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OCEANOGRAPHIC OBSERVATIONS IN THE  
GEORGIA BIGHT: DATA REPORT FOR  
R. V. EASTWARD CRUISES E-3-74  
(24-30 April 1974) and E-12-74  
(23-31 July 1974)

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#### ABSTRACT

Data from Cruise E-3-74 (24-30 April 1974) and Cruise E-12-74 (23-31 July 1974) of the R. V. EASTWARD in the Georgia Bight are presented. Included are the NODC station printouts with the following data: depth, temperature, salinity, oxygen, phosphate, nitrate, silicate, dissolved organic carbon, weather, ship's position, station time and depth. Biological data include: chlorophyll, carbon-<sup>14</sup> primary productivity, particulate carbon and nitrogen, principal zooplankton species and main benthic macroinvertebrates. Sediment size analysis and mercury analysis are also included.

## TABLE OF CONTENTS

Acknowledgments . . . . .	i
List of Figures . . . . .	ii
List of Table . . . . .	ii
Introduction . . . . .	1
Disposition of Data . . . . .	6
Methods . . . . .	6
References . . . . .	8

### Appendices

#### Appendix A - Data from Cruise E-3-74

Runoff and Weather . . . . .	11
Hydrographic Data . . . . .	12
Surface Drifter Data . . . . .	53
Chlorophyll and Carbon- <sup>14</sup> Productivity Data . . . . .	54
Particulate Organic Carbon and Particulate Nitrogen . . . . .	60
Mercury . . . . .	61
Sediment . . . . .	63
Surface Observation Log . . . . .	64

#### Appendix B - Data from Cruise E-12-74

Runoff and Weather . . . . .	66
Hydrographic Data . . . . .	67
Surface Drifter Data . . . . .	116
Chlorophyll and Carbon- <sup>14</sup> Productivity Data . . . . .	117
Particulate Organic Carbon and Particulate Nitrogen . . . . .	122
Surface Observation Log . . . . .	123

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Zooplankton	Dr. Lowell Sick
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Benthos	Dr. John Kraeuter
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### E-3-74

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## LIST OF FIGURES

1. Station Locations

## LIST OF TABLES

1. List of Stations
2. Analytical Methods

### Appendix A

1. River Flow Data for Principal Rivers
2. Chlorophyll  $a$  and  $C^{14}$  Uptake with Respect to Depth
3. Surface Chlorophyll  $a$ , Depth Integrated Chlorophyll  $a$  and  $C^{14}$  Values
4. Particulate Organic Carbon and Nitrogen
5. Dissolved Mercury Data
6. Mean Grain Size, Sorting, Skewness and Kurtosis for Sediments

### Appendix B

1. Runoff Data for Principal Rivers
2. Chlorophyll  $a$  and  $C^{14}$  Uptake with Respect to Depth
3. Surface Chlorophyll  $a$ , Depth Integrated Chlorophyll  $a$  and  $C^{14}$  Values
4. Particulate Organic Carbon and Nitrogen

## INTRODUCTION

As part of a study of the biology, chemistry, physics and geology of the Georgia Bight and its waters, a survey of the area was made in April and July 1974, on board the R. V. EASTWARD (Cruises E-3-74 and E-12-74). The stations are shown in Figure 1. All data available from Cruises E-3-74 and E-12-74 are shown in Appendices A and B, respectively.

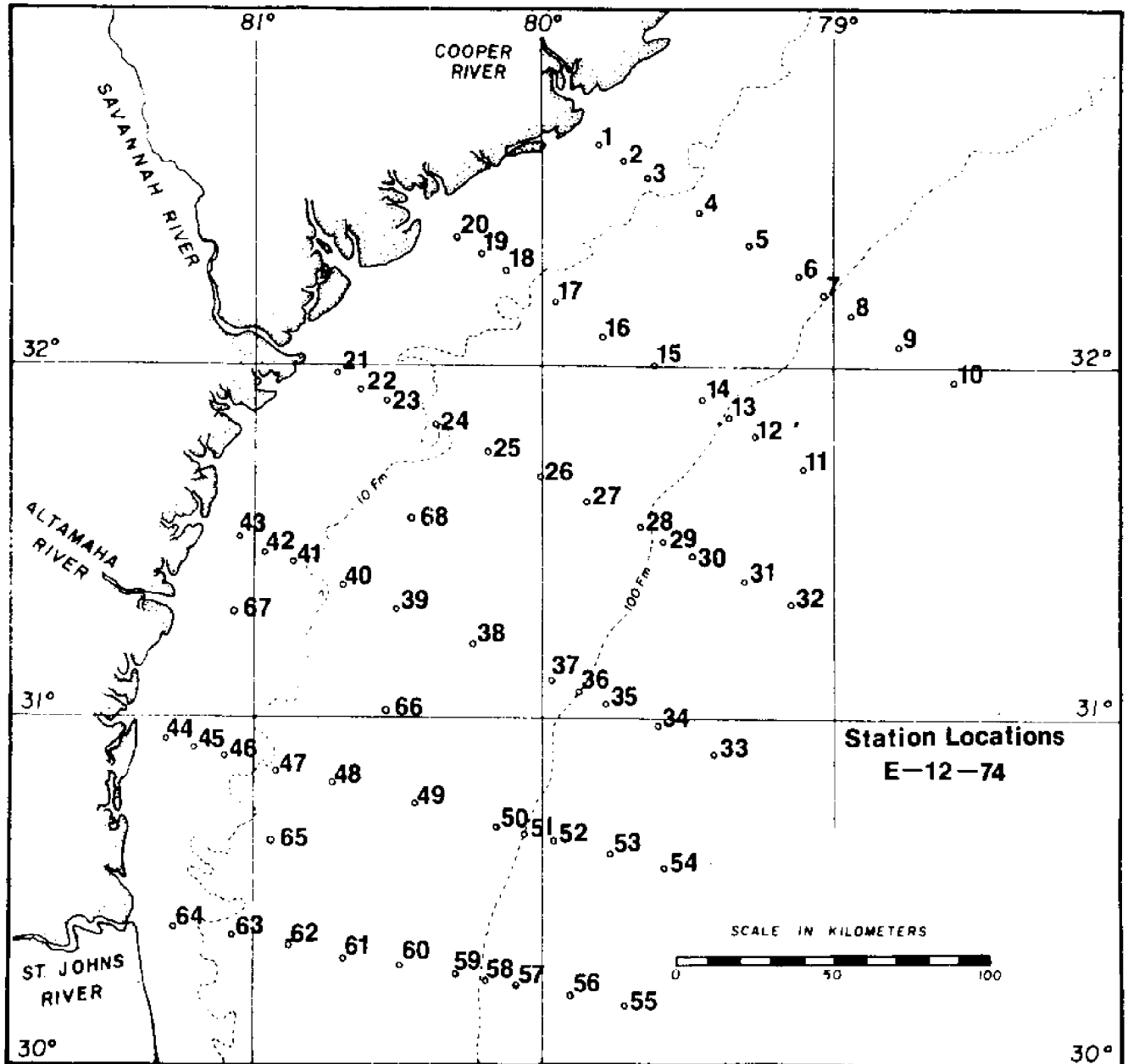


Figure 1

Table 1. Station List.

STATION SUMMARY FOR EASTWARD CRUISE E-3-74										
STATION	LATITUDE		LONGITUDE		YR	MO	DAY	HOUR	DEPTH M	CONSEC NUMBER
1	32	37.7N	79	47.6W	74	4	24	21.7	3	1
2	32	25.0N	79	42.7W	74	4	24	23.5	17	2
3	32	32.5N	79	38.2W	74	4	25	.6	20	3
4	32	27.0N	79	28.5W	74	4	25	2.2	20	4
5	32	21.3N	79	18.0W	74	4	25	4.9	32	5
6	32	16.7N	79	9.6W	74	4	25	6.5	46	6
7	32	14.6N	79	4.6W	74	4	25	9.7	90	7
8	32	10.2N	78	58.6W	74	4	25	10.8	180	8
9	32	5.2N	78	49.0W	74	4	25	14.1	326	9
10	32	0.0N	78	38.9W	74	4	25	16.9	394	10
11	31	43.9N	79	7.5W	74	4	25	23.3	550	11
12	31	43.5N	79	13.3W	74	4	26	2.5	122	12
13	31	51.5N	79	22.2W	74	4	26	3.9	42	13
14	31	54.2N	79	23.3W	74	4	26	5.6	60	14
15	31	59.5N	79	37.2W	74	4	26	7.3	99	15
16	32	5.0N	79	47.4W	74	4	26	9.2	25	16
17	32	10.5N	75	57.0W	74	4	26	11.0	15	17
18	32	16.0N	80	7.0W	74	4	26	13.6	17	18
19	32	19.0N	80	11.3W	74	4	26	13.2	19	19
20	32	21.5N	80	16.3W	74	4	26	14.2	14	20
21	31	57.7N	80	43.3W	74	4	26	19.0	17	21
22	31	55.9N	80	33.9W	74	4	26	20.1	17	22
23	31	53.9N	80	33.7W	74	4	26	20.9	15	23
24	31	43.4N	80	23.2W	74	4	26	22.4	21	24
25	31	45.0N	80	12.1W	74	4	27	.2	31	25
26	31	40.5N	80	2.5W	74	4	27	2.4	42	26
27	31	36.7N	79	53.0W	74	4	27	4.2	44	27
28	31	31.9N	79	41.5W	74	4	27	6.1	75	28
29	31	29.5N	79	36.3W	74	4	27	7.3	126	29
30	31	28.4N	79	31.2W	74	4	27	9.6	290	30
31	31	23.5N	79	22.0W	74	4	27	11.4	475	31
32	31	20.0N	79	10.2W	74	4	27	13.3	470	32
33	30	56.0N	79	24.5W	74	4	27	20.4	760	33
34	30	.6N	79	36.0W	74	4	27	23.3	536	34
35	31	5.0N	79	47.0W	74	4	28	2.3	250	35
36	31	5.0N	79	52.3W	74	4	28	4.5	95	36
37	31	7.0N	79	53.8W	74	4	28	6.2	43	37
38	31	12.5N	80	14.5W	74	4	28	9.8	33	38
39	31	18.2N	80	30.6W	74	4	28	11.4	33	39
40	31	23.2N	80	44.2W	74	4	28	13.3	26	40
41	31	25.7N	80	52.3W	74	4	28	14.7	19	41
42	31	27.5N	80	57.0W	74	4	28	15.7	12	42
43	31	29.5N	80	57.0W	74	4	28	16.6	12	43
44	31	16.2N	81	4.5W	74	4	28	19.0	13	44
45	30	55.9N	81	17.0W	74	4	28	21.8	11	45

Table 1. (continued)

STATION SUMMARY FOR EASTWARD CRUISE E-3-74 (CONT'D)

STATION	LATITUDE	LONGITUDE	YR	MO	DAY	HOUR	DEPTH M	CONSEC NUMBER
45	30 55.04	81 12.90	74	4	28	22.6	14	46
46	30 53.24	81 7.00	74	4	28	23.6	15	47
47	30 51.24	80 54.50	74	4	29	1.1	23	48
48	30 49.74	80 44.20	74	4	29	2.7	29	49
49	30 46.04	80 27.50	74	4	29	5.3	39	50
50	30 42.24	80 10.40	74	4	29	7.3	49	51
51	30 42.24	80 5.54	74	4	29	9.8	56	52
52	30 14.04	80 15.00	74	4	29	13.6	72	53
53	30 15.04	80 19.70	74	4	29	15.1	46	54
54	30 16.34	80 26.00	74	4	29	16.4	30	55
55	30 18.54	80 40.40	74	4	29	17.3	30	56
56	30 20.24	80 52.00	74	4	29	19.1	26	57
57	30 25.14	81 3.90	74	4	29	20.6	24	58
58	30 24.04	81 14.90	74	4	29	22.2	17	59
59	30 42.64	81 18.00	74	4	30	1.0	11	60
60	31 3.54	81 0.00	74	4	30	4.5	14	61
61	31 41.04	80 41.00	74	4	30	11.0	14	62
62	31 59.04	80 7.50	74	4	30	18.5	22	63



Table 1. (continued)

STATION SUMMARY FOR EASTWARD CRUISE E-12-74										
STATION	LATITUDE		LONGITUDE		YR	MN	DY	HOUR	DEPTH	CONSEC NUMBER
									M	
1	32	33.0N	79	47.0W	74	7	23	12.8	12	1
2	32	35.0N	79	42.5W	74	7	23	14.5	15	2
3	32	32.0N	79	38.0W	74	7	23	15.0	20	3
4	32	28.7N	79	27.8W	74	7	23	18.2	19	4
5	32	21.4N	79	17.9W	74	7	23	20.0	36	5
6	32	16.5N	79	9.2W	74	7	23	21.5	52	6
7	32	14.0N	79	4.0W	74	7	23	23.0	70	7
8	32	11.0N	78	53.5W	74	7	24	1.0	200	8
9	32	6.0N	78	49.3W	74	7	24	4.6	406	9
10	32	0.0N	78	33.6W	74	7	24	6.8	390	10
11	31	43.4N	79	3.0W	74	7	24	14.2	552	11
12	31	49.1N	79	17.1W	74	7	24	16.5	205	12
13	31	52.2N	79	23.8W	74	7	24	19.5	83	13
14	31	54.5N	79	27.5W	74	7	24	21.1	65	14
15	32	0.3N	79	27.5W	74	7	24	22.7	40	15
16	32	6.0N	79	47.0W	74	7	25	1.1	27	16
17	32	11.5N	79	57.5W	74	7	25	3.0	20	17
18	32	17.3N	80	3.1W	74	7	25	4.7	13	18
19	32	19.3N	80	11.7W	74	7	25	5.6	17	19
20	32	22.1N	80	16.2W	74	7	25	6.9	13	20
21	31	57.0N	80	42.5W	74	7	25	12.1	14	21
22	31	55.0N	80	39.2W	74	7	25	13.9	12	22
23	31	53.0N	80	34.2W	74	7	25	15.2	15	23
24	31	48.5N	80	23.7W	74	7	25	19.7	20	24
25	31	44.2N	80	13.0W	74	7	25	21.5	31	25
26	31	39.6N	80	3.1W	74	7	25	23.1	41	26
27	31	36.0N	79	53.7W	74	7	26	0.6	41	27
28	31	31.5N	79	43.0W	74	7	26	3.0	68	28
29	31	29.5N	79	38.5W	74	7	26	4.7	145	29
30	31	28.0N	79	32.5W	74	7	26	7.0	255	30
31	31	25.5N	79	21.0W	74	7	26	9.7	480	31
32	31	19.5N	79	10.5W	74	7	26	12.5	465	32
33	30	54.6N	79	25.5W	74	7	26	20.1	750	33
34	31	0.5N	79	35.5W	74	7	26	23.4	555	34
35	31	2.5N	79	43.0W	74	7	27	2.1	285	35
36	31	4.3N	79	53.5W	74	7	27	3.9	145	36
37	31	6.6N	79	59.1W	74	7	27	7.0	45	37
38	31	12.4N	80	15.5W	74	7	27	9.8	37	38
39	31	18.0N	80	30.0W	74	7	27	12.6	32	39
40	31	21.2N	80	41.5W	74	7	27	15.7	20	40
41	31	25.6N	80	52.5W	74	7	27	17.3	17	41
42	31	37.5N	80	57.5W	74	7	27	18.4	15	42
43	31	29.5N	81	3.0W	74	7	27	19.5	13	43
44	30	55.4N	81	17.5W	74	7	28	1.6	9	44
45	30	54.5N	81	13.4W	74	7	28	2.3	13	45

Table 1. (continued)

STATION SUMMARY FOR EASTWARD CRUISE E-12-74 (CONT'D)										
STATION	LATITUDE		LONGITUDE		YR	MR	DAY	HOUR	DEPTH	CONSEC
									M	NUMBER
46	30	53.1N	81	7.0W	74	7	28	4.5	14	46
47	30	50.5N	80	55.0W	74	7	28	6.5	21	47
48	30	48.7N	80	44.5W	74	7	28	9.3	28	48
49	30	45.0N	80	33.0W	74	7	28	11.3	32	49
50	30	41.5N	80	11.0W	74	7	28	14.5	45	50
51	30	40.2N	80	5.5W	74	7	28	16.3	115	51
52	30	39.0N	79	39.5W	74	7	28	18.5	343	52
53	30	38.5N	79	43.0W	74	7	28	22.2	480	53
54	30	25.8N	79	57.0W	74	7	29	1.6	710	54
55	30	11.0N	79	43.5W	74	7	29	3.1	370	55
56	30	13.6N	79	55.0W	74	7	29	12.2	530	56
57	30	12.3N	80	0.0W	74	7	29	14.9	350	57
58	30	14.0N	80	13.0W	74	7	29	16.6	114	58
59	30	15.0N	80	13.6W	74	7	29	13.3	47	59
60	30	16.8N	80	30.0W	74	7	29	20.4	35	60
61	30	18.4N	80	41.2W	74	7	29	22.4	27	61
62	30	20.1N	80	52.3W	74	7	30	.8	25	62
63	30	21.6N	81	4.5W	74	7	30	3.4	21	63
64	30	23.1N	81	15.5W	74	7	30	5.9	11	64
65	30	35.2N	80	52.5W	74	7	30	10.1	25	65
66	31	0.0N	80	29.0W	74	7	30	15.5	30	66
67	31	18.4N	81	7.5W	74	7	30	20.2	10	67
68	31	31.5N	80	29.0W	74	7	31	3.0	22	68

## DISPOSITION OF DATA

The hydrographic data (salinity, temperature, nitrate, phosphate, silicate and oxygen) are on file with the National Oceanographic Data Center in Washington, D. C. and at the Skidaway Institute of Oceanography. The biological, geological and chemical data are available from Skidaway Institute of Oceanography.

## METHODS

Hydrographic casts were made with teflon-lined Nansen bottles fitted with reversing thermometers. Sampling depths were determined using normal wire out, wire angle and thermometric depth techniques. A bathythermograph cast was made prior to each station to determine bottle spacing. Drift bottles were released at selected stations. They were made from green wine bottles weighted with sand and corked. They each contained a Day-Glo card requesting return of the card. Samples for chlorophyll, carbon-<sup>14</sup> primary productivity, particulate organic carbon and particulate nitrogen were obtained by a separate cast using Niskin bottles. Reported weather observations were taken from the bridge log and represent the deck officer's observations. The other analytical methods were as follows:

Table 2. Analytical Methods

<u>Analysis</u>	<u>Methods</u>
Salinity	Portable High Precision Laboratory Salinometer
Oxygen	Standard Winkler Titration (Strickland and Parsons 1965)
Phosphate	Reduced phosphomolybdate ( <i>ibid</i> )
Silica	Reduced silicomolybdate ( <i>ibid</i> )
Nitrate	Hydrazine reduction ( <i>ibid</i> , 1960)
Dissolved Organic Carbon	Persulfate oxidation/IR analysis (Menzel & Vaccaro, 1964)
Particulate Organic Carbon	High temperature combustion ( <i>ibid</i> )
Particulate Nitrogen	Micro-Dumas/Coleman analyzer
Chlorophyll	<i>in vitro</i> fluorimetric (Yentsch & Menzel, 1963)
Primary Productivity	Carbon- <sup>14</sup> assimilation (Steeman Nielson, 1952)

Methods for the benthic samples are as follows:

Sediments: Sediment samples were taken with a box dredge, and a small subsample was removed, placed in a plastic bag and returned to the laboratory for grain size analysis. All sieve fractions were dried and kept separate after the standard analysis. These fractions were then acidified and reweighed to remove carbonates. Grain size of the samples with large amounts of silts and clays was determined by pipette analysis.

The organic sample was placed in a plastic container and immediately frozen. These samples remained frozen until they were cut into cubes in the laboratory. Four cubes were selected from each sample, dried at 60°C, weighed, ashed at 500°C, weighed and ash free dry weight was determined.

Benthos: Benthic invertebrates were sampled with a modified anchor dredge fitted with a 2m tail encased in stainless 4mm wire. All trawls were for two minutes, and samples were preserved in ethanol. When large amounts of sediment were brought up, the sample was divided into one-third or one-fourth size subsamples and an appropriate amount saved. The remaining subsamples were sorted for larger organisms such as clams, starfish, sand dollars and crabs. These specimens were counted, placed in the sample and their numbers were recorded. All sorting was done in the laboratory. Supplemental data and specimens were obtained from otter trawls.

Mercury: Water samples for mercury analysis were collected from the upper two meters by pumping with a peristaltic pump using polypropylene tubing attached to a 10 meter non-metallic boom. This allowed samples to be collected uncontaminated by the ship. Samples collected in PVC Niskin bottles using the ship's hydro winches were found to be contaminated giving spurious high values. Water samples were collected in Pyrex BOD bottles and acidified with concentrated sulfuric acid to a pH of less than 1.

Prior to analysis samples were further oxidized with nitric acid, potassium permanganate and potassium disulfate. This was followed by reduction of the mercury in the sample to its zero valance state with stannous sulfate. The mercury vapor was then aerated using a peristaltic pump into the mercury analyzer system (Laboratory Data Control). Sample absorption was compared to standards prepared in a similar way. Based on replicate seawater analyses the analytical precision for mercury is +10% at a concentration of 35 ng/l.

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## APPENDICES

APPENDIX A  
Cruise E-3-74 Data

## RUNOFF AND WEATHER

The observed weather at each station is listed with the hydrographic data. Prior to the cruise the Georgia Bight was influenced by a weak high in the Sargasso Sea but on the 22nd and 23rd of April a cold front associated with a high in the northern U. S. passed through the area. On 24, 25, 26, 27, and 28 April the high moved to a center over Cape Hatteras. The high then recentered over Florida on 30 April while steadily weakening.

River flows from the principal rivers (Altamaha, Savannah, Cooper) are summarized in the following table:

Table 1. River flow data for principal rivers. Average daily flow rates ( $\text{km}^3/\text{day}$ ) are shown.

Date	Altamaha	Savannah	Cooper	Total
24 March	.0289	.0264	.0396	.0949
25	.0303	.0269	.0433	.1005
26	.0321	.0272	.0404	.0997
27	.0335	.0272	.0414	.1021
28	.0352	.0274	.0443	.1069
29	.0372	.0279	.0433	.1084
30	.0389	.0279	.0433	.1011
31	.0404	.0279	.0426	.1109
1 April	.0418	.0289	.0350	.1057
2	.0428	.0299	.0321	.1048
3	.0431	.0289	.0281	.1011
4	.0423	.0272	.0203	.0898
5	.0421	.0279	.0220	.0920
6	.0414	.0294	.0260	.0968
7	.0409	.0308	.0308	.1025
8	.0411	.0328	.0259	.0998
9	.0421	.0348	.0323	.1092
10	.0433	.0370	.0333	.1136
11	.0453	.0389	.0305	.1147
12	.0482	.0411	.0300	.1193
13	.0419	.0445	.0290	.1254
14	.0577	.0502	.0167	.1246
15	.0466	.0570	.0247	.1485
16	.0788	.0631	.0285	.1704
17	.0908	.0678	.0295	.1881
18	.0976	.0697	.0195	.1868
19	.0996	.0685	.0311	.1992
20	.0964	.0651	.0314	.1929
21	.0898	.0609	.0427	.1934
22	.0817	.0565	.0408	.1790
23	.0974	.0529	.0242	.1745
24	.0641	.0477	.0128	.1246
25	.0548	.0399	.0180	.1127
26	.0458	.0325	.0134	.0917
27	.0387	.0281	.0210	.0878
28	.0338	.0257	.0330	.0925
29	.0306	.0241	.0256	.0803
30	.0274	.0232	.0252	.0758



## HYDROGRAPHIC DATA

The following printout are from a program developed at Skidaway Institute using NODC format data as input.

