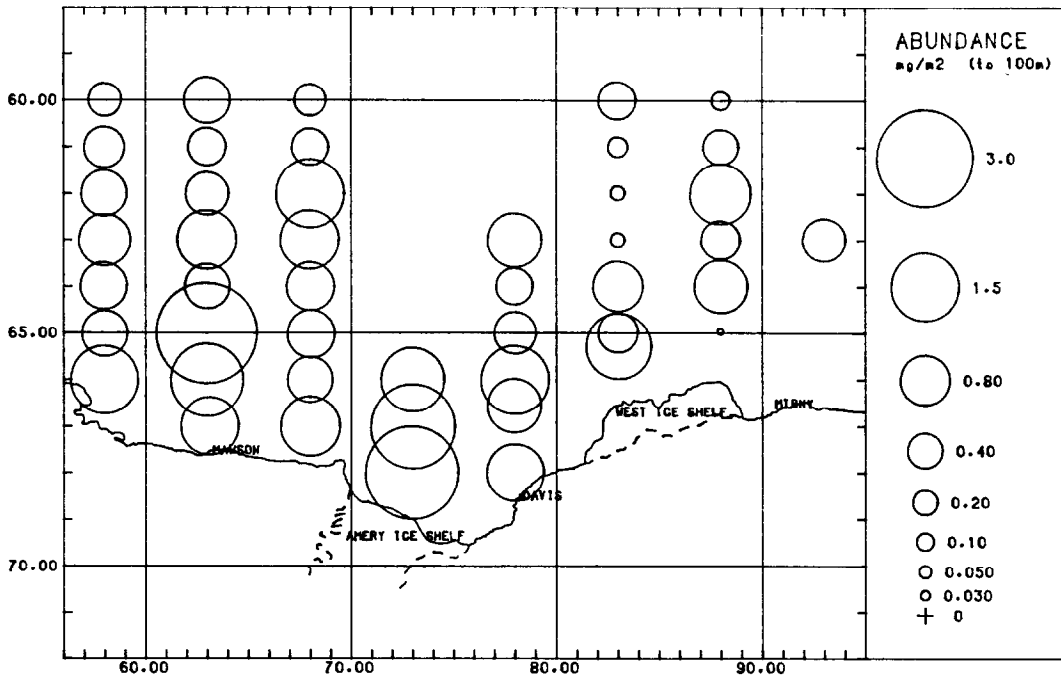
### 19-HEXFUCOXANTHIN



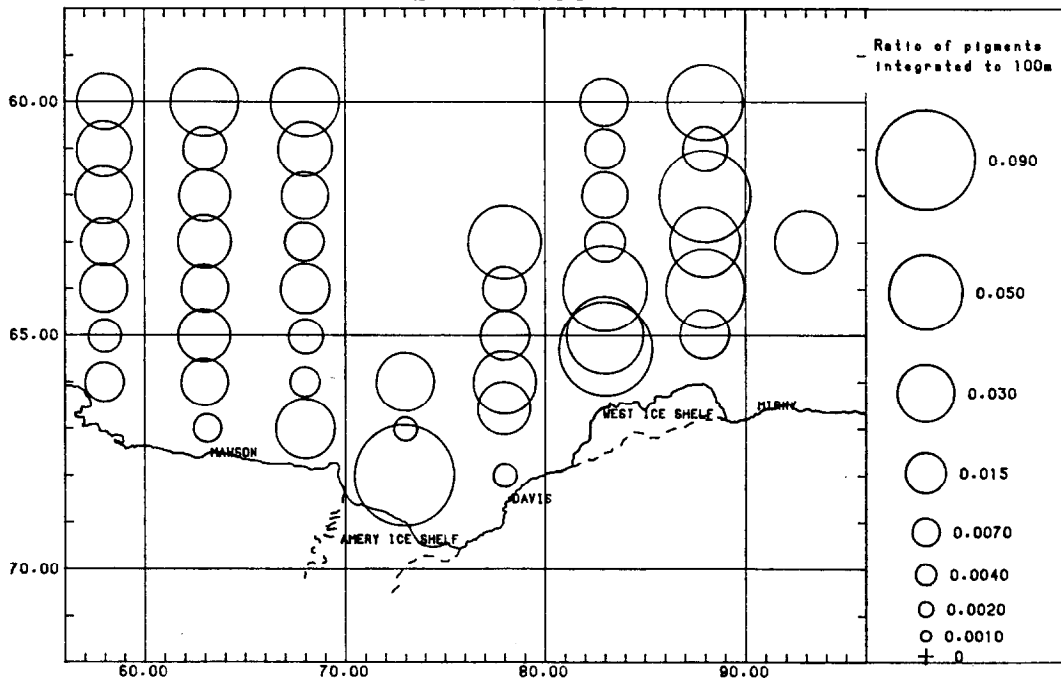
### 19-HEXFUCOXANTHIN:CHL A RATIO



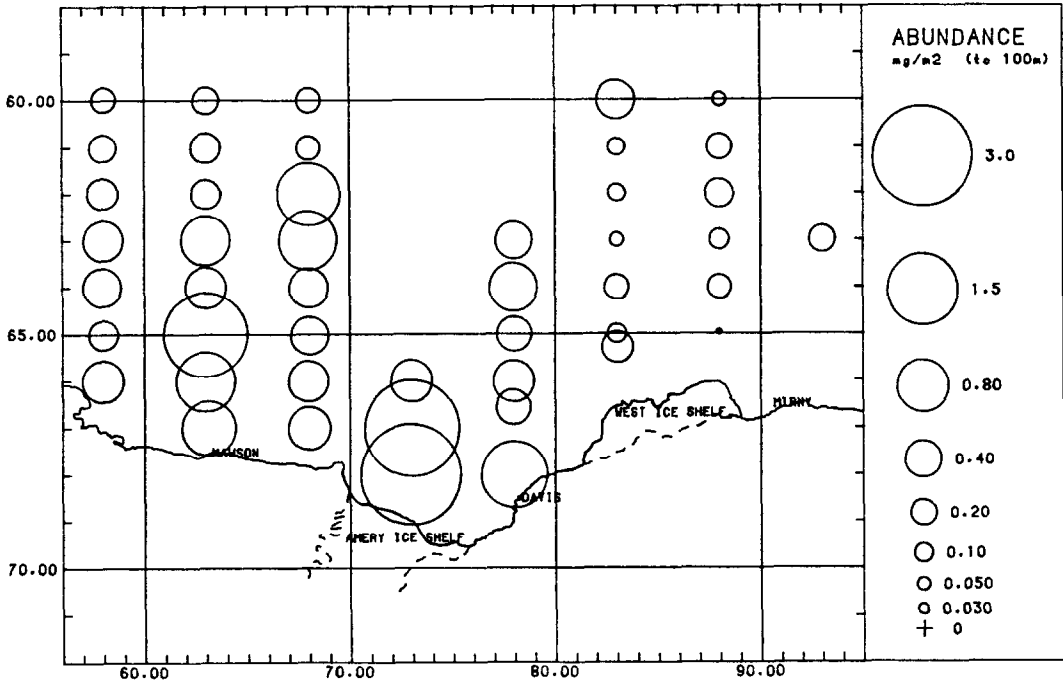
### FUCOX-X



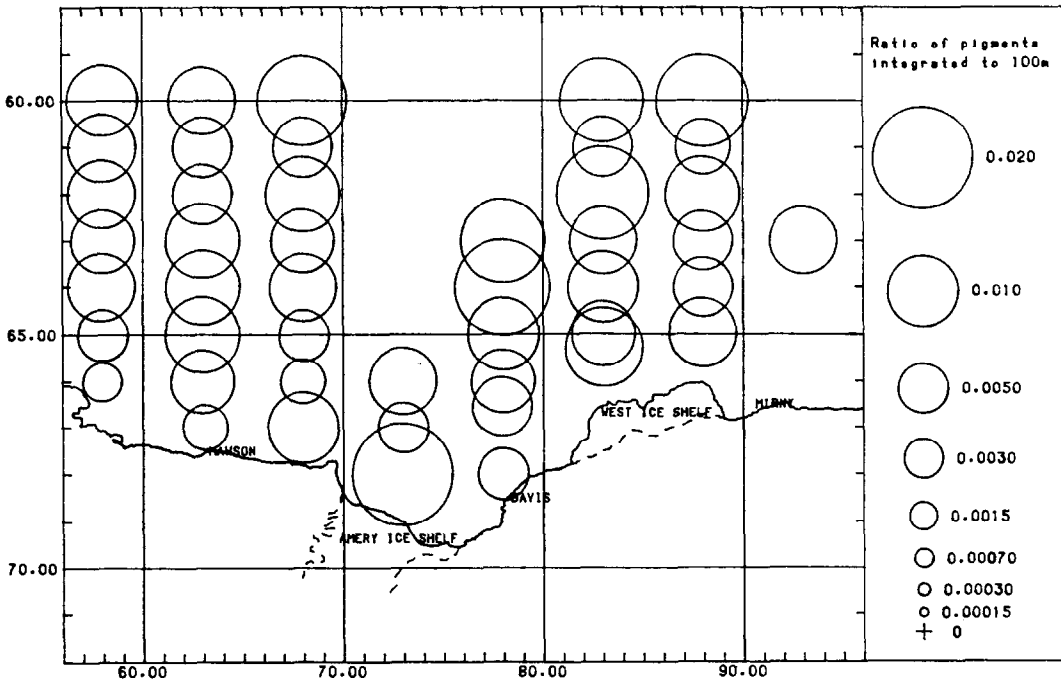
### FUCOX-X:CHL A RATIO



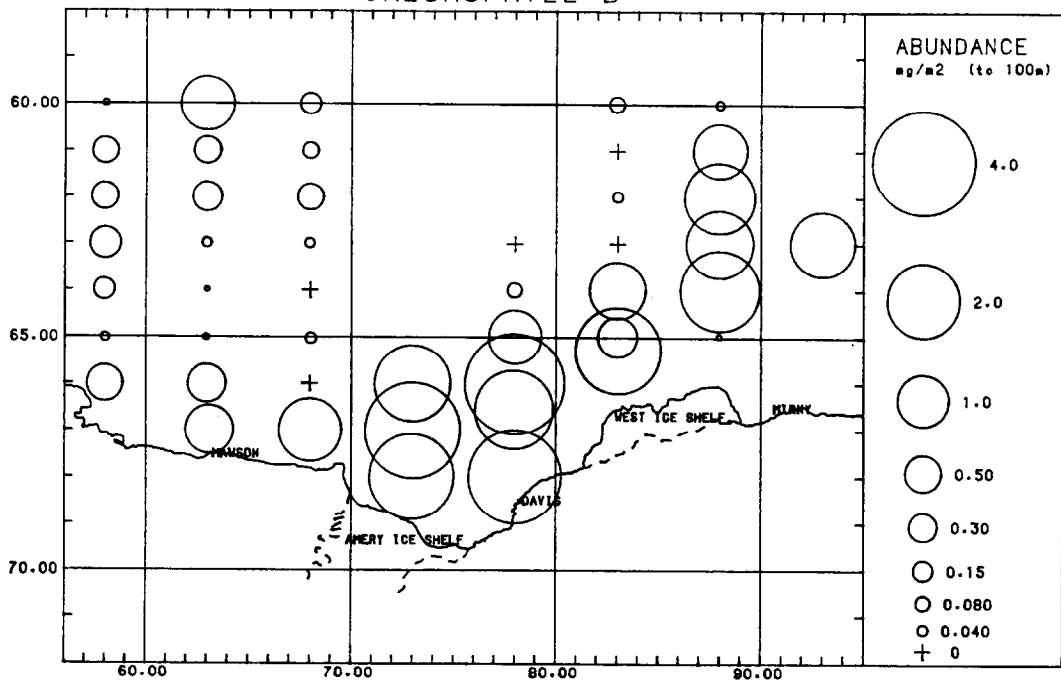
# ALLOXANTHIN



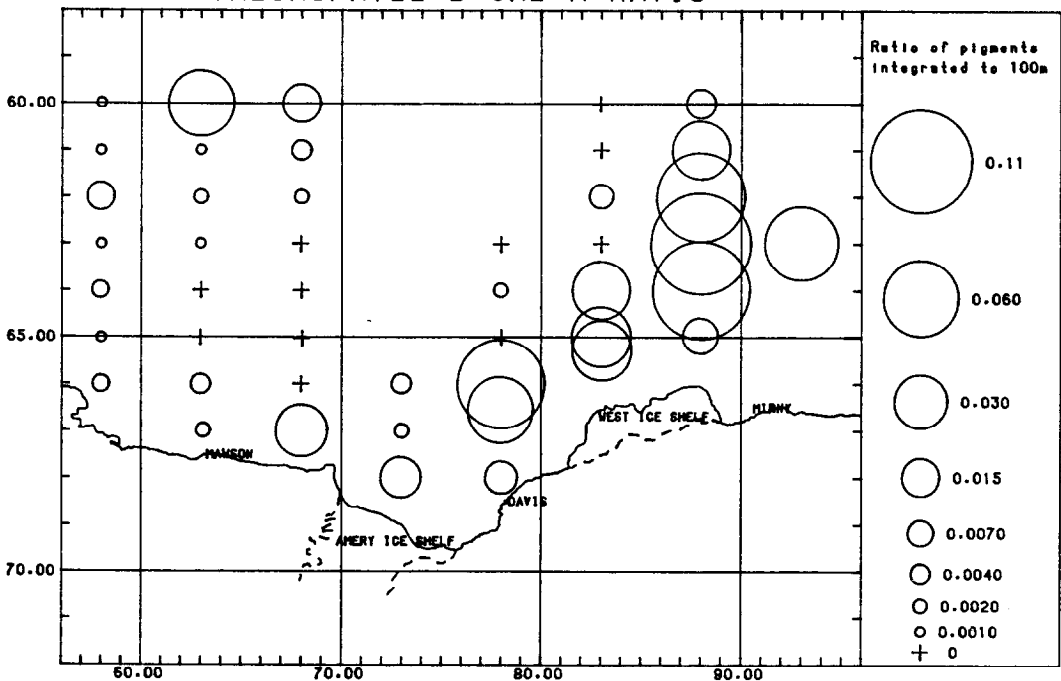
# ALLOXANTHIN:CHL A RATIO



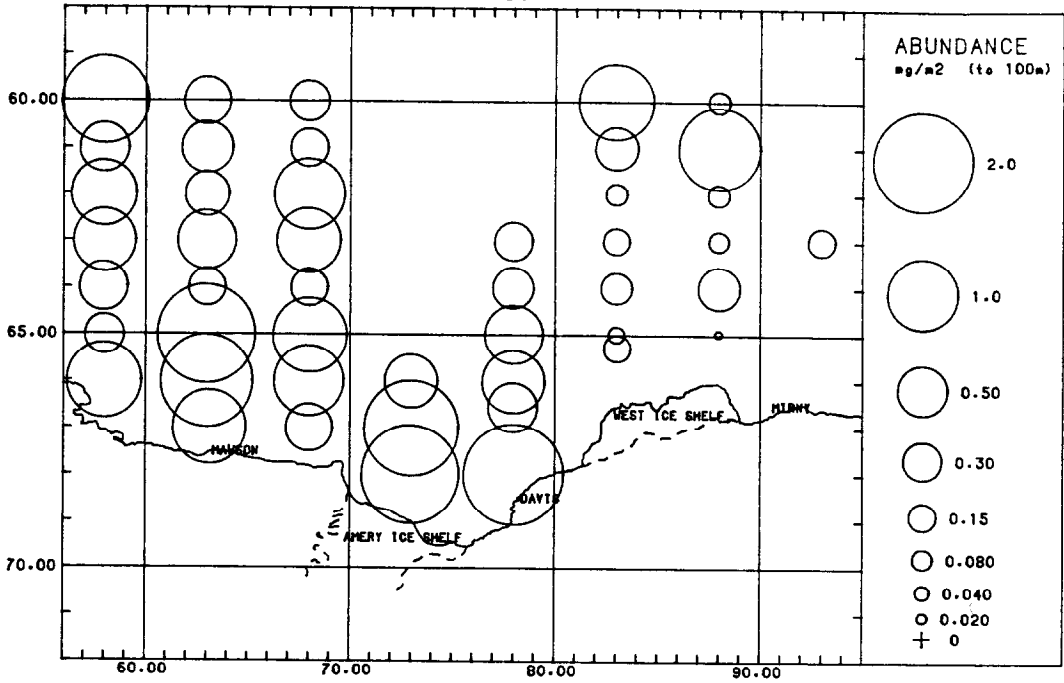
### CHLOROPHYLL B



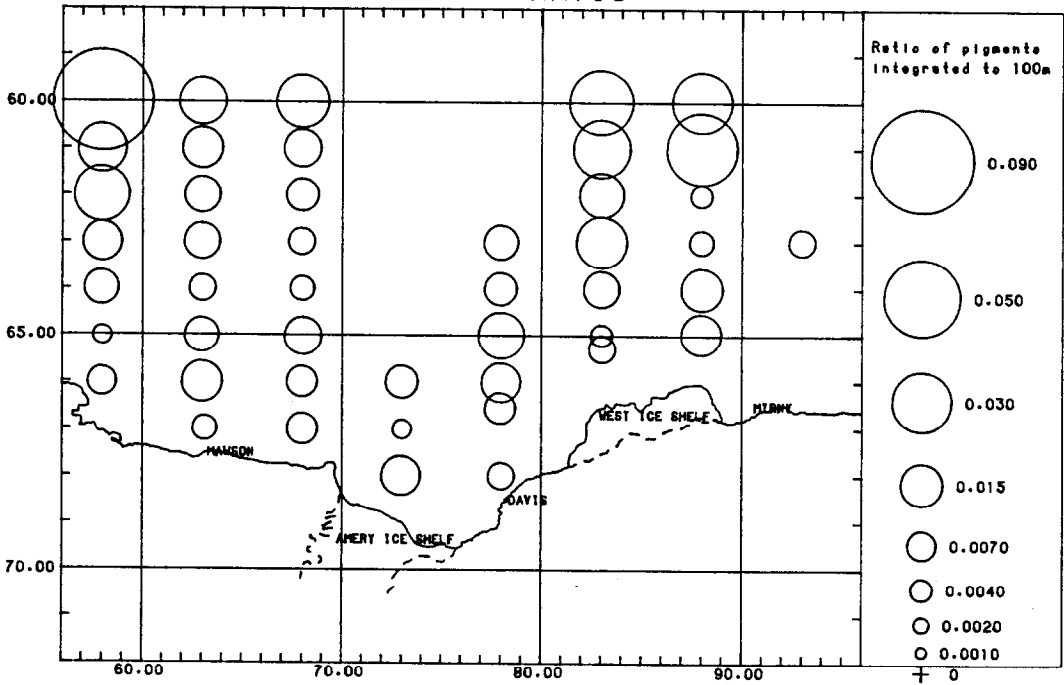
### CHLOROPHYLL B:CHL A RATIO



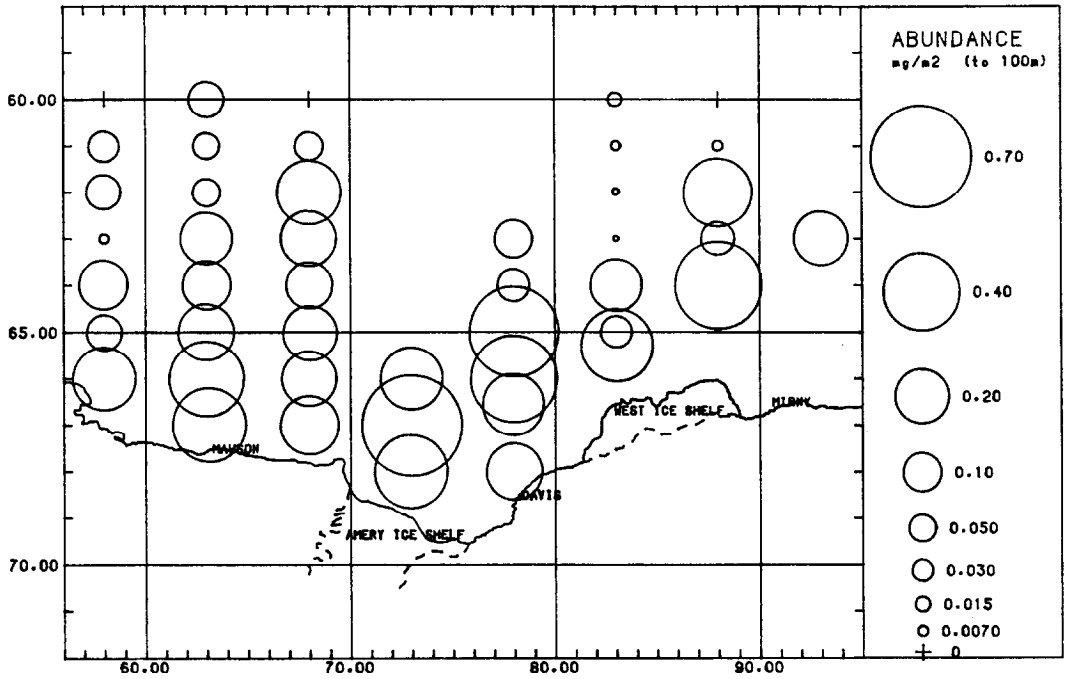