The headings indicate the following:

1. STATION: A number referring to a geographic position in the sampling grid.
2. CONSECUTIVE STATION: A number based on the chronological order of stations (NODC consecutive number).
3. WEATHER CODE: Weather based on WMO code 4501.
4. CLOUD TYPE: Cloud type based on WMO code 0500.
5. CLOUD AMOUNT: Cloud amount based on WMO code 2700.
6. VISIBILITY CODE: not given.
7. Z: Depth in meters.
8. T: Temperature in degrees Celsius.
9. S: Salinity in ppt.
10. D: Density in sigma-t units.
11. O<sub>2</sub>: Oxygen concentration in mL O<sub>2</sub>/L
12. O<sub>2</sub>: Oxygen saturation based on UNESCO tables.
13. AOU: O<sub>2</sub>-O<sub>2</sub>
14. O<sub>2</sub>A: Oxygen anomaly based on Richards and Redfield (Deep-Sea Research, 1955, 2:182-199).
15. PO<sub>4</sub>: micromoles liter<sup>-1</sup>.
16. NO<sub>3</sub>: micromoles liter<sup>-1</sup>.
17. SI: micromoles liter<sup>-1</sup>.
18. N/P: Nitrate phosphate ratio.
19. DOC: Dissolved organic carbon (mg liter<sup>-1</sup>).

EASTWARD CRUISE 3 STATION 1 24/ IV/74 21.7 GMT CONSECUTIVE STATION 1

LATITUDE = 32 37.7N LONGITUDE = 79 47.6W DEPTH = 8M

WEATHER DATA

WIND FORCE = 2 SEA STATE = 1  
WIND DIRECTION = 136-144 DEGR WAVE DIRECTION = 136-144 DEGR  
AIR TEMP = 18.9C CLOUD TYPE = 8  
WEATHER CODE = 1 CLOUD AMOUNT = 5  
BAROMETRIC PRESSURE = 1013.9 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	D2	D2'	ADU	D2A	PD4	NO3	SI	N/P	DOC
0	20.05	32.15	22.60	5.49	5.25	-.24	-1.18	.08	.6	3.3	7.3	2.40
12	19.64	33.45	23.70	5.19	5.25	.05	-.70	.42	1.1	1.9	2.6	2.40

EASTWARD CRUISE 3 STATION 2 24/ IV/74 23.5 GMT CONSECUTIVE STATION 2

LATITUDE = 32 25.0N LONGITUDE = 79 42.7W DEPTH = 17M

WEATHER DATA

WIND FORCE = 0 SEA STATE = 0  
WIND DIRECTION = DEGR WAVE DIRECTION = DEGR  
AIR TEMP = 19.4C CLOUD TYPE = 8  
WEATHER CODE = 1 CLOUD AMOUNT = 6  
BAROMETRIC PRESSURE = 1014.2 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	D2	D2'	ADU	D2A	PD4	NO3	SI	N/P	DOC
0	19.75	33.13	23.42	5.27	5.24	-.03	-.32	.09	0.0	2.1	0.0	2.04
17	19.47	34.16	24.28	5.12	5.24	.12	-.54	.28	.8	1.9	2.9	2.34

EASTWARD CRUISE 3 STATION 3 25/ IV/74 .6 GMT CONSECUTIVE STATION 3

LATITUDE = 32 32.5M LONGITUDE = 79 38.2M DEPTH = 20M

WEATHER DATA

WIND FORCE = 0  
WIND DIRECTION = DEGR  
AIR TEMP = 19.4C  
WEATHER CODE = 1  
BAROMETRIC PRESSURE = 1016.6 MB  
SEA STATE = 0  
WAVE DIRECTION = DEGR  
CLOUD TYPE = 8  
CLOUD AMOUNT = 6  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	Q2	Q2'	ROU	Q2R	P04	MD3	SI	M4P	DOC
0	19.53	34.47	24.50	5.21	5.22	.01	-1.52	.05	0.0	.8	0.0	1.40
18	19.36	34.85	24.34	5.05	5.23	.18	-1.38	.07	.9	.7	12.9	1.16

EASTWARD CRUISE 3 STATION 4 25/ IV/74 2.2 GMT CONSECUTIVE STATION 4

LATITUDE = 32 27.0M LONGITUDE = 79 28.5M DEPTH = 20M

WEATHER DATA

WIND FORCE = 2  
WIND DIRECTION = 356-364 DEGR  
AIR TEMP = 17.8C  
WEATHER CODE = 1  
BAROMETRIC PRESSURE = 1017.3 MB  
SEA STATE = 1  
WAVE DIRECTION = 356-364 DEGR  
CLOUD TYPE = 3  
CLOUD AMOUNT = 6  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	Q2	Q2'	ROU	Q2R	P04	MD3	SI	M4P	DOC
0	19.62	35.32	25.13					.05	.7	0.0	14.0	1.26

EASTWARD CRUISE 3 STATION 5 25/ IV/74 4.3 GMT CONSECUTIVE STATION 5

LATITUDE = 32 21.3N LONGITUDE = 79 13.0W DEPTH = 33M

WEATHER DATA

WIND FORCE = 6 SEA STATE = 5  
 WIND DIRECTION = 356-364 DEGR WAVE DIRECTION = 356-364 DEGR  
 AIR TEMP = 15.6C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 2  
 BAROMETRIC PRESSURE = 1019.3 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	02	ADU	02A	AD4	AD3	SI	M/P	DOC
0	19.72	35.93	25.57	5.65	-1.49	-0.86	.04	.8	2.2	20.0	1.04
15	19.67	35.95	25.59	5.10	.07	-0.30	.14	.7	.3	5.0	1.16
30	18.94	36.00	25.92	4.81	.42	.02	.17	1.3	1.9	7.6	1.16

EASTWARD CRUISE 3 STATION 6 25/ IV/74 5.5 GMT CONSECUTIVE STATION 6

LATITUDE = 32 16.7N LONGITUDE = 79 9.6W DEPTH = 46M

WEATHER DATA

WIND FORCE = 6 SEA STATE = 5  
 WIND DIRECTION = 16- 24 DEGR WAVE DIRECTION = 16- 24 DEGR  
 AIR TEMP = 15.6C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 3  
 BAROMETRIC PRESSURE = 1019.0 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	02	ADU	02A	AD4	AD3	SI	M/P	DOC
0	20.05	36.07	25.58	5.59	-1.46	-0.80	.05	.7	.8	14.0	1.06
10	20.02	36.06	25.59	5.55	-1.42	-0.75	.08	.6	.8	7.5	1.06
25	20.01	36.04	25.57	5.63	-1.50	-0.84	.05	.6	1.1	12.0	.76
45	18.62	36.17	26.03	4.37	.83	1.30	.29	4.1	5.8	14.1	1.06

EASTWARD CRUISE 3 STATION 7 25/ 14/74 9.7 SMT CONSECUTIVE STATION 7

LATITUDE = 32 14.0N LONGITUDE = 79 4.6W DEPTH = 30M

WEATHER DATA

WIND FORCE = 6 SEA STATE = 5  
 WIND DIRECTION = 16- 24 DEGR WAVE DIRECTION = 16- 24 DEGR  
 AIR TEMP = 15.0C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 3  
 BAROMETRIC PRESSURE = 1013.6 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	U	DZ	ADU	DZA	PO4	MO3	SI	M-P	DOC
0	20.90	36.25	25.49	5.30	5.04	-0.26	-0.52	.9	1.9	18.0	.84
25	20.87	36.25	25.50	5.41	5.04	-0.37	-0.63	.4	1.6	2.2	.80
50	18.51	36.19	26.07	4.43	5.27	.94	1.07	4.7	3.7	16.6	.70
75	18.17	36.21	26.17	3.97	5.30	1.33	1.12	6.9	4.5	15.3	.88

EASTWARD CRUISE 3 STATION 3 257 14/74 10.9 GMT CONSECUTIVE STATION 8

LATITUDE = 32 10.3M LONGITUDE = 73 58.6M DEPTH = 180M

WEATHER DATA

WIND FORCE = 6 SEA STATE = 5  
 WIND DIRECTION = 16- 24 DEGR WAVE DIRECTION = 16- 24 DEGR  
 AIR TEMP = 13.9C CLOUD TYPE = 5  
 WEATHER CODE = 1 CLOUD AMOUNT = 5  
 BAROMETRIC PRESSURE = 1019.6 MB VISIBILITY CODE =

OBSERVATIONS

Z	I	S	U	UR	Q2	ADU	Q2A	PO4	NO3	SI	MAP	DOC
0	21.11	36.27	25.45	5.25	5.02	-0.23	-0.42	.08		1.2		.60
25	21.17	36.27	25.43	5.14	5.02	-0.12	-0.37	.07	.2	1.3	2.3	.66
50	19.02	36.24	25.98	4.15	5.22	1.07	.71	.31	5.4	4.2	17.4	.70
75	17.90	36.23	26.26	3.47	5.33	1.26	1.30	.51	8.7	5.6	17.1	-0.00
100	17.53	36.28	26.39	3.49	5.37	1.88	.89	.55	9.1	5.3	16.5	-0.00
150	14.73	35.96	26.79	3.43	5.68	2.25	.25	.92		7.7		-0.00
180		35.70		3.54			.96	16.5	16.5	10.9	16.8	-0.00

EASTWARD CRUISE 3 STATION 9 25/ IV/74 14.1 GMT CONSECUTIVE STATION 9

LATITUDE = 32 5.2N LONGITUDE = 79 49.0W DEPTH = 336M

WEATHER DATA

WIND FORCE = 5  
 WIND DIRECTION = 16- 24 DEGR  
 AIR TEMP = 14.4C  
 WEATHER CODE = 1  
 BAROMETRIC PRESSURE = 1020.7 MB

SEA STATE = 4  
 WAVE DIRECTION = 16- 24 DEGR  
 CLOUD TYPE = 5  
 CLOUD AMOUNT = 6  
 VISIBILITY CODE =

OBSERVATIONS

Z	T	S	n	D2	D2%	ADU	SEA	FO4	H03	S1	M/P	DDC
0	21.60	96.20	25.26	5.20	4.98	- .23	- .45	.01	.4	1.4	40.0	.96
23	21.61	96.20	25.26	5.17	4.98	- .19	- .43	.04	.4	1.3	10.0	.88
46	21.17	96.23	25.41	4.84	5.02	.16	- .07	.09	1.8	3.3	20.0	.88
69	16.95	96.21	26.48	3.43	5.43	2.00	.73	.52	10.7	6.0	17.3	.54
92	15.38	96.04	26.71	3.58	5.61	2.03	.18	.82	13.8	7.2	21.5	1.00
138	13.43	95.74	26.90	3.52	5.84	2.32	.10	.93	15.7	9.3	16.9	.60
207	7.40	94.99	27.38	3.27	6.70	3.43	.77					.66
326	7.13	94.94	27.38	3.25	6.74	3.49	.79	1.67	25.7	25.9	15.4	.66

EASTWARD CRUISE 3 STATION 10 25/ IV/74 16.9 GMT CONSECUTIVE STATION 10

LATITUDE = 32 0.0N LONGITUDE = 78 38.9W DEPTH = 394M

WEATHER DATA

WIND FORCE = 5 SEA STATE = 4  
 WIND DIRECTION = 16- 24 DEGR WAVE DIRECTION = 16- 24 DEGR  
 AIR TEMP = 15.6C CLOUD TYPE = 5  
 WEATHER CODE = 2 CLOUD AMOUNT = 8  
 BAROMETRIC PRESSURE = 1021.7 MB VISIBILITY CODE =

Z	T	S	D	D2	D2'	RGU	D2A	FD4	ND3	SI	M/P	DDC
0	22.17	36.15	25.07	5.18	4.93	-1.25	-1.47	.03	.7	1.0	23.9	.78
23	22.22	36.17	25.06	5.56	4.93	-1.83	-1.85					1.10
46	21.74	36.19	25.22	5.16	4.97	-1.19	-1.42	.05	.3	1.2	18.0	.84
68	18.07	36.22	26.21	3.46	5.31	1.85	1.43	.41	10.0	5.1	24.4	1.00
91	16.27	36.12	26.57	3.33	5.51	2.13	.59	.68	13.1	6.2	19.3	.52
140	13.96	35.81	26.84	3.34	5.78	3.44	.31	.77	14.0	6.8	18.2	.60
190	10.63	35.34	27.12	3.16	6.21	3.05	.52	1.09	17.6	11.2	16.1	.60
230	7.07	34.98	27.42	3.43	6.75	3.32	.70	1.69	27.1	23.7	16.0	.68
290	6.87	34.95	27.42	3.30	6.78	3.43	.85	1.69	27.5	23.8	16.3	.54

OBSERVATIONS



EASTWARD CRUISE 3 STATION 11 25/ IV/74 23.8 GMT CONSECUTIVE STATION 11

LATITUDE = 31 48.8M LONGITUDE = 79 7.5M DEPTH = 550M

WEATHER DATA

WIND FORCE = 5 SEA STATE = 4  
 WIND DIRECTION = 16- 24 DEGR WAVE DIRECTION = 16- 24 DEGR  
 AIR TEMP = 17.2C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 4  
 BAROMETRIC PRESSURE = 1021.0 MB VISIBILITY CODE =

Z	T	S	D	D2	D2/	ADU	D2H	PO4	NO3	SI	N/P	DOC
0	25.08	35.00	24.09	5.01	4.69	- .32	- .45	.03	.8	1.8	26.7	.68
23	25.06	35.38	24.09	5.02	4.69	- .33	- .47	.01	.9	3.6	30.0	.84
47	24.02	35.03	24.43	5.15	4.78	- .37	- .54	.01	.6	1.5	50.0	.80
71	22.92	36.12	24.83	4.97	4.87	- .10	- .30	.04	.3	1.3	7.5	.76
95	21.20	36.27	25.43	4.58	5.01	.43	.19	.13	.6	2.0	4.6	.54
142	19.32	35.90	26.48	3.42	5.55	2.13	.74	.37	2.8	9.9	23.3	.50
182	11.14	35.36	27.05	3.11	5.15	3.04	.92	1.26	21.7	15.6	17.2	.50
232	8.37	35.02	27.25	3.05	6.55	3.50	.77	1.39		20.0		.54
332	7.87	35.05	27.32	3.25			1.51		26.0	19.0	17.2	.54
532	7.87	35.00	27.32	3.29	6.62	3.33	.64	1.59	25.3	20.4	15.9	.76

OBSERVATIONS

EASTWARD CRUISE 3 STATION 13 267 1474 2.5 GMT CONSECUTIVE STATION 12

LATITUDE = 31 48.5N LONGITUDE = 79 18.3W DEPTH = 132M

WEATHER DATA

WIND FORCE = 2 SEA STATE = 2  
 WIND DIRECTION = 16- 24 DEGR WAVE DIRECTION = 16- 24 DEGR  
 AIR TEMP = 16.1C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 2  
 BAROMETRIC PRESSURE = 1023.0 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	U	U2	U2	ADU	Q2A	P04	M03	S1	M/P	DDC
0	23.42	36.03	24.60	5.11	4.32	-1.29	-0.47	.03	.6	1.4	20.0	.92
24	22.25	36.08	24.99	5.69	4.93	-1.79	-0.99	.31	.2	1.0	5.0	.92
48	21.05	36.26	25.46	5.39	5.03	-1.36	-0.62	.04	8.6	6.0	18.7	.68
72	19.09	36.18	26.18	3.71	5.31	1.60	1.35	.46		4.9		.72
96	17.05	36.21	26.45	3.64	5.42	1.78	.59	1.42		6.5		.40
144	15.17	35.81	26.53	3.61	5.64	2.03	.34			6.0		.56
191	14.17	35.84	26.92	3.46	5.75	2.29	.20			6.0		.60

EASTWARD CRUISE 3 STATION 13 26/ IV/74 3.9 GMT CONSECUTIVE STATION 13

LATITUDE = 31 51.5N LONGITUDE = 79 22.8W DEPTH = 92M

WEATHER DATA

WIND FORCE = 0 SEA STATE = 0  
 WIND DIRECTION = DEGR WAVE DIRECTION = DEGR  
 AIR TEMP = 16.1C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 2  
 BAROMETRIC PRESSURE = 1023.0 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	DZ	ADU	QZ	P04	M03	SI	M/P	000	
0	21.59	36.16	25.24	5.20	4.98	-0.22	-0.46	.03	.1	2.4	3.3	.84
25	21.02	36.17	25.40	5.27	5.03	-0.24	-0.51	.01	.4	1.4	40.0	.84
50	19.94	36.16	25.68	4.74	5.13	-0.39	-0.07	.16	2.1	3.1	13.1	.66
32	17.17	26.21	26.42	3.70	5.41	1.71	-0.60	.59	12.6	10.4	21.4	.80

EASTWARD CRUISE 3 STATION 14 28/ IV-74 5.6 SMT CONSECUTIVE STATION 14

LATITUDE = 31 54.5N LONGITUDE = 79 28.3W DEPTH = 50M

WEATHER DATA

WIND FORCE = 0  
 WIND DIRECTION = DEGR  
 AIR TEMP = 15.1C  
 WEATHER CODE = 0  
 BAROMETRIC PRESSURE = 1022.7 MB

SEA STATE = 0  
 WAVE DIRECTION = DEGR  
 CLOUD TYPE =  
 CLOUD AMOUNT = 0  
 VISIBILITY CODE =

OBSERVATIONS

Z	T	S	0	02	02	ADU	02A	P04	NO3	SI	N/P	DOC
0	21.08	36.18	25.39	5.64	5.03	-0.61	-0.38	.04	.9	.9		.82
20	20.39	36.22	25.47	5.38	5.04	-0.34	-0.50	.03	.4	1.4	13.3	.80
40	20.50	36.16	25.54	5.20	5.08	-0.12	-0.41	.03	.5	1.8	16.7	.92
60	18.72	36.11	25.97	4.15	5.25	1.10	.71	.35	5.9	5.2	16.9	.72

EASTWARD CRUISE 3 STATION 15 36/ IV-74 7.3 SMT CONSECUTIVE STATION 15

LATITUDE = 31 59.5N LONGITUDE = 79 37.8W DEPTH = 39M

WEATHER DATA

WIND FORCE = 0  
 WIND DIRECTION = DEGR  
 AIR TEMP = 16.1C  
 WEATHER CODE = 0  
 BAROMETRIC PRESSURE = 1022.7 MB

SEA STATE = 0  
 WAVE DIRECTION =  
 CLOUD TYPE =  
 CLOUD AMOUNT = 0  
 VISIBILITY CODE =

OBSERVATIONS

Z	T	S	0	02	ADU	02A	P04	NO3	SI	N/P	DOC	
0	19.18	35.93	25.71	5.29	5.21	-0.08	-0.43	.10	.9	2.5	9.0	.88

EASTWARD CRUISE 3 STATION 16 26° 14'74 3.5 GMT CONSECUTIVE STATION 16

LATITUDE = 22 5.0N LONGITUDE = 79 47.4W DEPTH = 25M

WEATHER DATA

WIND FORCE = 0  
WIND DIRECTION = DEGR  
AIR TEMP = 17.20  
WEATHER CODE = 0  
BAROMETRIC PRESSURE = 1022.7 MB  
SEA STATE = 0  
WAVE DIRECTION = DEGR  
CLOUD TYPE =  
CLOUD AMOUNT = 0  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	DE	ADU	MO3	MO3	SI	W/P	DOC		
0	19.18	35.57	25.43	5.62	5.22	-4.40	-3.85	.05	.4	.5	8.0	.28

EASTWARD CRUISE 3 STATION 17 26° 14'74 11.0 GMT CONSECUTIVE STATION 17

LATITUDE = 22 10.3N LONGITUDE = 79 57.0W DEPTH = 15M

WEATHER DATA

WIND FORCE = 0  
WIND DIRECTION = DEGR  
AIR TEMP = 16.70  
WEATHER CODE = 1  
BAROMETRIC PRESSURE = 1023.4 MB  
SEA STATE = 0  
WAVE DIRECTION = DEGR  
CLOUD TYPE = 3  
CLOUD AMOUNT = 2  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	DE	ADU	MO3	MO3	SI	W/P	DOC		
0	19.10	36.01	25.03	5.64	5.25	-3.34	-3.93	.06	.1	1.0	1.3	1.20

EASTWARD CRUISE 3 STATION 18 26° 14'74" 13.3 GMT CONSECUTIVE STATION 18

LATITUDE = 32 16.04 LONGITUDE = 80 7.04 DEPTH = 17M

WEATHER DATA

WIND FORCE = 0 DEBR SEA STATE = 0  
WIND DIRECTION = DEBR WAVE DIRECTION = DEBR  
AIR TEMP = 13.30 CLOUD TYPE = 8  
WEATHER CODE = 1 CLOUD AMOUNT = 2  
BAROMETRIC PRESSURE = 1024.7 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	DE	DEZ	HOU	DEA	PO4	H02	SI	M/A	DOC
0	19.30	34.30	24.43	5.57	5.25	-1.32	-1.96	.05	.1	1.7	2.0	1.20

EASTWARD CRUISE 3 STATION 19 26° 14'74" 13.2 GMT CONSECUTIVE STATION 19

LATITUDE = 32 19.04 LONGITUDE = 80 11.30 DEPTH = 15M

WEATHER DATA

WIND FORCE = 0 DEBR SEA STATE = 0  
WIND DIRECTION = DEBR WAVE DIRECTION = DEBR  
AIR TEMP = 13.30 CLOUD TYPE = 3  
WEATHER CODE = 1 CLOUD AMOUNT = 2  
BAROMETRIC PRESSURE = 1024.7 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	DE	DEZ	HOU	DEA	PO4	H02	SI	M/A	DOC
0	19.34	34.17	24.22	5.55	5.25	-1.40	-1.05	.05	0.0	1.0	0.0	1.50

EASTWARD CRUISE 3 STATION 20 26° IV/74 14.2 5M CONSECUTIVE STATION 20

LATITUDE = 32 21.5M LONGITUDE = 96 15.3M DEPTH = 14M

WEATHER DATA

WIND FORCE = 0 SEA STATE = 0  
WIND DIRECTION = DEGR WAVE DIRECTION = DEGR  
AIR TEMP = 20.5C CLOUD TYPE = 3  
WEATHER CODE = 1 CLOUD AMOUNT = 2  
BAROMETRIC PRESSURE = 1025.1 MB VISIBILITY CODE =

OBSERVATIONS

2	Y	3	D	02	02	ADJ	329	FB4	403	SI	4/P	DOC
0	19.45	33.46	23.75	5.61	5.26	-0.35	-1.11	.12	4.9	1.1	40.8	1.94

EASTWARD CRUISE 3 STATION 21 26° IV/74 19.0 5M CONSECUTIVE STATION 21

LATITUDE = 31 57.7M LONGITUDE = 80 43.3M DEPTH = 17M

WEATHER DATA

WIND FORCE = 1 SEA STATE = 1  
WIND DIRECTION = 136-144 DEGR WAVE DIRECTION = 136-144 DEGR  
AIR TEMP = 18.9C CLOUD TYPE = 4  
WEATHER CODE = 0 CLOUD AMOUNT = 0  
BAROMETRIC PRESSURE = 1024.0 MB VISIBILITY CODE =

OBSERVATIONS

2	T	3	D	02	02	ADJ	029	FB4	403	SI	4/P	DOC
0	19.35			5.61			.11	0.0	0.0	4.2	0.0	1.56

EASTWARD CRUISE 3 STATION 23 26° IV74 20.1 5MT CONSECUTIVE STATION 22

LATITUDE = 31 55.9N LONGITUDE = 80 33.9W DEPTH = 17M

WEATHER DATA

WIND FORCE = 1  
 WIND DIRECTION = 136-144 DEGR  
 AIR TEMP = 19.9C  
 WEATHER CODE = 0  
 BAROMETRIC PRESSURE = 1024.0 MB

SEA STATE = 1  
 WAVE DIRECTION = 136-144 DEGR  
 CLOUD TYPE =  
 CLOUD AMOUNT = 0  
 VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	Q2	Q27	ADU	Q2A	Q04	Q03	SI	M.P	DOC
0	20.73	33.38	23.36	5.46	5.14	-1.32	-1.02	.12	.2	6.0	1.7	1.36
17	19.51	33.60	23.85	5.39	5.25	-1.14	-1.28	.13	.9	2.1	6.9	1.60

EASTWARD CRUISE 3 STATION 23 26° IV74 20.9 5MT CONSECUTIVE STATION 23

LATITUDE = 31 53.9N LONGITUDE = 80 33.7W DEPTH = 15M

WEATHER DATA

WIND FORCE = 1  
 WIND DIRECTION = 136-144 DEGR  
 AIR TEMP = 19.4C  
 WEATHER CODE = 0  
 BAROMETRIC PRESSURE = 1023.4 MB