### PERIDININ



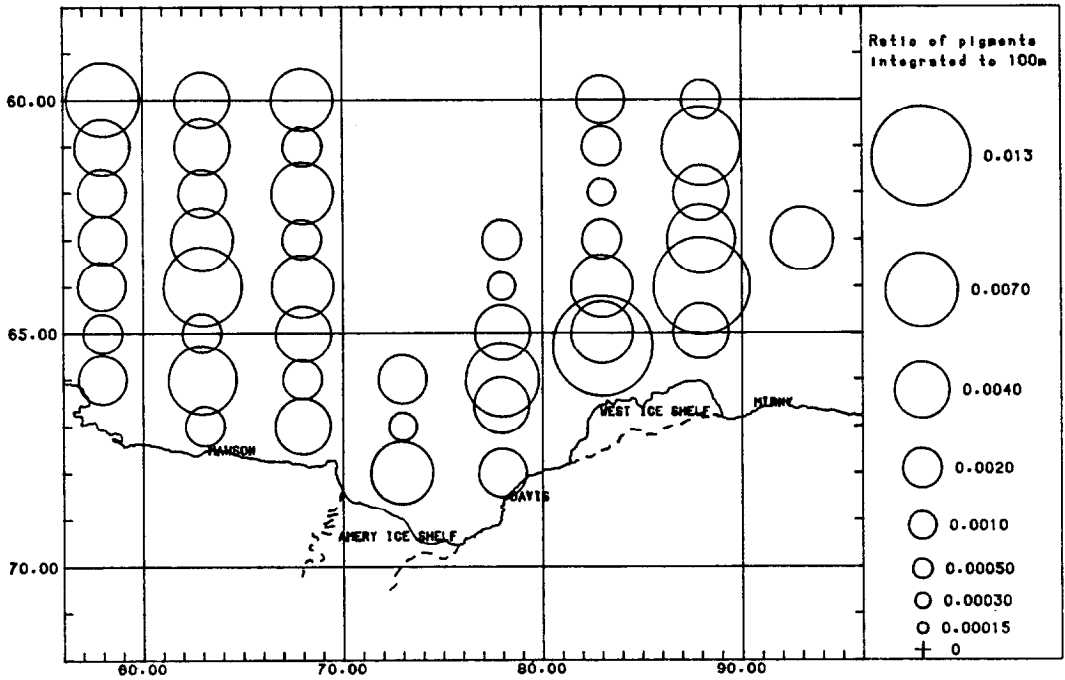
### PERIDININ:CHL A RATIO



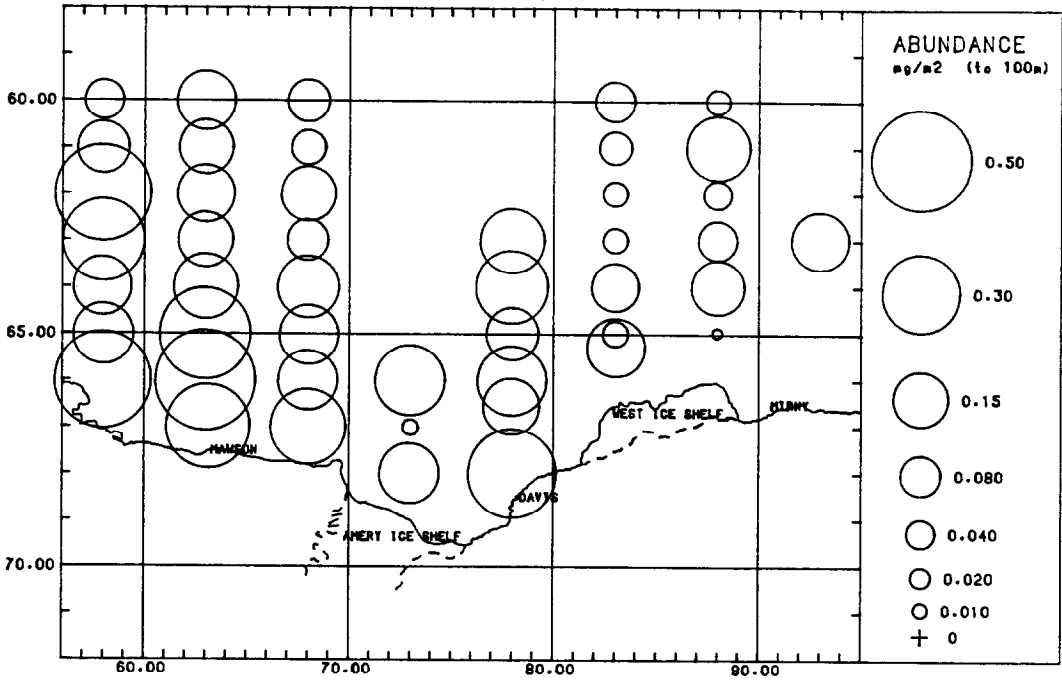
# PRASINOXANTHIN



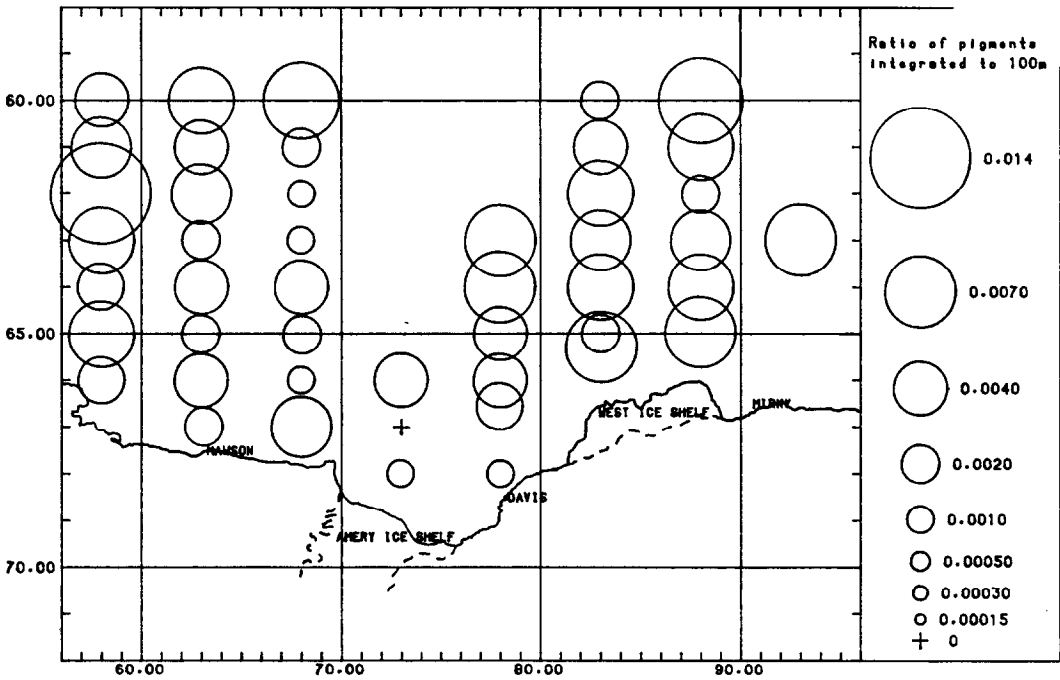
# PRASINOXANTHIN:CHL A RATIO



### ZEAXANTHIN



### ZEAXANTHIN:CHL A RATIO



## REFERENCES

- Arpin, N., Svec, W.A. and Liaaen-Jensen, S. (1977). New fucoxanthin related carotenoids from *Coccolithus huxleyi*. *Phytochemistry* 15: 529-532.
- Bjørnland, T., Pennington, F., Haxo, F.T. and Liaaen-Jensen, S. (1984). Carotenoids of Chrysophyceae