SEA STATE = 1  
 WAVE DIRECTION = 136-144 DEGR  
 CLOUD TYPE =  
 CLOUD AMOUNT = 0  
 VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	Q2	Q27	ADU	Q2A	Q04	Q03	SI	M.P	DOC
0	20.69	33.79	23.68	5.61	5.13	-1.43	-1.12	.13	.9	6.0	6.9	1.30
15	19.46	34.01	24.16	5.48	5.24	-1.24	-1.93	.10	1.4	1.0	14.0	1.30



EASTWARD CRUISE 3 STATION 24 26/ IV/74 22.4 GMT CONSECUTIVE STATION 24

LATITUDE = 31 48.4N LONGITUDE = 80 23.2W DEPTH = 21M

WEATHER DATA

WIND FORCE = 2 SEA STATE = 1  
 WIND DIRECTION = 136-144 DEGR WAVE DIRECTION = 136-144 DEGR  
 AIR TEMP = 20.5C CLOUD TYPE =  
 WEATHER CODE = 0 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1023.0 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	O2	ADU	AD3	AD4	AD5	SI	M/P	DDC	
0	20.46	35.02	24.69	5.41	5.12	-0.29	-0.76	.11	.4	2.9	3.6	1.40
21	19.49	35.12	25.01	5.42	5.21	-0.21	-0.72	.12	0.0	2.9	0.0	1.00

EASTWARD CRUISE 3 STATION 25 27/ IV/74 0.2 GMT CONSECUTIVE STATION 25

LATITUDE = 31 45.0N LONGITUDE = 80 12.1W DEPTH = 31M

WEATHER DATA

WIND FORCE = 2 SEA STATE = 1  
 WIND DIRECTION = 136-144 DEGR WAVE DIRECTION = 136-144 DEGR  
 AIR TEMP = 20.0C CLOUD TYPE =  
 WEATHER CODE = 0 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1022.4 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	O2	ADU	AD3	AD4	AD5	SI	M/P	DDC	
0	20.60	35.73	25.22	5.40	5.09	-0.32	-0.66	.03	.1	1.6	1.3	0.92
27	19.94	35.73	25.42	5.42	5.15	-0.27	-0.65	.11	1.0	1.0	1.70	

EASTWARD CRUISE 3 STATION 26 27 IV74 3.4 5MT CONSECUTIVE STATION 26

LATITUDE = 31 40.5N LONGITUDE = 20 3.5W DEPTH = 42M

WEATHER DATA

WIND FORCE = 2 SEA STATE = 1  
 WIND DIRECTION = 136-144 DEGR WAVE DIRECTION = 136-144 DEGR  
 AIR TEMP = 19.5C CLOUD TYPE =  
 WEATHER CODE = 0 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1023.0 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	Q2	Q27	Q00	Q24	Q04	Q03	SI	W/P	DOC
0	19.93	35.80	25.41	5.30	5.15	-0.15	-0.53	.10	.5	2.3	5.0	1.84
40	19.58	35.84	25.51	5.69	5.17	-0.52	-0.91	.06		1.5		1.08

EASTWARD CRUISE 3 STATION 27 27 IV74 4.2 5MT CONSECUTIVE STATION 27

LATITUDE = 31 36.7N LONGITUDE = 79 53.0W DEPTH = 44M

WEATHER DATA

WIND FORCE = 2 SEA STATE = 1  
 WIND DIRECTION = 136-144 DEGR WAVE DIRECTION = 136-144 DEGR  
 AIR TEMP = 18.9C CLOUD TYPE =  
 WEATHER CODE = 0 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1023.7 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	Q2	Q27	Q00	Q24	Q04	Q03	SI	W/P	DOC
0	21.29	36.23	25.37	5.18	5.01	-0.17	-0.42	.07		1.9		.84
20	20.64	36.20	25.53	5.11	5.07	-0.04	-0.32	.08		1.0		.62
44	19.53	36.05	25.58	5.00	5.15	-0.15	-0.19	.13	1.8	3.2	13.6	.84

EASTWARD CRUISE 3 STATION 28 27° 14'74" 6.1 GMT CONSECUTIVE STATION 28

LATITUDE = 31 31.9N LONGITUDE = 79 41.5W DEPTH = 75M

WEATHER DATA

WIND FORCE = 1 SEA STATE = 1  
 WIND DIRECTION = 136-144 DEGR WAVE DIRECTION = 136-144 DEGR  
 AIR TEMP = 18.9C CLOUD TYPE =  
 WEATHER CODE = 1 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1022.7 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	D2	D2'	ADU	D2H	P04	NO3	SI	M/S	DGC
0	21.18	36.19	25.37	5.23	5.02	-0.21	-0.47	.02	0.0	1.5	0.0	1.00
25	20.59	35.22	25.56	5.32	5.07	-0.25	-0.53	.12	.1	2.7	.3	1.44
50	19.77	35.14	25.97	4.22	5.25	1.03	.64	.35	5.2	5.0	14.3	1.00
75	18.79	35.14	25.97	4.13	5.24	1.11	.73	.35	6.3	5.3	17.5	.84

EASTWARD CRUISE 3 STATION 29 27/ 14/74 7.8 GMT CONSECUTIVE STATION 29

LATITUDE = 31 29.5N LONGITUDE = 73 36.3W DEPTH = 180M

WEATHER DATA

WIND FORCE = 0 SEA STATE = 0  
 WIND DIRECTION = DEGR WAVE DIRECTION = DEGR  
 AIR TEMP = 19.4C CLOUD TYPE =  
 WEATHER CODE = 0 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1023.0 MB VISIBILITY CODE =

Z	T	S	D	D2	D2'	ADU	D2A	P24	M03	S1	M/P	DOC
0	22.71	36.13	24.90	4.95	4.88	.03	-.17	.01	0.0	2.1	0.0	.84
29	21.90	36.14	25.14	5.09	4.95	-.14	-.37	.02	0.0	1.7	0.0	1.12
47	20.58	36.26	25.59	5.24	5.07	-.17	-.44	.10		1.3		1.04
70	19.26	36.16	25.86	4.63	5.20	.57	.21	.17		2.5		1.08
117	18.03	36.27	26.26	4.28	5.32	1.04	.49	.46	9.0	6.0	19.6	1.90
163	15.38	36.02	26.99	5.12	5.61	.49	-1.34		13.1	9.1		1.00

OBSERVATIONS:

EASTWARD CRUISE 3 STATION 30 27° 17'74" 9.6 SMT CONSECUTIVE STATION 30

LATITUDE = 31 28.4N LONGITUDE = 79 31.2W DEPTH = 290M

WEATHER DATA

WIND FORCE = 0 SEA STATE = 0  
 WIND DIRECTION = DEGR WAVE DIRECTION = DESP  
 AIR TEMP = 13.4C CLOUD TYPE =  
 WEATHER CODE = 0 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1023.0 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	Q2	Q2%	AQU	Q2A	P04	MG3	SI	N/P	DDC
0	25.17	35.00	24.07	5.01	4.58	-0.33	-0.46	.03	.4	1.9	13.3	1.08
23	23.34	35.10	24.51					.03	.4	1.5	20.0	.84
46	22.53	35.07	24.30	4.74	4.90	.16	-0.06	.02	.4	2.3	20.0	1.00
69	21.23	35.19	25.36	5.83	5.01	-0.82	-1.07	.03		1.7		.96
92	19.64	35.12	25.73	4.53	5.16	.58	.24	.33	4.3	3.8	13.4	.66
109	17.18	35.25	26.45	4.10	5.40	1.30	.13	.33	10.2	6.6	13.3	.83
127	15.78	35.15	26.70	3.90	5.56	1.66	-0.13	.66	12.4	5.5	13.3	.62
245	12.45	35.59	26.98	4.05	5.37	1.31	-0.45	.45		3.0		.53

EASTWARD CRUISE 3 STATION 31 27° 14' 74" 11.4 6M CONSECUTIVE STATION 31

LATITUDE = 31 23.5N LONGITUDE = 79 22.0W DEPTH = 475M

WEATHER DATA

WIND FORCE = 0 SEA STATE = 0  
 WIND DIRECTION = DEGR WAVE DIRECTION = DEGR  
 AIR TEMP = 21.1C CLOUD TYPE =  
 WEATHER CODE = 0 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1023.7 MB VISIBILITY CODE =

Z	T	S	D	Q2	Q2%	ADU	Q2H	P04	P03	SI	M/P	DOC
0	25.82	35.03	23.89	4.90	4.53	-0.27	-0.33	.02	.4	2.2	20.0	.76
25	25.84	35.05	23.90	4.75	4.63	-0.12	-0.33	.03	1.4	1.6	45.7	.80
49	25.36	35.03	23.88	4.75	4.63	-0.12	-0.33	.02	.3	5.0	15.0	.66
74	25.71	35.18	24.04	5.33	4.64	-0.75	-0.84	.04		1.5		.60
98	24.48	35.33	24.53	4.43	4.73	.30	.19	.03	1.3	3.0	14.4	.50
122	20.75	35.35	25.61	4.16	5.05	.89	.64	.23		2.2		.30
173	17.42	35.22	26.37	3.78	5.33	1.60	.56	.43		5.0		.76
265	13.12	35.53	26.98	3.43	5.83	3.45	1.20	.37	14.4	3.3	16.6	.50
350	9.34	35.20	27.34	3.51	5.40	3.89	.30	1.31	23.1	16.3	17.6	.68
414		35.25		3.29			1.35		22.1	16.4	16.4	.54

OBSERVATIONS



EASTWARD CRUISE 3 STATION 33 27° 1W/74 20.4 GMT CONSECUTIVE STATION 33

LATITUDE = 30 56.0M LONGITUDE = 79 24.5W DEPTH = 76.0M

WEATHER DATA

WIND FORCE = 0  
 WIND DIRECTION = DEGR  
 AIR TEMP = 23.3C  
 WEATHER CODE = 0  
 BAROMETRIC PRESSURE = 1024.7 MB

SEA STATE = 0  
 WAVE DIRECTION = DEGR  
 CLOUD TYPE =  
 CLOUD AMOUNT = 0  
 VISIBILITY CODE =

Z	T	S	D	O2	32°	ADU	Q2A	P04	NO3	SI	M/P	DOC
0	26.06	36.05	33.82	4.39	4.61	-1.37	-1.47	.03		1.3		.80
23	25.74	36.08	33.95	4.69	4.64	-1.25	-1.36	.01	.4	1.7	40.0	.68
46	25.63	36.09	33.99	4.84	4.65	-1.19	-1.30	.03	.2	1.8	6.7	.90
71	25.46	36.08	24.04	4.88	4.66	-1.22	-1.33	.02	.2	1.4	10.0	.76
93	25.55	36.11	24.03	4.78	4.65	-1.13	-1.24	.03	1.0	1.6	33.9	.66
139	22.34	36.77	25.31	3.81	4.65	1.04	.94	.22	3.8	3.4	17.3	.58
136	20.19	36.68	26.02	3.61	5.09	1.43	2.10	.29	5.7	5.0	13.7	.72
281	17.28	36.29	25.45	3.38	5.33	2.01	.95	.55	12.2	5.2	22.8	.54
379	14.86	35.97	26.77	3.39	5.67	1.68	-1.23	.56	10.4	6.3	18.6	.84
477	12.76	35.64	26.25	3.68	5.73	2.05	-1.37	.32	13.9	6.4	17.0	.56

OBSERVATIONS



EASTWARD CRUISE 3 STATION 34 274 IV74 23.3 6MT CONSECUTIVE STATION 34

LATITUDE = 30 .6N LONGITUDE = 79 36.0W DEPTH = 530M

WEATHER DATA

WIND FORCE = 0                      SEA STATE = 0  
WIND DIRECTION =                      WAVE DIRECTION =                      DEGR  
AIR TEMP = 22.20                      CLOUD TYPE =                      DEGR  
WEATHER CODE = 0                      CLOUD AMOUNT = 0  
BAROMETRIC PRESSURE = 1025.1 MB                      VISIBILITY CODE =

OBSERVATIONS

Z	T	S	Q	Q2	Q2%	ADU	Q2R	PG4	WDD	SI	M/P	DOC
0	25.10	35.99	23.77	4.60	4.61	-1.19	-1.30	.02	.4	2.7	20.0	.92
25	25.96	36.00	23.83	4.91	4.62	-1.29	-1.40	.03	1.0	1.7	33.3	.80
50	25.95	35.98	23.81	4.84	4.52	-1.22	-1.33	.04	.4	2.3	10.0	.96
75	25.96	35.99	23.82	4.95	4.62	-1.23	-1.34	.04	.1	3.0	2.5	.88
100	24.92			4.71				.04		2.0		.56
147	22.16	35.73	25.51	3.35	4.91	1.06	.93	.20	4.2	2.9	21.0	.80
185	18.45	36.37	26.23	3.41	5.27	1.86	1.47	.56	6.0	4.8	10.7	.60
260	14.33	35.84	26.79	3.27	5.73	2.46	.41		12.6	9.5		.96
345	11.31	35.39	27.04	3.01	6.12	3.11	.62		20.9	9.6		.50
413	3.54	35.06	27.26	3.34	6.52	3.18	.49	1.57	25.1	20.5	16.0	

EASTWARD CRUISE 3 STATION 35 28/ 19/74 2.3 5MT CONSECUTIVE STATION 35

LATITUDE = 31 5.0N LONGITUDE = 79 47.0W DEPTH = 250M

WEATHER DATA

WIND FORCE = 2 SEA STATE = 1  
 WIND DIRECTION = 86- 94 DEGR WAVE DIRECTION = 86- 94 DEGR  
 AIR TEMP = 21.7C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 2  
 BAROMETRIC PRESSURE = 1025.7 MB VISIBILITY CODE =

OBSERVATIONS												
2	7	9	0	02	027	ADU	U2H	PO4	NO3	SI	MXP	DDC
0	25.76	35.95	23.85	4.82	4.64	- .13	- .31	.03	1.1	1.0	36.7	.92
25	25.41	36.11	24.08	4.85	4.66	- .20	- .31	.02	.4	2.7	20.0	.60
50	22.63	26.05	24.57	5.11	4.81	- .30	- .43	.05	1.0	1.7	20.0	.86
75	22.13	26.12	25.05	5.03	4.93	- .15	- .36	.03	.7	2.9	7.3	.80
98	21.36	26.12	25.27	4.84	5.00	.15	- .10	.03	1.3	2.0	16.3	.80
147	16.53	26.11	26.50	3.34	5.48	2.14	.77	.64	11.8	7.0	18.4	.65
174	14.26	25.87	26.83	3.47	5.74	2.27	.13	.63	15.1	13.2	18.2	.65
222	12.34	25.53	26.99	3.23	5.39	2.75	.39	1.08	20.4	13.1	13.9	.50

EASTWARD CRUISE 3 STATION 36 28/ IV/74 4.5 5MT CONSECUTIVE STATION 36

LATITUDE = 31 5.0N LONGITUDE = 79 52.9W DEPTH = 95M

WEATHER DATA

WIND FORCE = 3 SEA STATE = 2  
 WIND DIRECTION = 86- 94 DEGR WAVE DIRECTION = 86- 94 DEGR  
 AIR TEMP = 21.7C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 2  
 BAROMETRIC PRESSURE = 1026.1 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	02	02	02	02	02A	P04	M03	ST	N/P	DDC
0	25.07	36.03	24.12	5.00	4.69	-1.31	-1.44	.08	.2	.2	2.2	2.5	.76
35	22.46	36.14	24.98	5.10	4.91	-1.19	-1.40	.04	.4	.4	1.7	10.0	1.08
50	20.79	36.16	25.46	4.70	5.03	.35	.07	.17	1.8	1.8	3.0	10.6	.88
75	20.37	36.15	25.59	4.46	5.10	.64	.34	.27	3.4	3.4	3.5	12.6	.66
95	19.62	36.14	25.75	4.25	5.16	.31	.57	.25	4.0	4.0	3.3	16.0	.72

EASTWARD CRUISE 3 STATION 37 23° 14'74" 5.2 GMT CONSECUTIVE STATION 37

LATITUDE = 31 7.0M LONGITUDE = 79 53.8M DEPTH = 43M

WEATHER DATA

WIND FORCE = 4  
WIND DIRECTION = 156-184 DEGR  
AIR TEMP = 21.73  
WEATHER CODE = 1  
BAROMETRIC PRESSURE = 1025.1 MB  
SEA STATE = 2  
WAVE DIRECTION = 156-184 DEGR  
CLOUD TYPE = 3  
CLOUD AMOUNT = 2  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	D2	ADU	D2A	PD4	MD3	SI	N/P	DOC
0	22.77	36.13	24.88	5.11	4.88	-1.23	0.00	.2	2.2		.88
20	22.23	36.15	25.05	5.40	4.93	-1.47	.03	0.0	1.3	0.0	2.78
30	21.53	36.17	25.26	5.21	4.99	-1.47	.04	.4	2.1	10.0	1.04
45	20.93	36.17	25.43	4.77	5.04	-1.00	.09	1.2	3.6	13.3	.90

EASTWARD CRUISE 3 STATION 38 23° 14'74" 3.9 GMT CONSECUTIVE STATION 38

LATITUDE = 31 12.5M LONGITUDE = 80 14.5M DEPTH = 38M

WEATHER DATA

WIND FORCE = 3  
WIND DIRECTION = 176-184 DEGR  
AIR TEMP = 25.10  
WEATHER CODE = 1  
BAROMETRIC PRESSURE = 1025.1 MB  
SEA STATE = 2  
WAVE DIRECTION = 176-184 DEGR  
CLOUD TYPE = 3  
CLOUD AMOUNT = 2  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	D2	ADU	D2A	PD4	MD3	SI	N/P	DOC
0	20.77	36.39	25.64	5.23	5.05	-1.18	.11	.3	2.3	2.7	.88
35	20.79	36.42	25.55	5.18	5.05	-1.37	.13		3.3		1.04

EASTWARD CRUISE 3 STATION 39 28° 14'74 11.4 GMT CONSECUTIVE STATION 39

LATITUDE = 31 18.2M LONGITUDE = 80 20.0M DEPTH = 38M

WEATHER DATA

WIND FORCE = 3  
 WIND DIRECTION = 176-184 DEGR  
 AIR TEMP = 20.0C  
 WEATHER CODE = 1  
 BAROMETRIC PRESSURE = 1025.1 MB

SEA STATE = 1  
 WAVE DIRECTION = 176-184 DEGR  
 CLOUD TYPE = 8  
 CLOUD AMOUNT = 2  
 VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	Q2	Q2'	ADU	Q2A	PO4	NO3	SI	M/P	DOC
0	20.21	35.72	25.28	5.40	5.12	-0.23	0.14	0.0	1.5	0.0	0.0	1.12
20	19.93	35.82	25.43	5.27	5.14	-0.13	-0.50	0.12	1.1	1.8	9.2	1.50

EASTWARD CRUISE 3 STATION 40 28° 14'74 13.3 GMT CONSECUTIVE STATION 40

LATITUDE = 31 23.2M LONGITUDE = 80 44.2M DEPTH = 20M

WEATHER DATA

WIND FORCE = 3  
 WIND DIRECTION = 176-184 DEGR  
 AIR TEMP = 21.7C  
 WEATHER CODE = 1  
 BAROMETRIC PRESSURE = 1027.4 MB

SEA STATE = 1  
 WAVE DIRECTION = 176-184 DEGR  
 CLOUD TYPE = 8  
 CLOUD AMOUNT = 2  
 VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	Q2	Q2'	ADU	Q2A	PO4	NO3	SI	M/P	DOC
0	20.34	34.24	24.11	5.45	5.15	-0.30	-0.39	0.09	0.4	3.1	4.4	1.60
20	19.97	35.17	24.32	5.07	5.16	0.09	-0.38	0.13	0.5	2.0	3.3	1.28

EASTWARD CRUISE 3 STATION 41 23° IV/74 14.7 GMT CONSECUTIVE STATION 41  
 LATITUDE = 31 25.7M LONGITUDE = 30 52.3W DEPTH = 12M

WEATHER DATA  
 WIND FORCE = 2 SEA STATE = 1  
 WIND DIRECTION = 266-274 DEGR WAVE DIRECTION = 266-274 DEGR  
 AIR TEMP = 23.9C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 2  
 BAROMETRIC PRESSURE = 1028.4 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	02	ADU	02A	PO4	NO3	SI	N:P	DOC
0	20.34	33.84	23.88	5.54	5.17	-1.03	.13	.9	2.4	6.9	1.34
12	20.01	34.76	24.60	5.07	5.17	.10	-1.43	.15	1.5	2.7	1.66

EASTWARD CRUISE 3 STATION 42 23° IV/74 15.7 GMT CONSECUTIVE STATION 42  
 LATITUDE = 31 27.5M LONGITUDE = 30 57.0W DEPTH = 12M

WEATHER DATA  
 WIND FORCE = 2 SEA STATE = 1  
 WIND DIRECTION = 266-274 DEGR WAVE DIRECTION = 266-274 DEGR  
 AIR TEMP = 24.4C CLOUD TYPE = 9  
 WEATHER CODE = 1 CLOUD AMOUNT = 2  
 BAROMETRIC PRESSURE = 1028.4 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	02	ADU	02A	PO4	NO3	SI	N:P	DOC
0	21.11	30.44	21.03	5.45	5.20	-1.39	.24	.4	17.3	1.7	2.64
12	20.01	34.22	24.19	5.29	5.19	-1.10	-1.72	.16	1.3	2.5	1.16

EASTWARD CRUISE 3 STATION 43 23/ 1V/74 16.6 GMT CONSECUTIVE STATION 43

LATITUDE = 31 29.5M LONGITUDE = 80 57.0M DEPTH = 12M

WEATHER DATA

WIND FORCE = 4 SEA STATE = 1  
WIND DIRECTION = 266-274 DEGR WAVE DIRECTION = 266-274 DEGR  
AIR TEMP = 24.4C CLOUD TYPE = 3  
WEATHER CODE = 1 CLOUD AMOUNT = 2  
BAROMETRIC PRESSURE = 1027.3 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	02	03	04	05	06	07	08	09	10
0	21.03	31.85	22.10	5.45	5.16	-1.23	-1.22	.26	1.4	5.9	5.4	2.58
11	20.49	33.30	23.74	5.34	5.15	-1.13	-1.34	.20	4.0	4.0	1.64	1.64

EASTWARD CRUISE 3 STATION 69 23/ 1V/74 19.0 GMT CONSECUTIVE STATION 44

LATITUDE = 31 12.2M LONGITUDE = 81 4.5M DEPTH = 13M

WEATHER DATA

WIND FORCE = 2 SEA STATE = 1  
WIND DIRECTION = 176-184 DEGR WAVE DIRECTION = 176-184 DEGR  
AIR TEMP = 25.0C CLOUD TYPE =  
WEATHER CODE = 0 CLOUD AMOUNT = 0  
BAROMETRIC PRESSURE = 1026.3 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	02	03	04	05	06	07	08	09	10
0	21.90	32.63	22.50			.29	.9	9.8	9.8	3.6	2.40	2.40

EASTWARD CRUISE 3 STATION 44 28° 14'74" 21.8 GMT CONSECUTIVE STATION 45

LATITUDE = 30 55.84 LONGITUDE = 81 17.04 DEPTH = 118

WEATHER DATA

WIND FORCE = 3 SEA STATE = 1  
 WIND DIRECTION = 176-184 DEGR WAVE DIRECTION = 176-184 DEGR  
 AIR TEMP = 22.80 CLOUD TYPE =  
 WEATHER CODE = 0 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1026.4 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	02	027	029	P04	M03	S1	M/P	DOC
0	22.55	34.58	33.77	5.43	4.94	-1.55	1.26	.3	3.3	1.2	2.03
10	21.19	35.19	34.61	5.52	5.05	-1.47	1.25	0.0	1.8	0.0	3.40

EASTWARD CRUISE 3 STATION 45 28° 14'74" 22.6 GMT CONSECUTIVE STATION 46

LATITUDE = 30 55.04 LONGITUDE = 81 12.94 DEPTH = 144

WEATHER DATA

WIND FORCE = 3 SEA STATE = 1  
 WIND DIRECTION = 176-184 DEGR WAVE DIRECTION = 176-184 DEGR  
 AIR TEMP = 22.20 CLOUD TYPE =  
 WEATHER CODE = 0 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1026.4 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	02	027	029	P04	M03	S1	M/P	DOC
0	22.44	35.30	34.83	5.43	5.16	-1.6	1.16	.3	1.3	1.9	2.40
12	21.18	35.39	34.76	5.54	5.04	-1.56	1.25	.2	1.8	.9	1.56



EASTWARD CRUISE 3 STATION 46 89° 1474 83.5 2M CONSECUTIVE STATION 47

LATITUDE = 30 52.94 LONGITUDE = 81 7.00 DEPTH = 15M

WEATHER DATA

WIND FORCE = 3  
WIND DIRECTION = 176-184 DEGP  
AIR TEMP = 23.30  
WEATHER CODE = 0  
BAROMETRIC PRESSURE = 1025.8 MB  
SEA STATE = 1  
WAVE DIRECTION = 176-184 DEGP  
CLOUD TYPE =  
CLOUD AMOUNT = 0  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	DE	ADJ	Q04	MS	SI	W/P	DOB
0	22.23	35.49	24.33	4.93	4.29	-1.32	.17	.2	1.8	1.3 1.50
14	21.07	35.30	25.13	4.93	5.04	.16	-.15	.22	1.0	0.0 4.5

EASTWARD CRUISE 3 STATION 47 89° 1474 1.1 6M CONSECUTIVE STATION 48

LATITUDE = 30 51.2N LONGITUDE = 80 54.5M DEPTH = 23M

WEATHER DATA

WIND FORCE = 3  
WIND DIRECTION = 176-184 DEGP  
AIR TEMP = 23.30  
WEATHER CODE = 0  
BAROMETRIC PRESSURE = 1027.1 MB  
SEA STATE = 1  
WAVE DIRECTION = 176-184 DEGP  
CLOUD TYPE =  
CLOUD AMOUNT = 0  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	DE	ADJ	Q04	MS	SI	W/P	DOB
0	21.75	35.29	23.29	5.26	4.26	-1.30	.14	.4	2.0	2.9 1.26
20	20.52	35.24	25.59	5.17	5.05	-.12	-.37	.13	1.3	1.3 1.26

EASTWARD CRUISE 3 STATION 48 23 14.74 5.7 5MT CONSECUTIVE STATION 49

LATITUDE = 30 49.7N LONGITUDE = 80 44.2W DEPTH = 39M

WEATHER DATA

WIND FORCE = 2 SEA STATE = 1  
 WIND DIRECTION = 176-184 DEGR WAVE DIRECTION = 176-184 DEGR  
 AIR TEMP = 21.10 CLOUD TYPE =  
 WEATHER CODE = 0 SWELL AMOUNT = 0  
 BAROMETRIC PRESSURE = 1027.1 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	0	02	04	06	08	10	12	14	16	18	20
0	21.33	26.53	25.59	5.23	4.99	7.23	7.42	.13	.4	2.0	3.1	1.16	
23	21.03	26.54	25.68	5.33	5.02	7.21	7.42	.15	.5	1.0	3.1	1.22	

EASTWARD CRUISE 3 STATION 49 23 14.74 5.3 5MT CONSECUTIVE STATION 50

LATITUDE = 30 46.0N LONGITUDE = 80 27.5W DEPTH = 39M

WEATHER DATA

WIND FORCE = 3 SEA STATE = 2  
 WIND DIRECTION = 135-144 DEGR WAVE DIRECTION = 136-144 DEGR  
 AIR TEMP = 21.70 CLOUD TYPE =  
 WEATHER CODE = 0 SWELL AMOUNT = 0  
 BAROMETRIC PRESSURE = 1026.1 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	0	02	04	06	08	10	12	14	16	18	20
0	21.94	26.33	25.31	5.12	4.84	7.12	7.27	.12	.3	1.2	1.2	1.30	
33	21.50	26.40	25.44	5.21	4.95	7.23	7.44	.07	.07	1.0	1.0	1.36	

EASTWARD CRUISE 3 STATION 50 29° 14'74 7.8 GMT CONSECUTIVE STATION 51

LATITUDE = 30 42.54 LONGITUDE = 50 10.4W DEPTH = 49M

WEATHER DATA

WIND FORCE = 3 SEA STATE = 2  
 WIND DIRECTION = 156-164 DEGR WAVE DIRECTION = 156-164 DEGR  
 AIR TEMP = 21.7C CLOUD TYPE =  
 WEATHER CODE = 0 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1025.1 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	Q2	Q2%	ADU	Q2A	PO4	MO3	SI	M/P	DOC
0	25.64	36.05	23.97	4.87	4.65	-0.22	-0.34	.05		1.9		4.64
25	25.22	36.06	24.10	4.84	4.68	-0.16	-0.28	.04		1.2		.92
49	24.94	36.06	24.19	4.98	4.70	-0.28	-0.41	.06		1.3		.96

EASTWARD CRUISE 3 STATION 51 29° 14'74 3.3 GMT CONSECUTIVE STATION 52

LATITUDE = 30 42.24 LONGITUDE = 30 5.5W DEPTH = 66M

WEATHER DATA

WIND FORCE = 2 SEA STATE = 1  
 WIND DIRECTION = 156-164 DEGR WAVE DIRECTION = 156-164 DEGR  
 AIR TEMP = 21.7C CLOUD TYPE =  
 WEATHER CODE = 0 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1024.4 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	Q2	Q2%	ADU	Q2A	PO4	MO3	SI	M/P	DOC
0	25.75	36.00	23.59	4.33	4.64	-0.13	-0.30	.05	.7	.8	14.0	1.04
25	25.75	36.02	23.90	4.87	4.64	-0.23	-0.35	.03	.4	1.8	13.3	.84
50	25.26	36.04	24.07	4.79	4.63	-0.11	-0.24	.03	.2	1.3	6.7	.84
56	24.80	36.05	24.23	4.80	4.71	-0.09	-0.22	.08	.4	.5	5.0	1.00

EASTWARD CRUISE 3 STATION 53 29% 14/74 13.5 SMT CONSECUTIVE STATION 52

LATITUDE = 30 14.04 LONGITUDE = 50 13.04 DEPTH = 72M

WEATHER DATA

WIND FORCE = 1 SEA STATE = 0  
WIND DIRECTION = 216-224 DEGR WAVE DIRECTION = DEGR  
AIR TEMP = 26.10 CLOUD TYPE = 3  
WEATHER CODE = 1 CLOUD AMOUNT = 2  
BAROMETRIC PRESSURE = 1026.8 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	0	02	04	08	12	16	20	24	SI	MZR	DDC
0	22.98	35.04	24.75	5.36	4.86	7.50	7.70	.04	0.0	2.6	0.0	.84	
30	17.65	35.38	26.05	3.95	5.37	1.42	1.23	.56	10.4	2.4	13.6	.72	
50	16.92	36.06	25.36	3.43	5.44	2.01	1.03	.61	11.8	2.3	13.3	.72	
72	16.78	36.01	26.36	3.42	5.43	3.03	1.04	.62	12.3	2.3	13.6	.50	

EASTWARD CRUISE 3 STATION 54 29% 14/74 13.1 SMT CONSECUTIVE STATION 54

LATITUDE = 30 13.04 LONGITUDE = 50 13.70 DEPTH = 46M

WEATHER DATA

WIND FORCE = 1 SEA STATE = 0  
WIND DIRECTION = 216-224 DEGR WAVE DIRECTION = DEGR  
AIR TEMP = 26.70 CLOUD TYPE = 8  
WEATHER CODE = 1 CLOUD AMOUNT = 2  
BAROMETRIC PRESSURE = 1026.8 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	0	02	04	08	12	16	20	24	SI	MZR	DDC
0	23.26	36.03	24.66	5.26	4.84	7.46	7.61	.06	0.0	0.0	0.0	.84	
23	19.92	35.35	25.53	4.50	5.14	.64	.29	.43	10.4	2.3	13.3	.72	
44	19.57	35.97	25.64	4.21	5.17	.96	.59	.35	6.0	5.0	17.1	.62	

EASTWARD CRUISE 3 STATION 60 29/ IV/74 16.4 GMT CONSECUTIVE STATION 55

LATITUDE = 30 16.30 LONGITUDE = 80 20.00 DEPTH = 30M

WEATHER DATA

WIND FORCE = 1 SEA STATE = 0  
WIND DIRECTION = 216-224 DEGR WAVE DIRECTION = DEGR  
AIR TEMP = 26.7C CLOUD TYPE =  
WEATHER CODE = 0 CLOUD AMOUNT = 0  
BAROMETRIC PRESSURE = 1026.8 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	DE	DSZ	ADU	DSZ	FD4	MD3	SI	M/P	DJG
0	24.08	36.05	24.44	5.17	4.77	-1.40	-1.56	.05	1.4	.2	23.0	.93
30	23.07	36.06	24.74	5.10	4.86	-1.24	-1.44	.08	.4	1.5	5.0	

EASTWARD CRUISE 3 STATION 61 29/ IV/74 17.3 GMT CONSECUTIVE STATION 56

LATITUDE = 30 13.5N LONGITUDE = 80 40.4W DEPTH = 30M

WEATHER DATA

WIND FORCE = 1 SEA STATE = 1  
WIND DIRECTION = 266-274 DEGR WAVE DIRECTION = 266-274 DEGR  
AIR TEMP = 25.6C CLOUD TYPE =  
WEATHER CODE = 0 CLOUD AMOUNT = 0  
BAROMETRIC PRESSURE = 1025.7 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	DE	DSZ	ADU	DSZ	FD4	MD3	SI	M/P	DJG
0	22.85	36.05	24.79	5.07	4.87	-1.20	-1.40	.03	.3	2.0	10.0	1.04
30	21.76	36.67	25.27	5.15	4.36	-1.19	-1.41	.02	0.0	3.6	0.0	.75

EASTWARD CRUISE 3 STATION 62 29.1 1974 19.1 GMT CONSECUTIVE STATION 57

LATITUDE = 30 20.2N LONGITUDE = 50 56.0W DEPTH = 36M

WEATHER DATA

WIND FORCE = 1 SEA STATE = 0  
WIND DIRECTION = 266-274 DEGR WAVE DIRECTION = DEGR  
AIR TEMP = 25.00 CLOUD TYPE =  
WEATHER CODE = 0 CLOUD AMOUNT = 0  
BAROMETRIC PRESSURE = 1025.1 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	0	02	02'	ADJ	02A	204	ADJ	SI	M/P	DOC
0	22.21	36.31	25.17	5.15	4.92	-0.23	-0.42	.06	0.0	5.3	0.0	1.04
26	21.71	36.31	25.22	5.24	4.97	-0.27	-0.49	.05	.1	3.8	2.0	.80

EASTWARD CRUISE 3 STATION 63 29.1 1974 20.6 GMT CONSECUTIVE STATION 58

LATITUDE = 30 22.1N LONGITUDE = 51 3.5W DEPTH = 24M

WEATHER DATA

WIND FORCE = 2 SEA STATE = 1  
WIND DIRECTION = 136-144 DEGR WAVE DIRECTION = 136-144 DEGR  
AIR TEMP = 23.20 CLOUD TYPE =  
WEATHER CODE = 0 CLOUD AMOUNT = 0  
BAROMETRIC PRESSURE = 1024.0 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	0	02	02'	ADJ	02A	204	ADJ	SI	M/P	DOC
0	22.91	36.46	25.09	5.16	4.56	-0.30	-0.45	.13	0.0	.5	0.0	.96
22	22.20	36.45	25.29	5.22	4.92	-0.36	-0.47	.13	0.0	.9	0.0	1.26

EASTWARD CRUISE 3 STATION 54 29° 14'74" 22.2 SMT CONSECUTIVE STATION 59

LATITUDE = 20 24.64 LONGITUDE = 31 14.30 DEPTH = 17M

WEATHER DATA

WIND FORCE = 2 SEA STATE = 1  
WIND DIRECTION = 136-144 DEGR WAVE DIRECTION = 136-144 DEGR  
AIR TEMP = 24.40 CLOUD TYPE =  
WEATHER CODE = 0 CLOUD AMOUNT = 0  
BAROMETRIC PRESSURE = 1023.4 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	0	32	027	306	029	304	303	31	019	000
0	23.00	36.47	25.07	5.22	4.35	-1.37	-1.51	.12	0.0	2.2	0.0	1.04
15	22.18	36.47	25.33	5.28	4.93	-1.35	-1.53	.13	.1	3.2	.8	1.46

EASTWARD CRUISE 3 STATION 55 30° 14'74" 1.0 SMT CONSECUTIVE STATION 60

LATITUDE = 30 43.64 LONGITUDE = 31 13.00 DEPTH = 11M

WEATHER DATA

WIND FORCE = 2 SEA STATE = 1  
WIND DIRECTION = 136-144 DEGR WAVE DIRECTION = 136-144 DEGR  
AIR TEMP = 23.90 CLOUD TYPE =  
WEATHER CODE = 0 CLOUD AMOUNT = 0  
BAROMETRIC PRESSURE = 1023.4 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	0	32	027	306	029	304	303	31	019	000
0	22.30	36.24	25.04				.22	.1	3.0	.5	1.60	

EASTWARD CRUISE 3 STATION 66 30/ IV/74 4.5 GMT CONSECUTIVE STATION 61

LATITUDE = 31 9.5N LONGITUDE = 31 0.0W DEPTH = 14M

WEATHER DATA

WIND FORCE = 2 SEA STATE = 1  
WIND DIRECTION = 136-144 DEGR WAVE DIRECTION = 136-144 DEGR  
AIR TEMP = 21.7C CLOUD TYPE =  
WEATHER CODE = 0 CLOUD AMOUNT = 0  
BAROMETRIC PRESSURE = 1023.4 MB VISIBILITY CODE =

OBSERVATIONS

Z T S D 02 02/ ADU 02A P04 M03 SI M/P DOC  
0 21.55 34.84 24.24 .29 1.1 1.9 3.3

EASTWARD CRUISE 3 STATION 67 30/ IV/74 11.0 GMT CONSECUTIVE STATION 62

LATITUDE = 31 41.0N LONGITUDE = 30 41.0W DEPTH = 14M

WEATHER DATA

WIND FORCE = 3 SEA STATE = 2  
WIND DIRECTION = 196-204 DEGR WAVE DIRECTION = 196-204 DEGR  
AIR TEMP = 21.7C CLOUD TYPE =  
WEATHER CODE = 0 CLOUD AMOUNT = 0  
BAROMETRIC PRESSURE = 1020.0 MB VISIBILITY CODE =

OBSERVATIONS

Z T S D 02 02/ ADU 02A P04 M03 SI M/P DOC  
0 21.10 33.93 23.68 .26 1.9



EASTWARD CRUISE 3 STATION 63 307 IV74 13.5 SMT CONSECUTIVE STATION 63

LATITUDE = 31 59.0M LONGITUDE = 80 7.5M DEPTH = 22M

WEATHER DATA

WIND FORCE = 1 SEA STATE = 1  
WIND DIRECTION = 216-224 DEGR WAVE DIRECTION = 216-224 DEGR  
AIR TEMP = 21.1C CLOUD TYPE =  
WEATHER CODE = 0 CLOUD AMOUNT = 0  
BAROMETRIC PRESSURE = 1019.3 MB VISIBILITY CODE =

OBSERVATIONS

Z T S D 02 02' HQD 02A P04 N03 31 M/P 000  
0 21.50 34.10 23.75 .22 1.0 4.0 5.9

SURFACE DRIFTER DATA

Two drift bottles were released at each of the following stations:  
 1, 3, 4, 17, 18, 20, 21, 23, 24, 40, 41, 43, 44, 46, 47, 62, 63, 64.

Release/recovery information is summarized in the following table:

CRUISE AND PROJECT NO. E-3-74
INSTITUTE Scripps Institution
NAME OF PLATFORM R/V EASTWARD

DRIFT BOTTLE CODING FORM

(Provisional)

NATIONAL OCEANOGRAPHIC DATA CENTER  
 WASHINGTON, D. C. 20390

NODC REFERENCE NUMBER	RELEASE INFORMATION												RECOVERY INFORMATION												NODC	
	C	INST. ID CODE	SHIP CODE	YEAR	MONTH	DAY	TIME	LATITUDE S = 2.77	LONGITUDE E = 12.32	DIS. FROM SHORE	INC. REL. D	BOTTLE NUMBER	YEAR	MONTH	DAY	LATITUDE S = 2.56	LONGITUDE E = 12.31	A	B	RETRNG	WATERS AMTS. DATED	DAYS ADJST.	SPEED	C	DIRC. NO.	
1	0	01	01	04	04	29	17	30	22	1	0	92	04	29	32	49	00	0	23	0	14	0	1	2	10	
2	0	01	01	04	04	29	17	30	22	1	0	95	04	29	32	49	00	0	23	0	15	0	1	8	10	
3	0	01	01	04	04	29	17	30	22	1	0	92	04	29	32	49	00	0	23	0	14	0	1	2	10	
4	0	01	01	04	04	29	17	30	22	1	0	95	04	29	32	49	00	0	23	0	15	0	1	8	10	
17	0	01	01	04	04	29	17	30	22	1	0														10	
18	0	01	01	04	04	29	17	30	22	1	0														10	
20	0	01	01	04	04	29	17	30	22	1	0														10	
21	0	01	01	04	04	29	17	30	22	1	0														10	
23	0	01	01	04	04	29	17	30	22	1	0														10	
24	0	01	01	04	04	29	17	30	22	1	0														10	
40	0	01	01	04	04	29	17	30	22	1	0														10	
41	0	01	01	04	04	29	17	30	22	1	0														10	
43	0	01	01	04	04	29	17	30	22	1	0														10	
44	0	01	01	04	04	29	17	30	22	1	0														10	
46	0	01	01	04	04	29	17	30	22	1	0														10	
47	0	01	01	04	04	29	17	30	22	1	0														10	
62	0	01	01	04	04	29	17	30	22	1	0														10	
63	0	01	01	04	04	29	17	30	22	1	0														10	
64	0	01	01	04	04	29	17	30	22	1	0														10	

CHLOROPHYLL AND CARBON-<sup>14</sup> PRODUCTIVITY DATA\*Table 2. Chlorophyll  $\alpha$  and C<sup>14</sup> uptake with respect to depth.

<u>Station</u>	<u>Depth (m)</u>	<u>Chlorophyll <math>\alpha</math> (mg/m<sup>3</sup>)</u>	<u>C<sup>14</sup> uptake mgC/m<sup>3</sup>/day</u>
1	0	1.278	4.84
	4	1.534	7.31
	10	.900	1.58
4	0	.319	0.76
	5	.460	3.20
	10	.672	2.21
	16	.841	2.52
6	0	.308	1.88
	6	.333	0.98
	12	.413	0
	20	.413	2.64
	40	.796	0.46
15	0	.133	18.54
	6	.787	7.63
	11	1.102	27.60
	18	.105	9.84
	35	.027	2.77
17	0	.282	9.11
	6	.252	3.13
	13	.216	4.82
20	0	.806	11.09
	5	1.622	26.06
	9	1.534	11.06
21	0	.973	18.87
	4	1.150	18.15
	7	1.150	12.43
	13	1.150	1.40
23	0	.459	-
	17	-	-
24	0	.261	-
	21	-	-
25	0	.009	3.18
	4	.010	4.11
	8	.017	1.62
	12	.035	1.94
	25	.014	0.45
	27	-	-
26	0	.596	-
	40	-	-

Table 2. (continued)

<u>Station</u>	<u>Depth</u> <u>(m)</u>	<u>Chlorophyll a</u> <u>(mg/m<sup>3</sup>)</u>	<u>C<sup>14</sup> uptake</u> <u>mgC/m<sup>3</sup>/day</u>
27	0	.010	3.006
	6	.014	.702
	12	.014	1.170
	20	.011	.954
	40	2.212	4.440
28	0	.180	-
	25	-	-
	50	-	-
	75	-	-
29	0	.560	-
	25	-	-
	50	-	-
	75	-	-
	125	-	-
	180	-	-
30	0	.990	-
	23	-	-
	46	-	-
	69	-	-
	92	-	-
	139	-	-
	167	-	-
	243	-	-
31	0	.056	-
	25	-	-
	49	-	-
	74	-	-
	98	-	-
	128	-	-
32	0	.059	-
	24	-	-
	48	-	-
	73	-	-
	96	-	-
	120	-	-
	144	-	-
	193	-	-
	306	-	-
437	-	-	
38	0	.207	.210
	6	.243	1.702
	11	.198	1.194
	18	.216	3.672
	35	.189	1.65

Table 2. (Continued)

<u>Station</u>	<u>Depth</u> <u>(m)</u>	<u>Chlorophyll <math>\alpha</math></u> <u>(mg/m<sup>3</sup>)</u>	<u>C<sup>14</sup> uptake</u> <u>mgC/m<sup>3</sup>/day</u>
40	0	.702	2.84
	4	1.003	3.89
	8	.639	2.68
	13.5	1.003	12.54
43	0	1.298	3.95
	3	1.416	21.20
	6	1.534	10.52
	10	1.563	8.46
44	0	1.357	10.23
	9	1.98	18.66
50	0	.037	0
	6	.042	.52
	11	.026	0
	18	.063	0
	35	.114	.38
58	0	1.116	9.37
	5	.756	4.92
	10	2.596	17.77
	15	1.888	22.27
	30	.378	0.88
59	0	.944	-
	8	.944	-
	15	.369	-
62	0	.207	3.86
	8	.225	0.20
	15	.243	1.46
64	0	.513	.24
	5	.468	1.03
	16	1.000	1.55

Table 3. Surface chlorophyll  $a$ , depth integrated chlorophyll  $a$  and  $C^{14}$  values.

<u>Station</u>	<u>Surface Chlorophyll</u> mg/m <sup>3</sup>	<u>Depth Integrated Chlorophyll <math>a</math></u> mg/m <sup>2</sup>	<u>Depth Integrated <math>C^{14}</math></u> mgC/m <sup>2</sup> /day
1	1.278	12.9	51.0
2	.708		
3	.402		
4	.319	9.3	37.6
5	.457		
6	.308	19.6	53.1
7	.288		
8	.274		
9	.165		
10	.159		
11	.006		
12	.009		
13	.195		
14	.153		
15	.133	12.8	404.8
16	.826		
17	.282	3.2	64.5
18	.460		
19	.767		
20	.806	12.4	167.1
21	.973	14.6	161.4
22	.585		
23	.459	3.9	
24	.261	2.7	
25	.009	.5	49.1
26	.590	11.9	

Table 3. (continued)

<u>Station</u>	<u>Surface Chlorophyll</u> mg/m <sup>3</sup>	<u>Depth Integrated Chlorophyll a</u> mg/m <sup>2</sup>	<u>Depth Integrated C<sup>14</sup></u> mgC/m <sup>2</sup> /day
27	.010	22.5	79.2
28	.180	2.2	
29	.560	7.0	
30	.990	11.4	
31	.056	.7	
32	.059	.7	
33	.068		
34	.041		
35	.062		
36	.108		
37	.248		
38	.207	7.3	75.2
39	.207		
40	.702	10.8	64.6
41	.944		
42	1.003		
43	1.298	14.7	123.3
44	1.357	15.0	130.0
45	.944		
46	.688		
47	.457		
48	.457		
49	.083		
50	.037	2.2	6.1
51	.059		
58	1.116	41.3	366.2

Table 3. (continued)

<u>Station</u>	<u>Surface Chlorophyll</u> mg/m <sup>3</sup>	<u>Depth Integrated Chlorophyll <math>\alpha</math></u> mg/m <sup>2</sup>	<u>Depth Integrated C<sup>14</sup></u> mgC/m <sup>2</sup> /day
59	.873	12.1	
60	.096		
61	.112		
62	.207	3.4	22.0
63	.629		
64	.513	10.5	17.4



## PARTICULATE ORGANIC CARBON AND PARTICULATE NITROGEN

Table 4. Particulate Organic Carbon (POC) and Nitrogen (PN)

<u>Station</u>	<u>Depth</u> (m)	<u>POC</u> $\mu\text{gC/L}$	<u>PN</u> $\mu\text{gN/L}$	<u>C:N</u> (atomic)
1	0	749	49.8	17.8
2	0	354	-	-
4	0	295	22.4	15.4
4	16	330	-	-
7	0	334	26.3	14.8
10	0	366	21.0	20.3
12	0	209	21.3	11.5
16	0	386	32.4	13.9
17	0	160	18.6	10.0
17	13	230	-	-
19	0	271	26.3	12.0
20	0	294	31.6	10.8
20	9	336	-	-
21	0	312	31.9	11.4
21	13	361	-	-
22	0	300	31.1	11.3
24	0	459	-	-
25	0	209	17.4	14.0
25	40	134	-	-
30	0	244	-	-
38	0	131	7.0	21.8
38	35	134	-	-
40	0	269	16.5	19.0
40	14	257	-	-
42	0	332	-	-
35	0	82	-	-
43	0	447	40	13.0
43	3	460	38	14.1
43	10	363	27	13.4
44	0	534	-	-
44	9	491	43.7	13.1
45	0	389	-	-
47	0	357	37.5	11.1
51	0	540	-	-
58	0	248	31.4	9.2
58	9	333	50.7	7.7
58	15	262	31.4	9.8
60	0	442	-	-
62	0	154	13.2	13.7
62	15	174	-	-
64	0	292	19.6	17.4
64	16	280	-	-

Means  $\pm$  1 s.d. :327 $\pm$ 14127.0 $\pm$ 10.714.1 $\pm$ 3.5

Table 5. Concentration of Mercury in Continental Shelf Waters (nanograms/liter)

Station #	<u>Mercury Concentrations (ng/l)</u>	
	April 1974	
1	300	
3	260	
5	370	
7	240	
9	200	
12	120	
14	75	
16	160	
18	58	
20	82	
21	43	
23	134	
25	75	
27	56	
29	62	
31	68	
33	105	
35	58	
27	81	
39	75	
41	97	
43	66	
44	120	
46	73	
48	56	
51	84	
58	68	
60	43	
62	47	
64	58	
<hr/>		
Average	110	
Minimum	43	
Maximum	300	

Table 6. Mean grain size, sorting, skewness and kurtosis (Folk and Ward values) for sediments from E-3-74. All values in phi ( $\phi$ ) where applicable.