and Dinophyceae - *Coc. min. Haltenbanken* and *Gymnodinium breve* (Florida red tide). *Abstracts of Seventh International IUPAC Symposium on Carotenoids, Munich*. P. 26.
- Chapman, D.J. (1966). Three new carotenoids isolated from algae. *Phytochemistry* 5: 1331-1333.
- Daley, R.J., Gray, C.B.J. and Brown, S.R. (1973). A quantitative, semiroutine method for determining algal and sedimentary chlorophyll derivatives. *Journal of the Fisheries Research Board of Canada* 30: 345-356.
- Foss, P., Guillard, R.R.L. and Liaaen-Jensen, S. (1984). Prasinoxanthin - a chemosystematic marker for algae. *Phytochemistry* 23: 1629-1633.
- Gieskes, W.W.C. and Kraay, G.W. (1983). Dominance of Cryptophyceae during the phytoplankton spring bloom in the central North Sea detected by HPLC analysis of pigments. *Marine Biology* 75: 179-185.
- Guillard, R.R.L., Murphey, L.S., Foss, P. and Liaaen-Jensen, S. (1985). *Synechococcus* spp. as a likely zeaxanthin-dominant ultraphytoplankton in the North Atlantic. *Limnology and Oceanography* 30: 412-414.
- Hager, A. and Stransky, H. (1970). The carotenoid pattern and occurrence of the light induced xanthophyll cycle in various classes of algae. V. A few members of Cryptophyceae, Euglenophyceae, Bacilliarophyceae, Chrysophyceae and Phaeophyceae. *Archiv für Mikrobiologie* 73: 77-89.
- Jeffrey, S.W. (1974). Profiles of photosynthetic pigments in the ocean using thin-layer chromatography. *Marine Biology* 26: 101-110.
- Jeffrey, S.W. and Hallegraeff, G.M. (1987). Chlorophyllase distribution in ten classes of phytoplankton: a problem for chlorophyll analysis. *Marine Ecology - Progress Series* 35: 293-304.