Station #	Mz	I	Sk	Kg
4	0.92	0.82	-0.17	0.94
6	1.47	0.59	-0.06	1.01
8	3.74	0.86	-0.07	0.89
13	2.43	0.35	-0.07	1.21
16	0.92	0.80	-0.13	0.92
19	2.17	0.45	-0.18	1.25
22	1.97	0.63	-0.41	1.34
23	1.33	0.90	-0.84	0.98
26	0.87	1.03	-0.05	0.93
28	0.11	1.15	0.07	1.00
29	3.82	0.91	-0.09	0.99
36	1.19	0.59	-0.23	1.09
37	1.14	0.64	0.04	0.95
40	0.63	0.87	-0.03	1.05
41	0.80	1.04	-0.04	1.21
44	2.59	0.46	-0.01	1.22
48	0.94	1.01	-0.14	1.04
49	1.10	0.74	-0.11	0.99

Table 7. Organic material in continental shelf sediments E-3-74.

Station #	$\bar{x}$ (%)	$S_{\bar{x}}$ 05	$\bar{x} \pm S_{\bar{x}}$ .05
4	0.30	0.06	0.36 - 0.24
6	0.42	0.04	0.46 - 0.38
8	2.77	0.25	3.02 - 2.51
13	0.93	0.34	1.28 - 0.59
16	0.38	0.08	0.46 - 0.30
19	0.28	0.14	0.42 - 0.14
22	0.41	—	
23	0.30	0.06	0.36 - 0.24
26	0.29	0.10	0.39 - 0.19
28	0.92	0.28	1.20 - 0.64
29	2.42	0.72	3.14 - 1.70
36	0.37	0.06	0.43 - 0.31
37	0.31	0.11	0.42 - 0.20
40	0.39	0.04	0.43 - 0.35
41	0.62	0.07	0.69 - 0.55
44	0.38	0.01	0.39 - 0.37
48	0.44	0.06	0.50 - 0.38
49	0.41	0.04	0.45 - 0.37

## SURFACE OBSERVATIONS

The following log was kept to note any surface observations. Realize the log was informally kept and was just an aid in data analysis.

<u>Time - Date</u>	<u>Nearby Station</u>	<u>Observations</u>
1415 24/4/74	cruising to Sta. 1	Scattered Ctenophores
1600 "	" " " "	" " less than at 1415
1715 "	Off Charleston	<i>Stomolophus</i> - med-large
1745 "	Sta. 1	" " "
0800 26/4/74	17-18	<i>Spartina</i> - <i>Chrysaora</i> -like
0845 "	18	<i>Chrysaora</i> & Ctenophores
0915 "	19	" " + heavy plankton
1030 "	20	heavy plankton
1125 "	to 21	large numbers of Ctenophores
1315 "	to 21	" " " " 2 <i>Chrysaora</i>
00 "	to 21	few Ctenophores
1500 "	21	" "
1610 "	22	Ctenophores
1700 "	23	more miserable Ctenophores
1800 "	between 23-24	<i>Trichodesmium</i> off port
0830 28/4/74	between 39-40	few <i>Aurelia</i> large numbers small <i>Chrysaora</i>
0915 "	40	" " " " " "
1030 "	40-41	fewer <i>Chrysaora</i> & <i>Aurelia</i> than above
1045 "	41	" " " " " on 40
1145 "	42-43	<i>Stomolophus</i> med-large many
1230 "	43	" " " "
1430 "	43-44	" " " "
1530 "	43-44	" " " "
1630 "	43-44	No <i>Stomolophus</i>
1730 "	43-44	small numbers of <i>Stomolophus</i>
1900 "	45	<i>Stomolophus</i> galore
2100 "	47	<i>Chrysaora</i> (3", lots - 1/m <sup>3</sup> )
1030 30/4/74	Savannah tower	<i>Stomolophus</i>

APPENDIX B

Cruise E-12-74 Data

## RUNOFF AND WEATHER

The observed weather at each station is listed with the hydrographic data. A poorly organized stationary front was the dominant weather feature during the cruise. Low pressure areas occasionally developed in the south-east states and in general moved northeast. Winds were light the duration of the cruise.

River flow from the three principal rivers (Altamaha, Savannah, and Cooper) are summarized in the following table:

Table 1. River flow data for principal rivers. Average daily flow rates ( $\text{km}^3/\text{day}$ ) are shown.

Date	Altamaha	Savannah	Cooper	Total
23 June 1974	.0176	.0204	.0248	.0628
24	.0166	.0207	.0130	.0503
25	.0165	.0202	.0182	.0549
26	.0168	.0191	.0137	.0496
27	.0171	.0185	.0213	.0569
28	.0163	.0191	.0334	.0688
29	.0147	.0199	.0263	.0609
30	.0134	.0194	.0256	.0584
1 July	.0124	.0195	.0375	.0694
2	.0115	.0194	.0371	.0680
3	.0108	.0187	.0241	.0536
4	.0104	.0187	.0183	.0474
5	.0103	.0194	.0146	.0443
6	.0103	.0202	.0117	.0422
7	.0104	.0211	.0116	.0431
8	.0111	.0219	.0260	.0590
9	.0110	.0214	.0409	.0733
10	.0120	.0208	.0409	.0737
11	.0125	.0205	.0454	.0784
12	.0125	.0215	.0372	.0712
13	.0126	.0231	.0281	.0638
14	.0133	.0242	.0195	.0570
15	.0138	.0244	.0362	.0744
16	.0139	.0228	.0327	.0694
17	.0138	.0203	.0334	.0675
18	.0125	.0186	.0353	.0664
19	.0113	.0186	.0392	.0691
20	.0106	.0192	.0350	.0648
21	.0107	.0198	.0189	.0494
22	.0110	.0204	.0272	.0586
23	.0110	.0206	.0273	.0589
24	.0115	.0195	.0329	.0639
25	.0121	.0187	.0318	.0626
26	.0123	.0186	.0347	.0656
27	.0127	.0193	.0158	.0478
28	.0136	.0197	.0309	.0642
29	.0144	.0199	.0341	.0684
30	.0144	.0202	.0371	.0717
31	.0135	.0195	.0320	.0650

## HYDROGRAPHIC DATA

The following printout are from a program developed at Skidaway Institute using NODC format data as input.

The headings indicate the following:

1. STATION: A number referring to a geographic position in the sampling grid.
2. CONSECUTIVE STATION: A number based on the chronological order of stations (NODC consecutive number).
3. WEATHER CODE: Weather based on WMO code 4501.
4. CLOUD TYPE: Cloud type based on WMO code 0400.
5. CLOUD AMOUNT: Cloud amount based on WMO code 2700.
6. VISIBILITY CODE: not given.
7. Z: Depth in meters.
8. T: Temperature in degrees Celsius.
9. S: Salinity in ppt.
10. D: Density in sigma-t units.
11. O<sub>2</sub>: Oxygen concentration in mg O<sub>2</sub>/L.
12. O<sub>2</sub>: Oxygen saturation based on UNESCO tables.
13. AO<sub>2</sub>: O<sub>2</sub>-O<sub>2</sub>.
14. O<sub>2</sub>A: Oxygen anomaly based on Richards and Redfield (Deep-Sea Research, 1955, 2:182-199).
15. PO<sub>4</sub>: micromoles liter<sup>-1</sup>.
16. NO<sub>3</sub>: micromoles liter<sup>-1</sup>.
17. SI: micromoles liter<sup>-1</sup>.
18. N/P: Nitrate phosphate ratio.
19. DOC: Dissolved organic carbon (mg liter<sup>-1</sup>).



EASTWARD CRUISE 12 STATION 1 23/ VII/74 12.8 GMT CONSECUTIVE STATION 1

LATITUDE = 32 38.0N LONGITUDE = 79 47.0W DEPTH = 12M

WEATHER DATA

WIND FORCE = 0 SEA STATE = 0  
 WIND DIRECTION = DEGR WAVE DIRECTION = DEGR  
 AIR TEMP = 25.6C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 3  
 BAROMETRIC PRESSURE = 1017.6 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	02	02/	ADU	02A	PO4	NO3	SI	M*P	DOC
0	27.41	34.92	22.55	4.31	4.54	-0.27	-0.50	.18	0.0	.9	0.0	1.98
12	27.34	34.10	21.95	4.65	4.57	-0.03	-0.44	.25	.7	.2	2.8	1.80

EASTWARD CRUISE 12 STATION 2 23/ VII/74 14.3 GMT CONSECUTIVE STATION 2

LATITUDE = 32 35.0N LONGITUDE = 79 42.5W DEPTH = 15M

WEATHER DATA

WIND FORCE = 1 SEA STATE = 0  
 WIND DIRECTION = 36- 44 DEGR WAVE DIRECTION = DEGR  
 AIR TEMP = 27.9C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 3  
 BAROMETRIC PRESSURE = 1017.9 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	02	02/	ADU	02A	PO4	NO3	SI	M*P	DOC
0	26.39	34.94	22.89	4.55	4.62	.07	-0.19	.22	.5	.1	2.3	1.50
15	26.28	34.98	22.95	4.55	4.62	.07	-0.18	.22	.1	1.7	.5	1.46

EASTWARD CRUISE 12 STATION 3 23/ VII/74 16.0 GMT CONSECUTIVE STATION 3

LATITUDE = 32 32.0N LONGITUDE = 79 38.0W DEPTH = 20M

WEATHER DATA

WIND FORCE = 1  
WIND DIRECTION = 36- 44 DEGR  
AIR TEMP = 27.8C  
WEATHER CODE = 1  
BAROMETRIC PRESSURE = 1017.6 MB  
SEA STATE = 1  
WAVE DIRECTION = 36- 44 DEGR  
CLOUD TYPE = 8  
CLOUD AMOUNT = 3  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	O2	O2'	ADU	O2A	PO4	NO3	SI	N/P	DOC
0	26.44	34.91	22.85	4.65	4.61	-0.04	-0.30	.26	.5	.6	1.9	1.56
19	26.37	34.94	22.90	4.50	4.62	.12	-0.14	.16	0.0	.9	0.0	1.32

EASTWARD CRUISE 12 STATION 4 23/ VII/74 19.2 GMT CONSECUTIVE STATION 4

LATITUDE = 32 26.7N LONGITUDE = 79 27.8W DEPTH = 19M

WEATHER DATA

WIND FORCE = 2  
WIND DIRECTION = 4-356 DEGR  
AIR TEMP = 28.3C  
WEATHER CODE = 1  
BAROMETRIC PRESSURE = 1017.3 MB  
SEA STATE = 1  
WAVE DIRECTION = 36- 44 DEGR  
CLOUD TYPE = 8  
CLOUD AMOUNT = 6  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	O2	O2'	ADU	O2A	PO4	NO3	SI	N/P	DOC
0	27.26	35.13	22.76	4.76	4.54	-0.22	-0.42	.05	.4	.3	8.0	1.22
13	25.29	35.35	23.54	4.55	4.69	.14	-0.03	.14	.4	.7	2.9	1.40

EASTWARD CRUISE 12 STATION 5 23/ VII/74 20.0 GMT CONSECUTIVE STATION 5

LATITUDE = 32 21.4M LONGITUDE = 79 17.9M DEPTH = 36M

WEATHER DATA

WIND FORCE = 2 SEA STATE = 1  
 WIND DIRECTION = 36- 44 DEGR WAVE DIRECTION = 36- 44 DEGR  
 AIR TEMP = 27.2C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 6  
 BAROMETRIC PRESSURE = 1015.3 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	02	027	ADU	028	PO4	NO3	SI	MP	DOC
0	27.37	35.20	22.77	4.76	4.53	-0.23	-0.42	0.07	0.3	0.6	4.3	1.32
15	27.01	35.27	22.94	4.44	4.56	.12	-0.07	0.04	0.5	0.4	12.5	1.36
35	22.51	36.12	24.95	3.97	4.90	.93	0.72	0.15	0.9	1.7	6.0	1.08

EASTWARD CRUISE 12 STATION 6 23/ VII/74 21.5 GMT CONSECUTIVE STATION 6

LATITUDE = 32 16.5N LONGITUDE = 79 9.2W DEPTH = 52M

WEATHER DATA  
 WIND FORCE = 0 DEGR  
 WIND DIRECTION = DEGR  
 AIR TEMP = 26.7C  
 WEATHER CODE = 1  
 BAROMETRIC PRESSURE = 1015.9 MB  
 SEA STATE = 0  
 WAVE DIRECTION = DEGR  
 CLOUD TYPE = 3  
 CLOUD AMOUNT = 3  
 VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	O2	O2%	ADU	O2A	P04	MD3	SI	M/P	DDC
0	27.52	35.49	22.94	4.60	4.52	-0.08	-2.23	.07	.5	.6	7.1	1.12
20	27.08	35.67	23.22	4.81	4.54	-0.27	-4.40	.05	.7	.7	14.0	1.12
30	24.23	36.07	24.41	4.81	4.76	-0.05	-1.20	.09	.8	.9	8.9	1.08
50	21.72	36.17	25.21	4.16	4.97	.79	.55	.27	3.0	1.9	11.1	.84

EASTWARD CRUISE 12 STATION 7 23/ VII/74 23.0 GMT CONSECUTIVE STATION 7

LATITUDE = 32 14.0N LONGITUDE = 79 4.0W DEPTH = 70M

WEATHER DATA  
 WIND FORCE = 0 SEA STATE = 0  
 WIND DIRECTION = DEGR WAVE DIRECTION = DEGR  
 AIR TEMP = 27.8C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 3  
 BAROMETRIC PRESSURE = 1016.3 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	O2	O2'	ADU	DBA	PD4	MD3	SI	N/P	DOC
0	27.58	35.65	23.05	4.75	4.51	-0.24	-0.36	.06	0.0	.7	0.0	1.26
25	26.85	35.71	23.33	5.10	4.56	-0.54	-0.67	.06	.5	1.1	1.8	1.40
50	21.11	36.22	25.41	4.05	5.02	.97	.72	.28	.5	2.5	1.8	.96
60	20.71	36.26	25.55	3.86	5.06	1.20	.93	.34	.5	3.2	1.8	1.00

EASTWARD CRUISE 12 STATION 3 24/ VII/74 1.0 GMT CONSECUTIVE STATION 8

LATITUDE = 32 11.0N LONGITUDE = 73 53.5W DEPTH = 200M

WEATHER DATA

WIND FORCE = 0 SEA STATE = 0  
 WIND DIRECTION = DEGR WAVE DIRECTION = DEGR  
 AIR TEMP = 26.70 CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 5  
 BAROMETRIC PRESSURE = 1016.3 MB VISIBILITY CODE =

Z	T	S	D	D2	D2%	ADU	DBR	FD4	MD3	SI	M/P	DDC
0	27.45	36.02	23.36	4.70	4.51	-0.13	-0.26	.03	.4	9	13.3	1.04
24	26.75	35.89	23.49	4.72	4.56	-0.16	-0.26	.02	1.1	5	55.0	.96
48	22.20	36.21	25.10	4.62	4.93	.31	.10	.06	.6	1.7	10.0	5.10
72	20.03	36.22	25.69	3.66	5.12	1.46	1.15	.49	7.7	3.7	15.7	3.36
96	18.96	36.25	26.01	3.44	5.22	1.73	2.32	.52	9.1	7.7	17.5	3.70
146		36.07		3.30			.71			5.6		.58
193	13.73	35.73	26.32	3.30	5.80	2.50	.36	1.16	19.5	8.4	16.3	2.78

OBSERVATIONS

EASTWARD CRUISE 12 STATION 9 24/ VII/74 4.6 5MT CONSECUTIVE STATION 9

LATITUDE = 32 5.0N LONGITUDE = 78 43.3W DEPTH = 400M

WEATHER DATA

WIND FORCE = 1 SEA STATE = 0  
 WIND DIRECTION = 136-144 DEGR WAVE DIRECTION = DEGR  
 AIR TEMP = 26.1C CLOUD TYPE =  
 WEATHER CODE = 0 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1016.9 MB VISIBILITY CODE =

Z	T	S	D	O2	O2V	ADU	O2A	PO4	NO3	SI	N/P	DOC
0	27.93	35.90	23.05	4.62	4.43	-.14	-.23	0.00		.9		.62
25	27.56	35.90	23.24	4.64	4.50	-.14	-.22	.10	.5	.7	5.0	
50	25.35	36.13	24.11	4.76	4.67	-.03	-.20	.14	.7	1.0	5.0	.66
75	22.22	36.38	25.22	3.97	4.92	.95	.77	.15	3.5	1.8	23.3	.50
100	19.93	36.19	25.71	3.85	5.13	1.28	.96	.57		3.2		.62
149	16.00	36.03	26.56	3.29	5.54	2.25	.70	.93	15.1	6.0	16.2	.54
195	12.23	35.43	26.95	3.10	6.00	2.90	.51	1.42	22.8	10.3	16.1	.58
290	9.46	35.13	27.16	2.98	6.38	3.40	.73	1.77	17.4	14.5	9.8	.76
386	8.99	35.38	27.44	3.03	6.44	3.41	1.14	1.72	24.3	17.2	14.1	.44

OBSERVATIONS

EASTWARD CRUISE 12 STATION 10 24/ VII/74 6.8 GMT CONSECUTIVE STATION 10

LATITUDE = 32 0.0N LONGITUDE = 78 38.6W DEPTH = 390M

WEATHER DATA

WIND FORCE = 3 SEA STATE = 2  
 WIND DIRECTION = 136-144 DEGR WAVE DIRECTION = 136-144 DEGR  
 AIR TEMP = 26.1C CLOUD TYPE = 5  
 WEATHER CODE = 1 CLOUD AMOUNT = 3  
 BAROMETRIC PRESSURE = 1015.9 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	O2	O2'	ADU	O2A	PO4	NO3	SI	N/P	DOC
0	23.16	35.92	22.96	4.81	4.46	-0.35	-0.44	0.02	.6	1.2	30.0	4.40
23	23.04	35.96	23.13	4.76	4.47	-0.29	-0.36	0.00		1.1		.96
47	25.74	35.19	23.28	4.81	4.66	-0.15	-0.39					.84
70	23.92	36.43	24.77	4.44	4.77	.33	.22	.04		.9		4.42
94	22.30	36.49	25.29	4.18	4.91	.73	.37	.16	0.0	1.1	0.0	.80
142	18.73	36.47	26.22	3.95	5.23	1.23	1.56	.55	6.2	3.3	11.3	.84
189	16.27	36.07	26.53	3.56	5.51	1.95	.43	.76	12.8	3.9	16.8	.80
279	12.34	35.49	26.93	3.08	5.99	2.91	.53	1.33	20.6	10.0	15.6	.68
370	11.87	35.47	27.00	3.12	6.05	2.93	.50	1.44	15.7	9.9	10.9	.66



EASTWARD CRUISE 12 STATION 11 247 VII/74 14.2 GMT CONSECUTIVE STATION 11

LATITUDE = 31 43.4N LONGITUDE = 79 8.0W DEPTH = 552M

WEATHER DATA

WIND FORCE = 1 SEA STATE = 1  
 WIND DIRECTION = 136-144 DEGR WAVE DIRECTION = 136-144 DEGR  
 AIR TEMP = 27.2C CLOUD TYPE = 5  
 WEATHER CODE = 1 CLOUD AMOUNT = 6  
 BAROMETRIC PRESSURE = 1018.3 MB VISIBILITY CODE =

OBSERVATIONS												
Z	T	S	D	O2	O2%	ADU	O2A	PO4	NO3	SI	N/P	DDC
0	28.44	35.50	22.65	4.59	4.45	-14	-27	.01	.3	.9	30.0	1.16
22	23.44	36.08	23.08	4.59	4.43	-16	-20	0.00	.4	1.0		1.04
44	27.06	36.20	23.63	4.68	4.53	-15	-20	.03	.3	1.2	10.0	1.10
67	25.31	36.30	24.10	4.62	4.63	.01	-06	.07	.5	1.7	7.1	.96
90	23.67	36.43	24.84	4.76	4.79	.03	-09	.03	0.0	.8	0.0	.96
134	19.12	36.40	26.08	3.40	5.20	1.80	2.05	.52	9.3	3.4	15.0	.86
180	15.39	36.13	26.64	3.50	5.54	2.04	.35	.61	14.0	5.2	22.0	.68
270	12.06	35.49	26.98	3.10	6.02	2.92	.51	1.06	19.5	3.3	18.4	.96
360	11.02	35.35	27.06	3.28	6.16	2.88	.36	1.32	25.1	12.5	19.0	.68
450	10.56	35.28	27.09	4.12	6.33	2.11	-.46	1.66	16.3	12.7	9.3	1.00

EASTWARD CRUISE 12 STATION 12 24/ VII/74 16.5 GMT CONSECUTIVE STATION 12

LATITUDE = 31 49.1N LONGITUDE = 79 17.1W DEPTH = 205M

WEATHER DATA

WIND FORCE = 1 SEA STATE = 1  
 WIND DIRECTION = 136-144 DEGR WAVE DIRECTION = 136-144 DEGR  
 AIR TEMP = 28.9C CLOUD TYPE = 5  
 WEATHER CODE = 1 CLOUD AMOUNT = 6  
 BAROMETRIC PRESSURE = 1018.3 MB VISIBILITY CODE =

Z	OBSERVATIONS				NO3	SI	M/P	WOC				
	T	S	D	O2								
0	28.35	35.32	22.92	4.71	4.45	-0.26	-0.34	.01	.4	1.0	40.0	.96
23	28.05	35.36	23.13	4.66	4.47	-0.19	-0.26	.01	0.0	.8	0.0	.68
46	25.50	35.23	24.14	4.36	4.65	-0.21	-0.30	.04	.1	1.0	2.5	.92
69	22.21	36.42	25.26	4.40	4.92	-0.52	.34	.07	1.0	1.0	14.3	.68
92	21.18	36.42	25.55	3.79	5.01	1.22	1.00	.24	5.1	2.1	21.3	.66
139	17.18	36.14	26.37	3.36	5.41	2.05	1.08	.74	13.2	6.1	17.8	1.50
185	14.38	35.30	26.71	3.36	5.67	2.31	.40	1.02	17.0	7.9	16.7	.66

EASTWARD CRUISE 12 STATION 13 24 JUL 74 13.5 GMT CONSECUTIVE STATION 13

LATITUDE = 31 52.2M LONGITUDE = 79 23.8M DEPTH = 85M

WEATHER DATA

WIND FORCE = 1 SEA STATE = 1  
 WIND DIRECTION = 176-184 DEGR WAVE DIRECTION = 176-184 DEGR  
 AIR TEMP = 27.2C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 7  
 BAROMETRIC PRESSURE = 1017.3 MB VISIBILITY CODE =

Z	T	S	D	Q2	Q21	ADU	Q2R	P04	N03	SI	W/P	DOC
0	28.00	35.96	23.14	4.65	4.47	-0.13	-0.25	.09	.1	.9	1.1	.88
25	27.42	35.96	23.33	4.65	4.51	-0.14	-0.22	.06	.2	5.4	3.3	.84
50	25.04	36.26	24.31	4.71	4.59	-0.02	-0.12	.09	.4	1.0	4.4	.76
75	20.32	36.26	25.50	3.78	5.04	1.26	1.00	.43	6.8	4.4	15.8	1.04
88	19.22	36.23	25.92	3.45	5.20	1.75	1.40	.58	9.6	5.9	16.6	1.12

OBSERVATIONS

EASTWARD CRUISE 12 STATION 14 24/ VII/74 21.1 5MT CONSECUTIVE STATION 14

LATITUDE = 31 54.6N LONGITUDE = 79 27.5W DEPTH = 65M

WEATHER DATA

WIND FORCE = 1  
 WIND DIRECTION = 176-184 DEGR  
 AIR TEMP = 26.7C  
 WEATHER CODE = 1  
 BAROMETRIC PRESSURE = 1016.6 MB

SEA STATE = 1  
 WAVE DIRECTION = 176-184 DEGR  
 CLOUD TYPE = 8  
 CLOUD AMOUNT = 7  
 VISIBILITY CODE = 1

OBSERVATIONS

Z	T	S	D	D2	D2%	ADU	D2A	P04	NO3	SI	N/P	DOC
0	27.63	36.12	23.38	4.60	4.49	-1.11	-0.16	.05	0.0	.9	0.0	.88
20	26.94	36.12	23.60	4.68	4.54	-1.14	-0.21	.04	.3	.9	7.5	.96
43	23.55	36.11	24.64	4.60	4.31	.21	.04	.19	1.4	2.4	7.4	1.04
63	21.23	36.24	25.39	3.87	5.01	1.14	.89	.38	5.7	4.4	15.0	.72

EASTWARD CRUISE 12 STATION 15 24/ VII/74 22.7 5MT CONSECUTIVE STATION 15

LATITUDE = 32 .3N LONGITUDE = 79 37.5W DEPTH = 40M

WEATHER DATA

WIND FORCE = 1  
 WIND DIRECTION = 176-184 DEGR  
 AIR TEMP = 27.2C  
 WEATHER CODE = 1  
 BAROMETRIC PRESSURE = 1017.3 MB

SEA STATE = 1  
 WAVE DIRECTION = 176-184 DEGR  
 CLOUD TYPE = 8  
 CLOUD AMOUNT = 7  
 VISIBILITY CODE = 1

OBSERVATIONS

Z	T	S	D	D2	D2%	ADU	D2A	P04	NO3	SI	N/P	DOC
0	27.99	36.05	23.21	4.91	4.47	-1.44	-0.50	.16	.6	.4	3.9	1.26
20	27.08	35.98	23.45	4.76	4.54	-1.22	-0.31	.09	.7	.9	7.8	1.50
40	22.98	36.13	24.82	4.13	4.86	.73	.54	.33	1.3	3.3	3.9	1.04

EASTWARD CRUISE 12 STATION 16 25/ VII/74 1.1 GMT CONSECUTIVE STATION 16

LATITUDE = 32 6.0M LONGITUDE = 79 47.0W DEPTH = 27M

WEATHER DATA

WIND FORCE = 1 SEA STATE = 1  
WIND DIRECTION = 176-184 DEGR WAVE DIRECTION = 176-184 DEGR  
AIR TEMP = 27.80 CLOUD TYPE = 8  
WEATHER CODE = 1 CLOUD AMOUNT = 3  
BAROMETRIC PRESSURE = 1017.3 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	02	02'	ADU	SEA	PO4	NO3	SI	M/P	DOC
0	27.03	35.46	23.08	4.75	4.55	-1.20	-1.36	.20	.4	.7	2.0	1.26
13	26.21	35.25	23.18	4.79	4.62	-1.17	-1.38	.12	.1	0.0	.8	1.40
16	25.46	35.67	23.73	4.56	4.67	.11	-1.06	.14		.8		1.36

EASTWARD CRUISE 12 STATION 17 25/ VII/74 3.0 GMT CONSECUTIVE STATION 17

LATITUDE = 32 11.5M LONGITUDE = 79 57.5W DEPTH = 20M

WEATHER DATA

WIND FORCE = 1 SEA STATE = 1  
WIND DIRECTION = 216-224 DEGR WAVE DIRECTION = 176-184 DEGR  
AIR TEMP = 27.20 CLOUD TYPE = 8  
WEATHER CODE = 1 CLOUD AMOUNT = 7  
BAROMETRIC PRESSURE = 1017.6 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	02	02'	ADU	SEA	PO4	NO3	SI	M/P	DOC
0	27.17	34.42	22.25	4.71	4.57	-1.14	-1.45	.10	0.0	1.0	0.0	1.26
19	26.73	35.43	23.15	4.76	4.58	-1.18	-1.36	.10	.3	.3	3.0	1.36

EASTWARD CRUISE 12 STATION 18 25/ VII/74 4.7 GMT CONSECUTIVE STATION 18

LATITUDE = 32 17.3N LONGITUDE = 80 2.1W DEPTH = 18M

WEATHER DATA

WIND FORCE = 1 SEA STATE = 1  
WIND DIRECTION = 216-224 DEGR WAVE DIRECTION = 216-224 DEGR  
AIR TEMP = 26.1C CLOUD TYPE = 8  
WEATHER CODE = 1 CLOUD AMOUNT = 2  
BAROMETRIC PRESSURE = 1017.6 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	O2	O2'	ADU	O2A	PO4	NO3	SI	M/P	DOC
0	27.87	35.11	22.55	4.71	4.50	-0.21	-0.40	.14	0.0	.3	0.0	1.26
18	27.84	35.14	22.57	4.68	4.50	-0.18	-0.37	.13	.1	.9	.8	1.35

EASTWARD CRUISE 12 STATION 19 25/ VII/74 5.6 GMT CONSECUTIVE STATION 19

LATITUDE = 32 19.3N LONGITUDE = 80 11.7W DEPTH = 17M

WEATHER DATA

WIND FORCE = 1 SEA STATE = 1  
WIND DIRECTION = 216-224 DEGR WAVE DIRECTION = 216-224 DEGR  
AIR TEMP = 26.1C CLOUD TYPE = 8  
WEATHER CODE = 1 CLOUD AMOUNT = 2  
BAROMETRIC PRESSURE = 1016.6 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	O2	O2'	ADU	O2A	PO4	NO3	SI	M/P	DOC
0	27.83	34.99	22.47	4.63	4.51	-0.12	-0.34	.09	.3	.2	3.3	1.26
17	27.81	34.99	22.47	4.75	4.51	-0.25	-0.47	.10	0.0	0.0	0.0	1.36

EASTWARD CRUISE 12 STATION 20 25/ VII/74 6.9 GMT CONSECUTIVE STATION 20

LATITUDE = 32 22.1N LONGITUDE = 80 16.2W DEPTH = 13M

WEATHER DATA

WIND FORCE = 3 SEA STATE = 1  
WIND DIRECTION = 176-184 DEGR WAVE DIRECTION = 176-184 DEGR  
AIR TEMP = 26.7C CLOUD TYPE = 8  
WEATHER CODE = 2 CLOUD AMOUNT = 8  
BAROMETRIC PRESSURE = 1016.3 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	D2	D2'	ADU	D2A	P04	M03	SI	N/P	DDC
0	27.91	34.43	22.02	4.40	4.51	.11	-1.18	.36	.4	.9	1.1	1.32
13	27.92	34.41	22.01	4.42	4.51	.09	-2.20	.42	0.0	.7	0.0	1.54

EASTWARD CRUISE 12 STATION 21 25/ VII/74 12.1 GMT CONSECUTIVE STATION 21

LATITUDE = 31 57.0N LONGITUDE = 80 42.5W DEPTH = 14M

WEATHER DATA

WIND FORCE = 2 SEA STATE = 2  
WIND DIRECTION = 216-224 DEGR WAVE DIRECTION = 216-224 DEGR  
AIR TEMP = 27.8C CLOUD TYPE = 6  
WEATHER CODE = 2 CLOUD AMOUNT = 8  
BAROMETRIC PRESSURE = 1017.6 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	D2	D2'	ADU	D2A	P04	M03	SI	N/P	DDC
0	27.73	33.88	21.67	4.35	4.54	-.01	-1.39	.50	.4	1.9	.8	1.12
12	27.96	34.23	21.93	4.21	4.51	.30	-0.00	.41	.2	1.3	.5	1.60

EASTWARD CRUISE 12 STATION 22 25/ VII/74 13.9 5MT CONSECUTIVE STATION 22

LATITUDE = 31 55.0N LONGITUDE = 80 33.2W DEPTH = 12M

WEATHER DATA

WIND FORCE = 2  
WIND DIRECTION = 216-224 DEGR  
AIR TEMP = 27.8C  
WEATHER CODE = 2  
BAROMETRIC PRESSURE = 1017.6 MB

SEA STATE = 1  
WAVE DIRECTION = 216-224 DEGR  
CLOUD TYPE = 6  
CLOUD AMOUNT = 8  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	02	02'	02"	02A	P04	NO3	SI	N/P	DDC
0	27.61	34.97	22.07	4.51	4.54	-0.07	-0.38	.44	0.0	.9	0.0	1.40
13	27.90	35.14	22.55	4.26	4.50	.24	.05	.39		.7		1.46

EASTWARD CRUISE 12 STATION 23 25/ VII/74 15.2 6MT CONSECUTIVE STATION 23

LATITUDE = 31 53.0N LONGITUDE = 80 34.2W DEPTH = 15M

WEATHER DATA

WIND FORCE = 2  
WIND DIRECTION = 216-224 DEGR  
AIR TEMP = 27.8C  
WEATHER CODE = 2  
BAROMETRIC PRESSURE = 1017.6 MB

SEA STATE = 1  
WAVE DIRECTION = 216-224 DEGR  
CLOUD TYPE = 8  
CLOUD AMOUNT = 8  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	02	02'	02"	02A	P04	NO3	SI	N/P	DDC
0	27.89	35.51	22.84	4.55	4.49	-0.06	-0.20	.42	.6	.6	1.4	1.12
13	27.91	35.53	22.85	4.45	4.49	.04	-0.10	.29	0.0	.7	0.0	1.12



EASTWARD CRUISE 12 STATION 24 25/ VII/74 19.7 GMT CONSECUTIVE STATION 24

LATITUDE = 31 48.5N LONGITUDE = 80 23.7W DEPTH = 20M

WEATHER DATA

WIND FORCE = 2  
WIND DIRECTION = 156-164 DEGR  
AIR TEMP = 28.30  
WEATHER CODE = 2  
BAROMETRIC PRESSURE = 1016.6 MB

SEA STATE = 1  
WAVE DIRECTION = 156-164 DEGR  
CLOUD TYPE = 8  
CLOUD AMOUNT = 8  
VISIBILITY CODE =

OBSERVATIONS

Z	I	S	D	O2	O2'	ADU	O2A	P04	NO3	SI	N/P	DOC
0	28.00	36.25	23.36					.22	.1	.5	.5	.88
20	27.75	36.25	23.44	4.81	4.48	-0.33	-0.36	.19	.8	.9	4.2	.96

EASTWARD CRUISE 12 STATION 25 25/ VII/74 21.5 GMT CONSECUTIVE STATION 25

LATITUDE = 31 44.2N LONGITUDE = 80 13.0W DEPTH = 31M

WEATHER DATA

WIND FORCE = 2  
WIND DIRECTION = 176-184 DEGR  
AIR TEMP = 28.30  
WEATHER CODE = 2  
BAROMETRIC PRESSURE = 1017.3 MB

SEA STATE = 1  
WAVE DIRECTION = 176-184 DEGR  
CLOUD TYPE = 5  
CLOUD AMOUNT = 8  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	O2	O2'	ADU	O2A	P04	NO3	SI	N/P	DOC
0	27.50	36.92	23.54	4.71	4.49	-0.22	-0.24	.11		.9		.80
31	27.35			4.67			.13	0.0	0.0	.9	0.0	1.00

EASTWARD CRUISE 12 STATION 26 25/ VII/74 23.1 GMT CONSECUTIVE STATION 26

LATITUDE = 31 39.6N LONGITUDE = 90 3.1W DEPTH = 41M

WEATHER DATA

WIND FORCE = 2  
WIND DIRECTION = 176-184 DEGR  
AIR TEMP = 28.9C  
WEATHER CODE = 2  
BAROMETRIC PRESSURE = 1017.3 MB  
SEA STATE = 1  
WAVE DIRECTION = 176-184 DEGR  
CLOUD TYPE = 5  
CLOUD AMOUNT = 8  
VISIBILITY CODE =

Z	T	S	D	O2	O2'	AOU	O2A	P04	MD3	SI	N/P	DOC
0	27.11	36.19	23.60	4.77	4.53	-0.24	-0.30	.18	.3	1.3	1.7	
20	26.52	36.17	23.78	4.67	4.57	-0.10	-0.17	.09	0.0	1.4	0.0	
33	25.70	36.29	24.13	4.66	4.63	-0.03	-0.10	.05	.2	.8	4.0	

EASTWARD CRUISE 12 STATION 27 26/ VII/74 .6 GMT CONSECUTIVE STATION 27

LATITUDE = 31 36.0N LONGITUDE = 79 53.7W DEPTH = 41M

WEATHER DATA

WIND FORCE = 2  
WIND DIRECTION = 216-224 DEGR  
AIR TEMP = 25.6C  
WEATHER CODE = 2  
BAROMETRIC PRESSURE = 1017.3 MB  
SEA STATE = 1  
WAVE DIRECTION = 216-224 DEGR  
CLOUD TYPE = 8  
CLOUD AMOUNT = 8  
VISIBILITY CODE =

Z	T	S	D	O2	O2'	AOU	O2A	P04	MD3	SI	N/P	DOC
0	27.00	36.09	23.55	4.39	4.54	-0.35	-0.42	.03	.3	3.5	26.7	.92
20	26.79	36.07	23.61	4.36	4.56	-0.30	-0.38	.12	.5	.7	4.2	.84
40	25.68	36.19	24.05	4.76	4.64	-0.12	-0.21	.05	.4	1.3	8.0	.72

EASTWARD CRUISE 12 STATION 28 26/ VII/74 3.0 GMT CONSECUTIVE STATION 28

LATITUDE = 31 31.5N LONGITUDE = 79 43.0W DEPTH = 53M

WEATHER DATA

WIND FORCE = 0 DEGR SEA STATE = 0  
 WIND DIRECTION = DEGR WAVE DIRECTION = DEGR  
 AIR TEMP = 25.60 CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 6  
 BAROMETRIC PRESSURE = 1017.3 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	D2	D27	HOU	DEA	FD4	NO3	SI	M/P	DOC
0	27.94	35.81	23.04	4.76	4.48	-1.28	-1.38	.05	.2	1.9	4.0	.92
20	27.76	35.83	23.12	4.33	4.49	-1.39	-1.48	.09	.7	1.3	23.3	.66
40	29.39	36.27	24.80	4.44	4.62	.38	.23	.21	1.6	1.6	7.6	.54
68	19.67	36.29	25.85	3.40	5.15	1.75	1.44	.67	7.3	4.2	10.3	.30

EASTWARD CRUISE 12 STATION 29 26/ VII/74 4.7 GMT CONSECUTIVE STATION 29

LATITUDE = 31 29.5M LONGITUDE = 79 33.5M DEPTH = 145M

WEATHER DATA

WIND FORCE = 3 SEA STATE = 2  
 WIND DIRECTION = 156-164 DEGR WAVE DIRECTION = COURSED  
 AIR TEMP = 25.6C CLOUD TYPE = 5  
 WEATHER CODE = 3 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1016.6 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	Q2	Q27	QDU	Q2A	PO4	MO3	SI	NWP	DOC
0	28.13	35.80	22.98	4.67	4.46	-1.21	-1.30	.17	.6	.6	3.5	1.00
25	27.58	36.30	23.54	4.60	4.43	-1.11	-1.13	.14	.5	1.5	3.6	.92
50	24.38	36.21	24.46	4.81	4.74	-1.07	-1.20	.21	1.2	1.6	5.7	1.04
75	21.04	36.32	25.51	3.23	5.03	1.20	.95	.38		2.4		.68
100	19.30	36.39	26.02	3.41	5.13	1.78	2.30	.56	5.7	2.5	10.2	.64
140	15.23	35.87	26.61	3.28	5.63	2.35	.62		16.0	3.4		.80

EASTWARD CRUISE 12 STATION 30 26/ VII/74 7.0 GMT CONSECUTIVE STATION 30

LATITUDE = 31 28.0N LONGITUDE = 79 32.5W DEPTH = 255M

WEATHER DATA

WIND FORCE = 3 SEA STATE = 2  
 WIND DIRECTION = 176-184 DEGR WAVE DIRECTION = 176-184 DEGR  
 AIR TEMP = 25.6C CLOUD TYPE = 5  
 WEATHER CODE = 6 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1016.6 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	Q2	Q27	ADU	Q3A	PD4	AD3	SI	M/P	DOC
0	23.59	35.69	22.74	4.50	4.43	-0.07	-0.16	.08	.3	.9	3.8	.36
23	23.54	35.84	22.87	4.81	4.43	-0.33	-0.45	.04	.2	6.8	5.0	1.00
45	26.16	36.19	23.90	4.62	4.60	-0.02	-0.10	.12	.2	1.0	1.7	.80
68	24.26	35.34	25.03	4.03	4.72	.64	.63	.09	0.0	1.1	0.0	.88
91	20.98	36.36	25.56	3.76	5.03	1.27	1.03	.25	.2	3.2	.8	.88
136	16.18	36.07	26.55	3.95	5.52	2.17	.66	.33	14.6	5.9	15.7	.62
181	13.11	35.66	26.90	4.14	5.88	1.74	-0.52	1.33	14.5	7.4	10.9	.72
227	10.76	35.28	27.06	3.66	6.20	2.54	-0.02	1.68	18.7	11.2	11.1	.80

EASTWARD CRUISE 12 STATION 31 25° VII/74 9.7 GMT CONSECUTIVE STATION 31

LATITUDE = 31 25.5N LONGITUDE = 79 21.0W DEPTH = 480M

WEATHER DATA

WIND FORCE = 0 SEA STATE = 0  
 WIND DIRECTION = DEBR WAVE DIRECTION = DEBR  
 AIR TEMP = 25.60 CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1016.6 MB VISIBILITY CODE =

Z	T	S	D	D2	D2	02%	ADU	DEB	P04	MSS	SI	MKP	DDC
0	23.65	36.06	23.00	4.56	4.42	-0.14	-0.18	.15	.2	1.1	1.1	1.3	1.00
24	23.24	36.09	23.16	4.71	4.45	-0.26	-0.31	.02	.6	4.5	4.5	30.0	1.26
48	26.59	36.23	23.80	4.68	4.57	-0.11	-0.17	.04	1.1	1.0	1.0	27.5	.92
72	24.92	36.26	24.34	4.63	4.70	.07	-0.04	.04	.3	.7	.7	7.5	1.16
96	22.12	36.46	25.31	4.40	4.93	.53	.35	.11	.3	3.6	3.6	12.5	1.50
145	18.20	36.33	26.26	3.50	5.30	1.80	1.27	.73	9.1	3.4	3.4	12.5	.66
190	15.20	35.95	26.68	3.58	5.63	2.05	.22	.28	15.2	5.9	5.9	17.3	.68
257	10.54	35.26	27.08	3.28	6.33	3.95	.37	1.55	30.4	15.2	15.2	16.6	.53
355	8.43	34.98	27.22	3.24	6.54	3.30	.54	1.83	30.6	19.4	19.4	16.6	.66
407	7.74	34.98	27.32	3.08	6.64	3.56	.95	1.30	30.6	20.9	20.9	17.0	.66

OBSERVATIONS

EASTWARD CRUISE 12 STATION 32 26/ VII/74 12.5 GMT CONSECUTIVE STATION 32

LATITUDE = 31 19.5N LONGITUDE = 79 10.5W DEPTH = 455M

WEATHER DATA

WIND FORCE = 3 SEA STATE = 2  
 WIND DIRECTION = 196-204 DEGR WAVE DIRECTION = 196-204 DEGR  
 AIR TEMP = 27.20 CLOUD TYPE = 3  
 WEATHER CODE = 1 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1017.9 MB VISIBILITY CODE =

Z	T	S	D	D2	J2	ADU	D2A	F04	N03	SI	M/P	DOC
0	28.56	36.07	23.04	4.52	4.43	-0.09	-0.14	.01	.2	1.4	20.0	.74
21	28.38	36.05	23.08	4.56	4.44	-0.12	-0.17	.05	.2	1.0	4.0	.60
43	27.71	36.03	23.29	4.66	4.49	-0.17	-0.24	.02	.2	.9		.60
65	27.13	36.05	23.48	4.60	4.53	-0.07	-0.14	0.00	.2	2.6		.56
87	26.40	36.15	23.30	4.55	4.58	.03	-0.04					.50
131	23.40	36.71	25.14	3.71	4.81	1.10	1.01	.22	3.8	1.9	17.3	.46
174	19.20	36.51	26.14	3.34	5.19	1.35	1.37	.42	8.3	2.8	20.5	1.38
261	15.81	36.07	26.64	3.47	5.56	2.09	.38	.75	13.4	4.9	17.9	.40
350	12.94	35.62	26.90	2.99	5.91	2.32	.63	1.32	15.3	7.5	11.6	.60
405	9.94		2.76				1.40		21.2	24.5	15.1	.44

OBSERVATIONS

EASTWARD CRUISE 12 STATION 33 26/ VII/74 20.1 GMT CONSECUTIVE STATION 33

LATITUDE = 30 54.6M LONGITUDE = 79 25.5M DEPTH = 750M

WEATHER DATA

WIND FORCE = 3 SEA STATE = 2  
 WIND DIRECTION = 196-204 DEGR WAVE DIRECTION = 196-204 DEGR  
 AIR TEMP = 29.4C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1016.6 MB VISIBILITY CODE =

OBSERVATIONS												
Z	T	S	D	D2	D2'	ADU	D2A	RD4	MO3	SI	MXP	DOC
0	28.78	35.96	22.88	4.77	4.41	- .36	- .41	.05	0.0	1.6	0.0	.72
23	28.40	35.95	23.00	4.65	4.44	- .21	- .27	.05	0.0	1.6	0.0	.60
45	27.63	36.11	23.37	4.78	4.49	- .29	- .34	.03	.3	5.1	10.0	1.22
69	26.24	35.99	23.73	5.18	4.60	- .58	- .68	.17	.8	1.0	4.7	1.04
92	26.05	36.11	23.88	4.22	4.61	.39	.30	0.00	.1	1.0		.92
133	23.85	36.48	24.83	5.13	4.78	- .35	- .46	.02		.2		.88
184	21.61	36.74	25.67	3.73	4.96	1.23	1.03	.21	5.0	2.4	23.8	.68
368	15.39	36.05	26.72	3.78	5.60	1.82	- .03	.86	10.7	4.3	12.4	.58
553	10.13	35.18	27.09	3.77	6.29	3.52	.89	1.85	27.1	13.5	14.6	.54
691	7.97	35.00	27.30	3.08	6.61	3.53	.82	1.82	25.9	13.1	14.2	.62



EASTWARD CRUISE 12 STATION 34 26/ VII/74 23.4 GMT CONSECUTIVE STATION 34

LATITUDE = 31 .5N LONGITUDE = 79 35.5W DEPTH = 555M

WEATHER DATA

WIND FORCE = 3 SEA STATE = 2  
 WIND DIRECTION = 216-224 DEGR WAVE DIRECTION = 216-224 DEGR  
 AIR TEMP = 26.7C CLOUD TYPE = 5  
 WEATHER CODE = 2 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1016.3 MB VISIBILITY CODE =