- Jeffrey, S.W. and Wright, S.W. (in press). A new spectrally distinct component in preparations of chlorophyll *c* from the micro-alga *Emiliana huxleyi* (Prymnesiophyceae). *Biochimica et Biophysica Acta* .
- Kerry, K.R., Woehler, E.J. and Robb, M.S. (1987). Oceanographic data: Prydz Bay region SIBEX II, MV *Nella Dan*, January 1985. *ANARE Research Notes Number 53*. Antarctic Division, Kingston.
- Liaaen-Jensen, S. (1977). Algal carotenoids and chemosystematics. In: Faulkner, D.J. and Fenical, W.M. (Eds). *Marine Natural Products Chemistry*. Pp. 239-259.
- Wright, S.W. and Jeffrey, S.W. (1987). Fucoxanthin pigment markers of marine phytoplankton analysed by HPLC and HPTLC. *Marine Ecology - Progress Series* 38.



Wright, S.W. and Shearer, J.D. (1984). Rapid extraction and high-performance liquid chromatography of chlorophylls and carotenoids from marine phytoplankton. *Journal of Chromatography* 294: 281-295.

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52. K.R. Kerry and E.J. Woehler (1987). Oceanographic data: Prydz Bay region - Antarctic Division BIOMASS Experiment I, MV *Nella Dan*, November-December 1982.
53. K.R. Kerry, E.J. Woehler and M.S. Robb (1987). Oceanographic data: Prydz Bay region - SIBEX II, MV *Nella Dan*, January 1985.
54. E.J. Woehler, K.R. Kerry, S.E. Humphries and M.S. Robb (1987). Oceanographic data: Enderby Land region - Antarctic Division BIOMASS Experiment III, MV *Nella Dan*, September-December 1985.
55. M.J. Tucker and H.R. Burton (1987). A survey of the marine fauna in shallow coastal waters of the Vestfold Hills and Rauer Islands, Antarctica.
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