Z	T	S	D	D2	D2'	ADU	ADU'	O2A	P04	MD3	SI	M/P	DDC
0	23.41	35.36	23.01	5.08	4.44	-0.64	-0.70	.22	1.0	1.4	1.4	4.5	.72
23	23.26	36.06	23.13	4.76	4.45	-0.31	-0.36	.02	.3	2.5	2.5	15.0	.88
46	27.12	36.06	23.50	4.71	4.53	-0.18	-0.25	.02	2.0	1.2	1.2	100.0	.92
59	26.84	36.06	23.53	4.66	4.55	-0.11	-0.19	.02	.3	.9	.9	3.0	.80
93	25.92	36.20	23.99	4.47	4.62	.15	.07	.10	0.0	1.1	1.1	0.0	.68
139	24.51	36.54	24.68	4.13	4.72	.59	.92	.09	0.0	1.1	1.1	0.0	.88
186	20.32	36.51	25.85	3.37	5.09	1.72	1.47	.14	7.4	3.3	3.3	52.9	.76
366	14.72	35.28	26.27	2.90	5.71	2.81	1.84	.36	25.1	15.6	15.6	69.7	.48
456	7.83	34.96	27.30	3.19	6.63	3.44	.71	1.98	25.6	18.1	18.1	16.2	1.12
501	7.66	34.96	27.31	3.14	6.66	3.52	.77	1.76	29.6	18.6	18.6	16.8	.68

OBSERVATIONS

EASTWARD CRUISE 12 STATION 35 27 JUL 74 2.1 GMT CONSECUTIVE STATION 35

LATITUDE = 31 2.5N LONGITUDE = 79 48.0W DEPTH = 285M

WEATHER DATA

WIND FORCE = 3 SEA STATE = 2  
 WIND DIRECTION = 196-204 DEGR WAVE DIRECTION = 196-204 DEGR  
 AIR TEMP = 26.7C CLOUD TYPE = 5  
 WEATHER CODE = 6 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1016.3 MB VISIBILITY CODE =

Z	T	S	D	O2	O2'	ADU	O2A	PO4	NO3	SI	M/P	DOC
0	28.74	35.96	22.90	4.55	4.42	-0.13	-0.19	0.07	0.5	1.7	7.1	1.04
23	28.53	36.10	23.07	4.91	4.43	-0.48	-0.52	0.01	0.4	1.0	13.3	0.72
46	28.05	36.11	23.23	4.77	4.46	-0.31	-0.35	0.03	0.5	4.2	0.0	0.84
69	27.31	36.13	23.49	5.88	4.52	-1.36	-1.42	0.02	0.0	0.4	0.0	0.58
93	26.99	36.28	24.02	4.65	4.61	-0.04	-0.11	0.02	0.4	3.8	10.0	0.84
139	23.12	36.25	24.87	4.81	4.85	-0.04	-0.13	0.04	0.4	5.1	0.0	0.58
186	18.26	36.19	26.14	3.31	5.30	1.99	1.90	0.61	20.3	16.0	9.1	0.54
265	9.25	35.08	27.16	3.02	6.42	3.40	0.69	2.22				

OBSERVATIONS

EASTWARD CRUISE 12 STATION 36 27/ VII/74 3.8 GMT CONSECUTIVE STATION 36

LATITUDE = 31 4.8N LONGITUDE = 79 53.5W DEPTH = 145M

WEATHER DATA

WIND FORCE = 3 SEA STATE = 2  
 WIND DIRECTION = 196-204 DEGR WAVE DIRECTION = 196-204 DEGR  
 AIR TEMP = 25.6C CLOUD TYPE = 5  
 WEATHER CODE = 1 CLOUD AMOUNT = 0  
 BAROMETRIC PRESSURE = 1016.6 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	O2	O2%	ADU	O2A	P04	NO3	SI	NXP	DOC
0	29.12	35.63	22.52	4.57	4.40	-1.17	-1.27	.04	.8	4.7	20.0	.88
24	28.87	36.07	22.94	4.81	4.40	-1.41	-1.44	.05	.2	1.1	4.0	.68
47	27.85	36.09	23.28	4.76	4.48	-1.28	-1.34	.01	.1	1.2	10.0	.68
71	25.24	36.24	24.04	4.50	4.62	.12	.05	.06	1.5	1.0	25.0	.80
95	24.43	36.30	24.52	4.97	4.74	-1.23	-1.35	.01	.4	1.2	40.0	.88
143	17.94	36.16	26.20	3.33	5.33	2.00	1.65	.82	10.3	5.9	12.6	1.22

EASTWARD CRUISE 12 STATION 37 27/ VII/74 7.0 GMT CONSECUTIVE STATION 37

LATITUDE = 31 6.6N LONGITUDE = 79 59.1W DEPTH = 45M

WEATHER DATA

WIND FORCE = 3  
WIND DIRECTION = 216-224 DEGR  
AIR TEMP = 26.7C  
WEATHER CODE = 2  
BAROMETRIC PRESSURE = 1015.2 MB  
SEA STATE = 2  
WAVE DIRECTION = 216-224 DEGR  
CLOUD TYPE = 5  
CLOUD AMOUNT = 0  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	O2	O2'	ADU	O2A	PO4	NO3	SI	M/P	DOC
0	28.88	35.75	22.69	4.61	4.41	-0.20	-0.28	.16	.3	1.1	1.9	.80
25	28.47	36.09	23.08	4.71	4.43	-0.28	-0.32	.01	.1	1.0	10.0	1.04
45	27.22	36.17	23.55	4.97	4.52	-0.45	-0.50	.05	.5	1.5	10.0	1.70

EASTWARD CRUISE 12 STATION 38 27/ VII/74 9.8 GMT CONSECUTIVE STATION 38

LATITUDE = 31 12.4N LONGITUDE = 80 15.5W DEPTH = 37M

WEATHER DATA

WIND FORCE = 4  
WIND DIRECTION = 176-184 DEGR  
AIR TEMP = 26.7C  
WEATHER CODE = 1  
BAROMETRIC PRESSURE = 1015.2 MB  
SEA STATE = 2  
WAVE DIRECTION = 176-184 DEGR  
CLOUD TYPE = 5  
CLOUD AMOUNT = 0  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	O2	O2'	ADU	O2A	PO4	NO3	SI	M/P	DOC
0	27.07	36.06	23.52	4.86	4.54	-0.32	-0.40	.04	.2	1.2	5.0	1.08
25	25.01	36.23	24.29	4.66	4.69	.03	-0.07	.05	.4	1.0	8.0	.84
36	24.99			4.71			.05	.05	0.0	1.3	0.0	.84

EASTWARD CRUISE 12 STATION 39 27/ VII/74 12.6 GMT CONSECUTIVE STATION 39

LATITUDE = 31 18.0N LONGITUDE = 80 30.0W DEPTH = 32M

WEATHER DATA

WIND FORCE = 3 SEA STATE = 2  
WIND DIRECTION = 176-184 DEGR WAVE DIRECTION = 176-184 DEGR  
AIR TEMP = 27.8C CLOUD TYPE = 3  
WEATHER CODE = 1 CLOUD AMOUNT = 0  
BAROMETRIC PRESSURE = 1016.9 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	DZ	ADU	DZ	P04	AD3	SI	MKP	DOC
0	27.33	36.09	23.46	4.57	4.52	-1.12	.08	.1	3.5	1.3	.90
15	27.33	36.07	23.45	4.65	4.52	-1.13	.05	.6	1.6	12.0	.96
30	26.99	36.13	23.60	4.71	4.54	-1.17	-.24	.4	2.0	4.0	1.04

EASTWARD CRUISE 12 STATION 40 27/ VII/74 15.7 5MT CONSECUTIVE STATION 40

LATITUDE = 31 21.8N LONGITUDE = 80 41.5W DEPTH = 20M

WEATHER DATA

WIND FORCE = 4 SEA STATE = 2  
WIND DIRECTION = 196-204 DEGR WAVE DIRECTION = 196-204 DEGR  
AIR TEMP = 27.8C CLOUD TYPE = 8  
WEATHER CODE = 1 CLOUD AMOUNT = 0  
BAROMETRIC PRESSURE = 1016.9 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	DZ	ADU	DZ	P04	AD3	SI	MKP	DOC
0	27.68	36.00	23.21	4.62	4.48	-1.14	-.21	.1	0.0	2.0	1.08
20	27.81	36.01	23.24	4.61	4.48	-1.13	-.19	.4	.6	5.7	1.00

EASTWARD CRUISE 12 STATION 41 27/ VII/74 17.3 GMT CONSECUTIVE STATION 41

LATITUDE = 31 25.6N LONGITUDE = 80 52.5W DEPTH = 17M

WEATHER DATA

WIND FORCE = 4  
WIND DIRECTION = 216-224 DEGR  
AIR TEMP = 28.9C  
WEATHER CODE = 1  
BAROMETRIC PRESSURE = 1015.2 MB  
SEA STATE = 2  
WAVE DIRECTION = 216-224 DEGR  
CLOUD TYPE = 1  
CLOUD AMOUNT = 0  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	O2	O2'	ADU	O2A	PO4	NO3	SI	M/P	DOC
0	28.10	36.04	23.17	4.71	4.46	-0.25	-0.30	.35	.1	0.0	.3	1.40
17	27.94	36.04	23.22	4.78	4.47	-0.31	-0.37	.41	.8	0.0	2.0	1.08

EASTWARD CRUISE 12 STATION 42 27/ VII/74 18.4 5MT CONSECUTIVE STATION 42

LATITUDE = 31 37.5N LONGITUDE = 80 57.5W DEPTH = 15M

WEATHER DATA

WIND FORCE = 4  
WIND DIRECTION = 216-224 DEGR  
AIR TEMP = 27.8C  
WEATHER CODE = 2  
BAROMETRIC PRESSURE = 1015.2 MB  
SEA STATE = 2  
WAVE DIRECTION = 216-224 DEGR  
CLOUD TYPE = 9  
CLOUD AMOUNT = 0  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	O2	O2'	ADU	O2A	PO4	NO3	SI	M/P	DOC
0	28.11	35.87	23.04	4.62	4.46	-0.16	-0.24	.47	.8	1.0	1.7	
15	27.98	35.67	23.08	4.50	4.47	-0.03	-0.11	.50	.3	1.2	.6	

EASTWARD CRUISE 12 STATION 43 27/ VII/74 19.5 GMT CONSECUTIVE STATION 43

LATITUDE = 31 29.5N LONGITUDE = 81 3.0W DEPTH = 13M

WEATHER DATA

WIND FORCE = 4  
WIND DIRECTION = 156-164 DEGR  
AIR TEMP = 27.80  
WEATHER CODE = 6  
BAROMETRIC PRESSURE = 1014.6 MB  
SEA STATE = 2  
WAVE DIRECTION = 156-164 DEGR  
CLOUD TYPE = 5  
CLOUD AMOUNT = 0  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	02	02'	ADU	02A	PD4	ND3	SI	N/P	DOC
0	27.94	35.22	22.61	4.57	4.49	- .08	- .25	.59		1.2		1.32
13	27.95	35.24	22.62	4.62	4.49	- .13	- .30	.58	.2	1.2	.3	1.36

EASTWARD CRUISE 12 STATION 44 28/ VII/74 1.6 GMT CONSECUTIVE STATION 44

LATITUDE = 30 55.4N LONGITUDE = 81 17.5W DEPTH = 9M

WEATHER DATA

WIND FORCE = 4  
WIND DIRECTION = 176-184 DEGR  
AIR TEMP = 26.70  
WEATHER CODE = 2  
BAROMETRIC PRESSURE = 1015.2 MB  
SEA STATE = 2  
WAVE DIRECTION = 176-184 DEGR  
CLOUD TYPE = 5  
CLOUD AMOUNT = 0  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	02	02'	ADU	02A	PD4	ND3	SI	N/P	DOC
0	27.37	35.29	22.85	4.29	4.53	.24	.06	.30		4.3		1.32
8	27.35	35.30	22.85	4.50	4.53	.03	- .15	.39	.4	3.9	1.1	1.32

EASTWARD CRUISE 12 STATION 45 28/ VII/74 2.8 GMT CONSECUTIVE STATION 45

LATITUDE = 30 54.5N LONGITUDE = 81 13.4W DEPTH = 13M

WEATHER DATA

WIND FORCE = 4  
WIND DIRECTION = 176-184 DEGR  
AIR TEMP = 26.7C  
WEATHER CODE = 2  
BAROMETRIC PRESSURE = 1014.9 MB  
SEA STATE = 2  
WAVE DIRECTION = 176-184 DEGR  
CLOUD TYPE = 5  
CLOUD AMOUNT = 0  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	O2	O2%	ADU	O2A	PO4	NO3	SI	N/P	DOC
0	27.28	35.49	23.02	4.78	4.53	-0.25	-0.40	.21	.9	7.0	4.3	1.08
12	27.25	35.51	23.05	4.47	4.54	.07	-0.08	.21	.5	7.4	2.4	1.74

EASTWARD CRUISE 12 STATION 46 28/ VII/74 4.5 GMT CONSECUTIVE STATION 46

LATITUDE = 30 53.1N LONGITUDE = 81 7.0W DEPTH = 14M

WEATHER DATA

WIND FORCE = 4  
WIND DIRECTION = 176-184 DEGR  
AIR TEMP = 26.1C  
WEATHER CODE = 1  
BAROMETRIC PRESSURE = 1014.9 MB  
SEA STATE = 2  
WAVE DIRECTION = 176-184 DEGR  
CLOUD TYPE = 6  
CLOUD AMOUNT = 6  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	O2	O2%	ADU	O2A	PO4	NO3	SI	N/P	DOC
0	27.25	35.63	23.13	4.61	4.53	-0.08	-0.21	.23	.9	1.7	N/P	1.32
14	27.05	35.64	23.21	4.57	4.55	-0.02	-0.16	.32	.9	2.1	2.8	1.00



EASTWARD CRUISE 12 STATION 47 28/ VII/74 6.5 GMT CONSECUTIVE STATION 47

LATITUDE = 30 50.5N LONGITUDE = 80 55.0W DEPTH = 21M

WEATHER DATA

WIND FORCE = 4  
 WIND DIRECTION = 216-224 DEGR  
 AIR TEMP = 25.6C  
 WEATHER CODE = 2  
 BAROMETRIC PRESSURE = 1013.9 MB

SEA STATE = 3  
 WAVE DIRECTION = 216-224 DEGR  
 CLOUD TYPE = 5  
 CLOUD AMOUNT = 8  
 VISIBILITY CODE =

OBSERVATIONS

Z	T	S	U	DZ	ADU	D2R	FD4	MO3	SI	N/P	DOC
0	26.99	35.88	23.41	4.65	4.55	-0.10	-0.21	.07	4.7		.72
21	25.78	36.11	23.96	4.55	4.63	.08	-0.02	.09	1.3	10.0	.58

EASTWARD CRUISE 12 STATION 48 28/ VII/74 9.2 GMT CONSECUTIVE STATION 48

LATITUDE = 30 48.7N LONGITUDE = 80 44.5W DEPTH = 28M

WEATHER DATA

WIND FORCE = 4  
 WIND DIRECTION = 216-224 DEGR  
 AIR TEMP = 25.0C  
 WEATHER CODE = 2  
 BAROMETRIC PRESSURE = 1012.9 MB

SEA STATE = 3  
 WAVE DIRECTION = 216-224 DEGR  
 CLOUD TYPE = 5  
 CLOUD AMOUNT = 8  
 VISIBILITY CODE =

OBSERVATIONS

Z	T	S	U	DZ	ADU	D2R	FD4	MO3	SI	N/P	DOC
0	26.84	36.10	23.62	4.62	4.55	-0.07	-0.14	.05	0.0	4.0	.76
14	26.81	36.12	23.64	4.60	4.55	-0.05	-0.12	.05	.1		.72
28	24.78	36.09	24.25	4.98	4.71	-0.27	-0.40	.06	0.0		.80

EASTWARD CRUISE 12 STATION 49 28/ VII/74 11.9 GMT CONSECUTIVE STATION 49

LATITUDE = 30 45.0N LONGITUDE = 80 28.0W DEPTH = 38M

WEATHER DATA

WIND FORCE = 4  
 WIND DIRECTION = 216-224 DEGR  
 AIR TEMP = 26.1C  
 WEATHER CODE = 2  
 BAROMETRIC PRESSURE = 1013.9 MB

SEA STATE = 3  
 WAVE DIRECTION = 216-224 DEGR  
 CLOUD TYPE = 5  
 CLOUD AMOUNT = 8  
 VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	D2	02'	ADU	D2A	PD4	NO3	SI	M/P	DOC
0	27.34	35.94	23.34	4.62	4.52	-1.10	-1.19	.05	.3	2.0	7.5	.76
15	27.30	35.94	23.35	4.71	4.52	-1.19	-1.28	.04		1.7		.80
38	25.03	36.23	24.29	4.76	4.69	-1.07	-1.17	.05		.9		.76

EASTWARD CRUISE 12 STATION 50 28/ VII/74 14.5 GMT CONSECUTIVE STATION 50

LATITUDE = 30 41.5N LONGITUDE = 80 11.0W DEPTH = 45M

WEATHER DATA

WIND FORCE = 4  
 WIND DIRECTION = 246-254 DEGR  
 AIR TEMP = 25.0C  
 WEATHER CODE = 2  
 BAROMETRIC PRESSURE = 1013.5 MB

SEA STATE = 3  
 WAVE DIRECTION = 246-254 DEGR  
 CLOUD TYPE = 5  
 CLOUD AMOUNT = 8  
 VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	D2	02'	ADU	D2A	PD4	NO3	SI	M/P	DOC
0	28.27	35.85	22.97	4.54	4.45	-1.09	-1.17	.02	.5	2.2	25.0	.68
23	28.10	35.99	23.13	4.66	4.46	-1.20	-1.26	.17	.1	1.1	.6	.92
45	24.82	36.30	24.40	4.55	4.70	.15	.05	.22	.5	1.3	2.3	.68

EASTWARD CRUISE 12 STATION 51 28/ VII/74 16.3 GMT CONSECUTIVE STATION 51

LATITUDE = 30 40.2N LONGITUDE = 80 5.5W DEPTH = 115M

WEATHER DATA

WIND FORCE = 4 SEA STATE = 3  
 WIND DIRECTION = 246-254 DEGR WAVE DIRECTION = 246-254 DEGR  
 AIR TEMP = 25.0C CLOUD TYPE = 5  
 WEATHER CODE = 2 CLOUD AMOUNT = 8  
 BAROMETRIC PRESSURE = 1013.5 MB VISIBILITY CODE =

OBSERVATIONS												
Z	T	S	D	D2	D2'	ADU	D2A	P04	M03	SI	N/P	DOC
0	28.29	35.02	22.34	4.57	4.47	-1.10	-1.30	.02		.5		.84
25	28.32	36.03	23.09	4.60	4.44	-1.16	-1.21	.05	.5	.8	10.0	.92
50	24.90	36.29	24.37	4.86	4.70	-1.16	-1.26	.01	0.0	.8	0.0	1.00
75	22.88	36.34	25.01	4.50	4.86	.36	.20	.04		1.3		.92
95	21.87	36.35	25.30	3.92	4.95	1.03	.83	.24	3.8	3.6	15.8	1.00
115	20.95	36.32	25.53	3.76	5.03	1.27	1.03	.31		4.0		.88

EASTWARD CRUISE 12 STATION 52 28/ VII/74 18.5 GMT CONSECUTIVE STATION 52

LATITUDE = 30 39.0N LONGITUDE = 79 59.5W DEPTH = 243M

WEATHER DATA

WIND FORCE = 4  
 WIND DIRECTION = 246-254 DEGR  
 AIR TEMP = 26.7C  
 WEATHER CODE = 6  
 BAROMETRIC PRESSURE = 1012.5 MB

SEA STATE = 4  
 WAVE DIRECTION = 216-224 DEGR  
 CLOUD TYPE = 5  
 CLOUD AMOUNT = 8  
 VISIBILITY CODE =

Z	OBSERVATIONS											
	T	S	D	D2	D2'	ADU	D2A	PO4	NO3	SI	N/P	DOC
0	28.62	35.94	22.92	4.51	4.43	-0.08	-0.14	.01		1.0		.38
23	28.24	36.04	23.12	3.14	4.45	1.31	1.26	.02		.7		1.08
46	25.96	36.29	24.04	4.65	4.61	-0.04	-0.10	.04		.7		.82
69	24.92	36.39	24.44	4.60	4.69	.09	.01	.08	.2	2.0	2.5	1.22
92	22.17	36.54	25.36	3.91	4.92	1.01	.85	.13		2.9		.88
138	18.63	35.42	25.46	3.03	5.28	2.25	1.74	.55	11.1	4.5	20.2	.76
184	13.73	35.75	26.84	3.49	5.81	2.32	.16	1.22	16.5	8.6	13.5	1.00
224	10.21	35.27	27.15	2.87	6.27	3.40	.83	1.57		15.3		.66

EASTWARD CRUISE 12 STATION 53 28.1174 22.2 GMT CONSECUTIVE STATION 53

LATITUDE = 30 38.5N LONGITUDE = 79 49.0W DEPTH = 480M

WEATHER DATA

WIND FORCE = 4 SEA STATE = 3  
 WIND DIRECTION = 316-324 DEGR WAVE DIRECTION = 316-324 DEGR  
 AIR TEMP = 26.1C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 5  
 BAROMETRIC PRESSURE = 1011.5 MB VISIBILITY CODE =

Z	T	S	D	D2	D2'	ADU	SEA	PD4	ND3	SI	M/P	DDC
0	29.20	35.67	22.52	5.12	4.39	-0.73	-0.82	0.00	.8	.8		1.08
21	28.23	36.07	23.15	5.24	4.45	-0.79	-0.84	0.00	.8	.8	15.0	.88
43	25.43	36.24	24.17	5.19	4.66	-0.53	-0.62	.02	.3	2.0		.92
64	23.72	36.38	24.79	4.73	4.79	-0.06	-0.06	.03	3.8	1.2	17.3	.84
86	22.44	36.63	25.35	3.84	4.89	1.05	.92	.22		.8		.62
129	18.87	36.52	26.24	3.42	5.23	1.81	1.42	.43		2.8	13.0	.58
179	16.31	36.13	26.57	4.04	5.50	1.46	-0.07	.87	11.3	5.2	16.2	.72
279	12.21	35.53	26.98	2.89	6.00	3.11	.72	1.37	22.2	12.4	13.9	.76
379	9.79	35.05	27.22	2.94	6.48	3.54	.84	2.07	28.7	16.2		
459	8.38	35.03	27.26	2.94	6.55	3.61	.89	1.57	20.4	17.2	13.0	1.46

OBSERVATIONS

EASTWARD CRUISE 12 STATION 54 29/ VII/74 1.6 GMT CONSECUTIVE STATION 54

LATITUDE = 30 25.8N LONGITUDE = 79 57.0W DEPTH = 710M

WEATHER DATA

WIND FORCE = 3 SEA STATE = 2  
 WIND DIRECTION = 266-274 DEGR WAVE DIRECTION = 266-274 DEGR  
 AIR TEMP = 27.2C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 7  
 BAROMETRIC PRESSURE = 1011.9 MB VISIBILITY CODE =

Z	OBSERVATIONS											
	T	S	D	D2	D2'	ADU	O2A	P04	NO3	SI	N/P	DOC
0	28.85	35.96	22.86	4.78	4.41	-0.37	-0.42	0.07	0.3	0.9	4.3	0.92
23	28.51	36.08	23.06	4.94	4.43	-0.51	-0.55	0.00	1.3	1.0	0.0	1.26
46	26.93	36.19	23.66	4.88	4.54	-0.34	-0.40	0.03	0.0	1.6	0.0	1.00
69	25.79	36.99	24.62	4.67	4.61	-0.06	-0.03	0.02	0.3	1.0	15.0	0.96
92	23.55	36.20	24.71	5.06	4.81	-0.25	-0.41	0.06	0.8	0.9	13.3	0.76
139	22.32	36.74	25.47	3.67	4.90	1.23	1.11	0.18	0	3.5	20.4	0.54
185	18.45	36.50	26.33	3.62	5.27	1.65	0.93	0.50	10.2	3.5	15.8	0.50
375	11.83	35.50	27.03	2.82	6.05	3.23	0.81	1.46	23.1	12.0	2.78	2.78
474	9.97	35.23	27.16	2.93	6.31	3.38	0.78	1.56	0	15.1	0	0.76

EASTWARD CRUISE 12 STATION 55 29/ VII/74 9.1 GMT CONSECUTIVE STATION 55

LATITUDE = 30 11.0N LONGITUDE = 79 43.5W DEPTH = 870M

WEATHER DATA

WIND FORCE = 4 SEA STATE = 2  
 WIND DIRECTION = 246-254 DEGR WAVE DIRECTION = 266-274 DEGR  
 AIR TEMP = 26.1C CLOUD TYPE = 6  
 WEATHER CODE = 1 CLOUD AMOUNT = 4  
 BAROMETRIC PRESSURE = 1010.2 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	O2	O2'	ADU	O2A	PO4	NO3	SI	N/P	DOC
0	28.47	36.14	23.12	4.79	4.43	-0.36	-0.39	.04	.3	.5	7.5	.80
22	27.91	36.08	23.26	4.86	4.47	-0.39	-0.44	.06	.3	.9	5.0	1.12
44	26.94	36.21	23.67	4.83	4.54	-0.29	-0.34	.01		1.0		.84
66	25.69	36.41	24.22	4.71	4.63	-0.08	-0.14	0.00	1.0	.9		.66
89	23.50	36.31	24.80	4.94	4.81	-0.13	-0.27	.02		1.2		.76
133	20.35	36.71	25.99	3.73	5.08	1.35	1.13	.41	7.3	5.8	17.8	.96
179	16.68	36.27	26.58	3.67	5.46	1.79	.28	.71	12.7	6.2	17.9	.68
268	13.97	35.82	26.85	3.24	5.78	2.54	.40	1.18	17.3	7.3	14.7	.58
358	10.76	35.33	27.10	2.88	6.20	3.32	.78	1.82	24.8	12.2	13.6	.62
448	8.76	35.10	27.26	2.95	6.49	3.54	.88	1.85	26.7	25.5	14.4	.76

EASTWARD CRUISE 12 STATION 56 29/ VII/74 12.2 GMT CONSECUTIVE STATION 56

LATITUDE = 30 13.6N LONGITUDE = 79 55.0W DEPTH = 550M

WEATHER DATA

WIND FORCE = 3 SEA STATE = 2  
 WIND DIRECTION =316-324 DEGR WAVE DIRECTION =316-324 DEGR  
 AIR TEMP = 26.7C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 5  
 BAROMETRIC PRESSURE = 1011.5 MB VISIBILITY CODE =

Z	T	S	D	Q2	Q2'	QDU	Q2A	P04	NO3	SI	M>P	DOC
0	28.50	35.83	22.88	4.68	4.44	-0.24	-0.32	0.00	.8	.9		1.00
22	27.76	36.08	23.31	4.97	4.48	-0.49	-0.54	.03		.7		.96
45	24.91	36.29	24.37	5.12	4.70	-0.42	-0.52	.04	0.0	1.2	0.0	1.12
67	22.26	36.35	25.19	4.37	4.92	.55	.36	.18	3.4	2.9	18.9	.84
90	19.19	36.24	25.94	3.79	5.20	1.41	1.06	.47	10.6	4.3	22.6	
180	13.74	35.79	26.87	3.50	5.80	2.30	.13	1.05		8.7		.88
270	9.21	35.15	28.00	2.89	6.38	3.49	3.34	1.71		17.5		
360	7.86	35.00	27.32	3.05	6.62	3.57	.88	1.88	21.3	16.8	11.3	
452	7.13	34.97	27.40	3.30	6.74	3.44	.79	1.63	25.4	21.9	15.6	
502	6.84	34.93	27.41	3.40	6.79	3.39	.71	1.93	24.7	21.4	12.8	

OBSERVATIONS



EASTWARD CRUISE 12 STATION 57 29/ VII/74 14.9 GMT CONSECUTIVE STATION 57

LATITUDE = 30 12.3N LONGITUDE = 80 0.0W DEPTH = 290M

WEATHER DATA

WIND FORCE = 3 SEA STATE = 1  
 WIND DIRECTION = 316-324 DEGR WAVE DIRECTION = 316-324 DEGR  
 AIR TEMP = 26.7C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 7  
 BAROMETRIC PRESSURE = 1012.2 MB VISIBILITY CODE =

Z	OBSERVATIONS											
	T	S	D	Q2'	Q2	Q2'	Q2A	PO4	MO3	SI	M/P	DDC
0	28.04	35.90	23.08					.15	.1	1.9	.7	1.08
23	25.25	36.08	24.11	4.68	5.02	-0.34	-0.46	.08	.5	3.5	6.3	1.56
45	22.24	36.38	25.22	4.92	4.60	.32	.14	.13	3.4	1.3	26.2	.96
68	19.54	36.23	25.85	5.17	3.76	1.41	1.08	.49	9.7	3.9	19.8	.84
91	17.00	36.08	26.37	5.43	3.58	1.85	.86	.93	13.4	5.5	14.4	.74
139	12.04	35.51	27.00	6.02	3.19	2.83	.43	1.40	21.4	12.7	15.3	.66
184	9.65	36.14	27.92	6.32	2.90	3.42	2.94	1.68	26.4	15.1	15.7	.74
268	8.08	35.03	27.31	6.59	2.98	3.61	.93	2.21	29.6	18.8	13.4	.66

EASTWARD CRUISE 12 STATION 58 29/ VII/74 16.6 GMT CONSECUTIVE STATION 58

LATITUDE = 30 14.0N LONGITUDE = 80 13.0W DEPTH = 114M

WEATHER DATA

WIND FORCE = 0 SEA STATE = 0  
 WIND DIRECTION = DEGR WAVE DIRECTION = DEGR  
 AIR TEMP = 30.00 CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 6  
 BAROMETRIC PRESSURE = 1011.5 MB VISIBILITY CODE =

		OBSERVATIONS										
Z	T	S	D	DE	ADU	D2A	PD4	ND3	SI	M/P	DOC	
0	28.49	35.95	22.97	4.65	-22	-28	.92	1.4		4.4	1.26	
22	26.57	36.20	23.79	5.04	-47	-53	.07	.3	2.5	4.3	.96	
73	22.86	36.60	25.21	4.05	.81	.68	.18	3.1	1.9	17.2	.72	
98	18.49	36.20	26.09	3.40	1.87	2.01	.67		6.6		.84	
114	17.75	36.15	26.24	3.71	1.64	1.13	.75	11.9	6.8	15.9	.92	

EASTWARD CRUISE 12 STATION 59 29/ VII/74 18.3 GMT CONSECUTIVE STATION 59  
 LATITUDE = 30 15.0N LONGITUDE = 80 18.6W DEPTH = 47M

WEATHER DATA  
 WIND FORCE = 2  
 WIND DIRECTION = 316-324 DEGR  
 AIR TEMP = 30.0C  
 WEATHER CODE = 1  
 BAROMETRIC PRESSURE = 1011.2 MB

SEA STATE = 1  
 WAVE DIRECTION = 316-324 DEGR  
 CLOUD TYPE = 8  
 CLOUD AMOUNT = 6  
 VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	D2	D2'	ADU	D2A	P04	M03	SI	M/P	DOC
0	28.66			4.67				.14	.8	1.3	5.7	1.36
25	24.10			5.00				.09	.3	2.4	3.3	.88
45	22.12			4.29				.18	2.7	2.4	15.0	.88

EASTWARD CRUISE 12 STATION 60 29/ VII/74 20.4 GMT CONSECUTIVE STATION 60

LATITUDE = 30 16.8N LONGITUDE = 80 30.0W DEPTH = 35M

WEATHER DATA

WIND FORCE = 3 SEA STATE = 1  
WIND DIRECTION = 316-324 DEGR WAVE DIRECTION = 316-324 DEGR  
AIR TEMP = 30.0C CLOUD TYPE = 8  
WEATHER CODE = 1 CLOUD AMOUNT = 5  
BAROMETRIC PRESSURE = 1010.8 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	02	02'	ADU	02R	PD4	ND3	SI	NAP	DDC
0	28.03	35.97	23.14	4.76	4.47	-0.29	-0.36	.08	0.0	1.2	0.0	1.22
15	23.61	36.34	24.79	4.71	4.80	.09	-0.04	.11	0.0	2.3	0.0	1.32
35	22.93	36.39	25.03	4.13	4.86	.73	.58		3.1	3.3		1.08

EASTWARD CRUISE 12 STATION 61 29/ VII/74 22.4 GMT CONSECUTIVE STATION 61

LATITUDE = 30 18.4N LONGITUDE = 80 41.2W DEPTH = 27M

WEATHER DATA

WIND FORCE = 1 SEA STATE = 1  
WIND DIRECTION = 316-324 DEGR WAVE DIRECTION = 316-324 DEGR  
AIR TEMP = 29.9C CLOUD TYPE = 8  
WEATHER CODE = 1 CLOUD AMOUNT = 3  
BAROMETRIC PRESSURE = 1011.2 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	02	02'	ADU	02R	PD4	ND3	SI	NAP	DDC
0	27.95	35.95	23.15	4.80	4.47	-0.33	-0.40	.07	.2	1.1	2.9	1.36
12	27.05	35.97	23.46	4.85	4.54	-0.31	-0.40	.19	.3	7.9	1.6	
27	24.26	36.27	24.55	4.64	4.75	.11	-0.01	.19	3.3	5.6	17.4	

EASTWARD CRUISE 12 STATION 62 30/ VII/74 .8 GMT CONSECUTIVE STATION 62

LATITUDE = 30 20.1N LONGITUDE = 80 52.3W DEPTH = 25M

WEATHER DATA

WIND FORCE = 1 SEA STATE = 0  
 WIND DIRECTION = 316-324 DEGR WAVE DIRECTION = DEGR  
 AIR TEMP = 27.8C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 3  
 BAROMETRIC PRESSURE = 1011.9 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	D2	D2'	ADU	D2A	P04	ND3	SI	N/P	DOC
0	27.68	36.04	23.31	4.64	4.49	-0.15	-0.21	0.07	1.0	3.1	14.3	
12	26.84	36.00	23.55	4.76	4.55	-0.21	-0.29	0.09		1.0		
25	23.66	36.28	24.73	5.13	4.80	-0.33	-0.47	0.09	2.7	3.5	30.0	

EASTWARD CRUISE 12 STATION 63 30/ VII/74 3.4 GMT CONSECUTIVE STATION 63

LATITUDE = 30 21.8N LONGITUDE = 81 4.5W DEPTH = 21M

WEATHER DATA

WIND FORCE = 0 SEA STATE = 0  
 WIND DIRECTION = DEGR WAVE DIRECTION = DEGR  
 AIR TEMP = 26.7C CLOUD TYPE = 8  
 WEATHER CODE = 1 CLOUD AMOUNT = 2  
 BAROMETRIC PRESSURE = 1012.5 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	D2	D2'	ADU	D2A	P04	ND3	SI	N/P	DOC
0	27.16	36.00	23.45							4.2	3.2	
21	23.69	36.14	24.62	4.47	4.80	0.33	0.17	0.17	0.2	0.9	1.2	

EASTWARD CRUISE 12 STATION 64 30/ VII/74 5.9 GMT CONSECUTIVE STATION 64

LATITUDE = 30 23.1N LONGITUDE = 81 15.5W DEPTH = 11M

WEATHER DATA  
WIND FORCE = 2  
WIND DIRECTION = 176-184 DEGR  
AIR TEMP = 26.1C  
WEATHER CODE = 1  
BAROMETRIC PRESSURE = 1011.9 MB  
SEA STATE = 1  
WAVE DIRECTION = 176-184 DEGR  
CLOUD TYPE = 8  
CLOUD AMOUNT = 2  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	O2	O2'	ADU	O2A	PO4	NO3	SI	N/P	DOC
0	27.36	34.65	22.37	5.05	4.55	-0.50	-0.77	.30	.4	4.3	1.3	
10	25.42	36.08	24.05	3.97	4.66	.69	.58	.30	.8	5.2	2.7	

EASTWARD CRUISE 12 STATION 65 30/ VII/74 10.1 GMT CONSECUTIVE STATION 65

LATITUDE = 30 35.2N LONGITUDE = 80 52.5W DEPTH = 25M

WEATHER DATA  
WIND FORCE = 1  
WIND DIRECTION = 216-224 DEGR  
AIR TEMP = 25.6C  
WEATHER CODE = 1  
BAROMETRIC PRESSURE = 1011.5 MB  
SEA STATE = 1  
WAVE DIRECTION = 216-224 DEGR  
CLOUD TYPE = 8  
CLOUD AMOUNT = 2  
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	O2	O2'	ADU	O2A	PO4	NO3	SI	N/P	DOC
0	27.04	36.06	23.53	4.54	4.54	-0.00	-0.08		.8	1.3		
23	24.38	36.20	24.46	4.41	4.74	.33	.20	.19	.4	2.4	2.1	

EASTWARD CRUISE 12 STATION 66 30/ VII/74 15.5 GMT CONSECUTIVE STATION 66

LATITUDE = 31 0.0N LONGITUDE = 80 28.0W DEPTH = 30M

WEATHER DATA

WIND FORCE = 1  
 WIND DIRECTION = 216-224 DEGR  
 AIR TEMP = 28.3C  
 WEATHER CODE = 1  
 BAROMETRIC PRESSURE = 1013.9 MB

SEA STATE = 1  
 WAVE DIRECTION = 216-224 DEGR  
 CLOUD TYPE = 8  
 CLOUD AMOUNT = 2  
 VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	D2	D2'	ADU	D2A	PD4	ND3	SI	N/P	DOC
0	27.58			4.63				.18	.1	.4		.6
30	24.83			4.55				.07	1.2	3.3		17.1

EASTWARD CRUISE 12 STATION 67 30/ VII/74 20.2 GMT CONSECUTIVE STATION 67

LATITUDE = 31 16.4N LONGITUDE = 81 7.6W DEPTH = 10M

WEATHER DATA

WIND FORCE = 2  
 WIND DIRECTION = 216-224 DEGR  
 AIR TEMP = 28.9C  
 WEATHER CODE = 4  
 BAROMETRIC PRESSURE = 1013.2 MB

SEA STATE = 1  
 WAVE DIRECTION = 216-224 DEGR  
 CLOUD TYPE =  
 CLOUD AMOUNT = 0  
 VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	D2	D2'	ADU	D2A	PD4	ND3	SI	N/P	DOC
0	28.81	34.51	21.78	4.96	4.45	- .51	- .73	.46		5.2		
9	27.95	35.37	22.71	4.32	4.49	.17	.01	.46	.4	4.1		.9

EASTWARD CRUISE 12 STATION 68 31/ VII/74 3.0 GMT CONSECUTIVE STATION 68

LATITUDE = 31 31.5N LONGITUDE = 80 28.0W DEPTH = 22M

WEATHER DATA

WIND FORCE = 3  
 WIND DIRECTION = 156-164 DEGR  
 AIR TEMP = 27.8C  
 WEATHER CODE = 1  
 BAROMETRIC PRESSURE = 1013.9 MB

SEA STATE = 2  
 WAVE DIRECTION = 156-164 DEGR  
 CLOUD TYPE = 8  
 CLOUD AMOUNT = 5  
 VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	D2	D2'	ADU	D2A	PD4	MD3	SI	N/P	DDC
0	27.69	36.11	23.35					.14	.8	3.1	5.7	
22	26.67	36.14	23.71					.09		1.2		





CHLOROPHYLL AND CARBON-<sup>14</sup> PRODUCTIVITY DATA

117

 Table 2 . Chlorophyll  $\alpha$  and C<sup>14</sup> uptake with respect to depth.

<u>Station</u>	<u>Depth</u> <u>(m)</u>	<u>Chlorophyll <math>\alpha</math></u> <u>(mg/m<sup>3</sup>)</u>	<u>C<sup>14</sup> uptake</u> <u>(mgC/m<sup>3</sup>/day)</u>
1	0	2.51	15.83
	3	2.60	3.88
	8	2.57	12.49
4	0	.21	5.61
	6	.33	.90
	13	.47	4.68
6	0	.25	3.32
	8	.29	.26
	15	.36	.71
	25	.55	.28
	49	.76	.15
11	0	.06	.41
	11	.08	.09
	22	.06	.30
	36	.10	.01
	73	.25	.09
15	0	1.5	16.38
	5	.09	1.18
	9	.03	4.73
	15	.05	.29
	30	.14	.10
17	0	.55	21.05
	5	.71	1.11
	15	.74	1.39
20	0	1.32	33.90
	3	.98	2.91
	8	.69	1.27
21	0	1.04	6.88
	4	2.00	36.74
	12	2.31	16.38
25	0	.38	2.82
	6	.55	6.36
	12	.65	17.70
	21	.58	.43
28	0	.03	.26
	8	.09	1.73
	17	.09	1.07
	27	.03	.28
	54	.20	.33

Table 2 . (Continued)

<u>Station</u>	<u>Depth</u> <u>(m)</u>	<u>Chlorophyll a</u> <u>(mg/m<sup>3</sup>)</u>	<u>C<sup>14</sup> uptake</u> <u>(mgC/m<sup>3</sup>/day)</u>
33	0	.04	2.93
	11	.36	.08
	21	.05	.17
	35	.01	.01
	71	.15	.20
37	0	.06	.67
	8	.06	.22
	17	.09	.24
	27	.03	.02
40	0	1.39	14.23
	5	1.37	16.34
	10	1.13	.77
	16	1.56	2.63
43	0	3.00	13.19
	5	3.18	50.59
	8	3.00	11.10
44	0	3.63	101.72
	7	2.50	11.46
47	0	.92	2.72
	5	.20	22.88
	10	.26	.62
	16	.31	1.15
51	0	.13	.76
	8	.18	.35
	17	.13	1.04
	27	.14	.05
	54	.44	.57
54	0	.06	.34
	11	.08	.31
	21	.09	.01
	35	.08	.02
	71	.20	0
58	0	.11	.07
	13	.13	.17
	25	.28	1.46
	42	.02	.01
	84	.09	.36

Table 2 . (Continued)

<u>Station</u>	<u>Depth</u> <u>(m)</u>	<u>Chlorophyll <math>\alpha</math></u> <u>(mg/m<sup>3</sup>)</u>	<u>C<sup>14</sup> uptake</u> <u>(mgC/m<sup>3</sup>/day)</u>
60	0	.08	.34
	9	.10	1.93
	18	.44	.52
	30	.61	1.74
64	0	1.81	43.69
	8	5.11	7.09

Table 3. Surface chlorophyll  $\alpha$ , depth integrated chlorophyll  $\alpha$  and  $C^{14}$  values.

Station	Surface Chlorophyll $\alpha$ mg/m <sup>3</sup>	Depth Integrated Chlorophyll $\alpha$ mg/m <sup>2</sup>	Depth Integrated $C^{14}$ mgC/m <sup>2</sup> /day
1	2.51	20.6	70.5
2			
3	.66		
4	.21	4.4	39.1
5	.30		
6	.25	24.7	27.8
7	1.20		
8	.21		
9	.10		
10	.08		
11	.06	9.1	8.9
12	.06		
13	.10		
14	.37		
15	1.5	5.9	73.7
16	.11		
17	.55	10.4	67.9
18	1.38		
19	1.15		
20	1.32	7.6	65.7
21	1.04	23.3	299.7
22	.92		
23	.04		
24	.82		
25	.38	11.9	181.3
26	1.45		
27	.23		
28	.03	5.0	35.5
29	.14		
30	.06		
31			
32	.05		
33	.04	7.5	22.8
34	.06		
35	.08		
36	.06		
37	.06	1.8	6.9
38	.36		
39	.26		
40	1.39	21.2	129.4

Table 3. (continued)

<u>Station</u>	<u>Surface Chlorophyll <math>\alpha</math></u> mg/m <sup>3</sup>	<u>Depth Integrated Chlorophyll <math>\alpha</math></u> mg/m <sup>2</sup>	<u>Depth Integrated C<sup>14</sup></u> mgC/m <sup>2</sup> /day
41			
42	2.61		
43	3.00	24.7	252.0
44	3.63	21.5	396.1
45	1.27		
46	.76		
47	.92	5.7	128.1
48	.34		
49	.22		
50	.10		
51	.13	11.8	24.5
52	.13		
53	.10		
54	.06	7.8	5.7
55			
56	.09		
57	.13		
58	.11	8.9	31.6
59	.09		
60	.08	9.5	34.8
61	37		
62	40.68		
63	1.17		
64	1.81	27.7	203.1

## PARTICULATE ORGANIC CARBON (POC) AND PARTICULATE NITROGEN (PN)

Table 4. Particulate Organic Carbon (POC) and Nitrogen (PN)

<u>Station</u>	<u>Depth</u> (m)	<u>POC</u> $\mu\text{gC/L}$	<u>PN</u> $\mu\text{gN/L}$	<u>C:N</u> (atomic)
1	0	310	29	12
1	8	275	27	12
4	0	160	6	29
4	13	110	17	8
6	0	127	11	13
6	25	155	11	16
11	0	86	11	8
11	36	97	6	18
15	0	310	30	12
15	15	-	17	-
17	0	246	33	9
17	15	260	9	34
20	0	370	49	9
20	11	295	-	-
21	0	620	29	25
24	0	-	31	-
25	0	235	18	15
25	21	260	13	24
28	8	105	18	7
33	0	160	7	26
33	35	160	5	38
37	0	50	7	8
37	27	154	10	19
40	0	340	24	16
40	16	225	25	10
43	0	410	50	12
43	8	450	44	12
44	0	600	32	22
47	0	171	22	9
51	0	84	8	12
51	27	21	9	3
54	0	136	14	11
58	0	242	48	6
58	42	790	50	18
60	0	121	7	20
64	0	132	8	20
67	0	45	2	24
Mean $\pm$ 1 s.d.		260 $\pm$ 199	23 $\pm$ 15	15 $\pm$ 7

## SURFACE OBSERVATIONS LOG

The following log was kept to note any surface observations. Realize the log was informally kept and was just an aid in data analysis.

<u>Time - Date</u>	<u>Location</u>	<u>Observations</u>
22 July	Beaufort-Charleston	Wilson's Petrel present on/off all day
0700 23 July	To Sta. 1	Many <i>Stomolophus</i>
0810 "	"	Scattered <i>Stomolophus</i>
0835 "	Sta. 1	" "
1000 "	1-2	Few scattered <i>Stomolophus</i>
1023 "	2	" " "
1145 "	2-3	Rare <i>Stomolophus</i>
1240 "	3	Scattered <i>Stomolophus</i>
1300 "	on 3	Many scattered <i>Stomolophus</i>
1645 "	5-6	<i>Trichodesmium</i> streaks
1718 "	6	" saved small sample for B. Dunstan
1830 "	6-7	" " " " "
1845 "	7	" " " " "
1943 "	7-8	Very heavy <i>Trichodesmium</i>
2025 "	8	Large patches of <i>Trichodesmium</i>
"	9	No <i>Trichodesmium</i>
24 July	11	No "
"	13	No "
1500 "	14-15	Light "
1650 "	14-15	Heavy "
1830 "	15	Heavy "
1940 "	15-16	Very heavy <i>Trichodesmium</i> and green fuzzies and brown streaks, stopped for sample - sargassum near this bloom looks almost dead
2015 "	15-16	Much less <i>Trichodesmium</i> but still present
"	16	Light "
2215 "	17	None
25 July	20	3 small cabbageheads? (Note: these were probably <i>Chrysaora</i> )
0730 "	to 21	<i>Chrysaora</i>
0800 "	21	"
0940 "	22	"
1025 "	22-23	2 " in plankton tow
1130 "	23	Few "
1840 "	to 25	<i>Trichodesmium</i> evident but light
2030 "	27	Light "
2250 "	28	No "
2345 26 July	36	Slight <i>Trichodesmium</i> - note storm disturbance
0845 27 July	39	Few small cabbageheads
"	42	<i>Trichodesmium</i>
"	43	3 <i>Chrysaora</i> in benthic sample
1800 "	43-44	Several <i>Chrysaora</i>
2245 "	45	" "
0220 28 July	47	Many "
2045 "	54	Filmy strands of algae in bucket sample. Helen says this was present on the last sta. also.
1815 29 July	61	<i>Trichodesmium</i> and green fuzzies
2030 "	61-62	Heavy "
2045 "	62	" "



## Surface Observations Log (continued)

<u>Time - Date</u>	<u>Location</u>	<u>Observations</u>
2320 29 July	63	<i>Trichodesmium</i> & <i>Chrysaora</i>
0650 30 July	65	<i>Chrysaora</i> , <i>Trichodesmium</i> and junk
1000 "		In <i>Trichodesmium</i> since 0830, some very heavy
1130 "	66	<i>Chrysaora</i> and very heavy <i>Trichodesmium</i>
1630 "	67	" " " " "
0650 Return trip		Off S. C. between Charleston & Winyah Bay <i>Stomolophus</i>

