Table APP 4.4-1(1)	Results of	Deoxidation	Constant(k1)	of Water in	the
	Reactor				

	Phase 2	Date:Nov.4	- 13 199	92	
St.20		St.21		St.22	· ·
Day	BOD	Day	BOD	Day	BOD
	(ng/l)		(mg/l)		(mg/l)
0	0.0	0	0.0	.0	0.0
1	0.4	1	0.4	1	0.8
2	0.8	2	0.8	2	0.8
3	0.6	- 3	0.8	3	0.4
4	1.0	4	1.0	4	1.2
- 5	1.2	5	1.0	5	1.2
6	1.2	6	1.0	6	1.6
. 7	1.6	7	1.0	7	1.6
k1=0.	.099(/day)	k1=0.	209(/day)	k1=0.	125(/day)
	749(mg/1)	L= 1.	139(mg/1)	L= 1.	654(mg/l)
N . I		-			

Note:

1. k1= Deoxidation Constant

2. L= Ultimate BOD

3. Reference: Thomas. H. A.; Graphical Determination of B.O.D. Curve Constants. Water & Sewage Works,97, 123(1950)

Table APP 4.4-1(2)	Results of	Deoxidation	Constant(k1)	of	Water	in	the
	Reactor						

	Phase 3	Date: May.	5 - 12 1	993	·
St.35		St.36		St.37	
Day	BOD	Day	BOD	Day	BOD
	(mg/1)		(mg/l)		(mg/1)
0	0.0	0	0.0	0	0.0
1	0.2	. 1	0.4	. 1	1.0
2	0.4	2	0.6	2	1.4
3	0.8	3	0.8	3	1.6
4	0.8	4	0.8	4	1.8
5	0.8	5	0.8	5	1.8
6	1.0	6	1.0	6	2.0
7	1.0	7	1.0	7	2.2
k1=0	.065(/day)	k1=0.	187(/day)	k1=0.	277(/day)
L= 1	.656(mg/l)	L= 1.	064(mg/l)	_L= 2.	113(mg/l)
11 - 4					

Note:

1. k1= Deoxidation Constant

2. L= Ultimate BOD

3. Reference: Thomas. H. A.; Graphical Determination of B.O.D. Curve Constants. Water & Sewage Works,97, 123(1950)

	Date: Octo St:	orber.31 - No St.20	orbember.6	1992	
		rea of sedim	ent: ($0.0384(m^2)$	na dia mandri dia mandri Na fini dia mandri dia m
	Water Volu			1.37(1)	
	Flow rate			5.22(1/day	·)
	Retention			.18(day)	
	Water Tem			23.7°C	
	Time	InfluentDO		⊿DO	Oxygen
Date	(Day)	(mg/l)	(mg/1)	(mg/l)	Consumption Rate
					(02 g/m [*] /day)
Oct.3	0	7.1	5.5	1.6	
Nov.2	2	6.9	2.7	4.2	0.883
Nov.2	2	6.6	2.7	3.9	0.846
Nov.2		6.5	2.6	3.9	0.862
Nov.3	3	6.9	2.8	4.1	0.861
Nov.3	3	7.1	2.7	4.4	0.939
Nov.3	3	6.9	2.8	4.1	0.918
Nov.4	4	6.8	2.9	3.9	0.840
Nov.4	4	6.9	2.9	4.0	0.889
Nov.5	5	7.4	3.1	4.3	0.933
Nov.5	5	6.9	3.2	3.7	0.885
Nov.6	6	6.8	2.9	3.9	0.865
MEAN		6.9	3.1	3.8	0.884

Table APP 4.4-2(1) Oxygen Consumption by Sediment

Table APP 4.4-2(2) Oxygen Consumption by Sediment

	St:	: Time:	ent: (1992 0.0384(m [*]) 7.56(1) 5.13(1/day) 1.47(day) 23.3°C	
	Time	InfluentDO	EffluentDO	⊿00	Oxygen
Date	(Day)	(mg/l)	(mg/l)	(mg/l)	Consumption Rate
					(02 g/m/day)
Oct.3	0	7.1	5.5	1.6	
Nov.2		6.9	3.6	3,3	0.683
Nov.2	2	6.6	3.6	3.0	0.698
Nov.2	2	6.5	2.5	4.0	0.715
Nov.3		6.9	2.0	4.9	0.744
Nov.3	3	7.1	2.3	4.8	0.745
Nov.3	3	6.9	2.3	4.6	0.734
Nov.4	4	6.8	2.1	4.7	0.710
Nov.4	4	6.9	2.1	4.8	0.724
Nov.5	5	7.4	2.1	5.3	0.781
Nov.5	5	6.9	1.9	5.0	0.741
Nov.6	6	6.8	1.5	5.3	0.736
MEAN		6.9	2.6	4.3	0.728

APP 4-20

Ĩ

		orber.31 - No St.22			
		ea of sedime	ent:	0.0384(m ²)	
រ	later Volu	ume:		9.40(1)	
1	low rate:	· · · ·		2.70(1/day	·) ·
F	Retention	Time:		3.48(day)	1
<u></u> }	Water Temp	. :		<u>23.3°C</u>	
	Time	InfluentDO	EffluentDO	I ⊿D0	Oxygen
Date	(Day)	(mg/l)	(mg/l)	(mg/l)	Consumption Rate
					$(02 \text{ g/m}^2/\text{day})$
Oct.3	0	7.1	4.8	2.4	
Nov.2	2	6.9	3.8	3.1	0.355
Nov.2	2	6.6	3.3	3.3	0.351
Nov.2	2	6.5	3.6	3.0	0.326
Nov.3	. 3	6.9	3.2	3.7	0.363
Nov.3	3	7.1	3.6	3.5	0.368
Nov.3	3	6.9	3.1	3.8	0.372
Nov.4	4	6.8	3.4	3.4	0.340
Nov.4	4	6.9	3.6	3,4	0.355
Nov.5	5	7.4	3.7	3.7	0.387
Nov.5	5	6.9	3.8	3.1	0.357
Nov.6	6	6.8	4.5	2,3	
MEAN		6.9	3.7	3.2	0.355

Table APP 4.4-2(3) Oxygen Consumption by Sediment

Table APP 4.4-2(4) Oxygen Consumption by Sediment

Date: April.10 - May.5 1993	
St: St.35	
Surface Area of Sediment(m)	0.0384
Water Volume(1)	6.72
Water Depth(m)	0.175
Sediment Thickness(m)	0.19

Dat	e	Time	Interval	Flow rate	Retention	Inf	luent	Effl	uent	_ ⊿ ₽0	02 Consumptio
	-	(Day)	Time(day)	(1/day)	Time(day)					(mg/l)	
		(1-47	••••			Tenp. C	DO(mg/l)	Temp. C	DO(mg/1)	l	(02 g/m/day)
lpr. 8	20:00	0.00		-		; -	-	-		; -	-
pr. 9	12:30	0.69	0.69	2.85	2.36		7.30	21.5	3.20	4.1	
pr.10	10:30	1.60	0.91	5.33	1.26		7.60		4.50	3.1	0.734
pr.11	8:30	2.52	0.92	5.47	1.23	: -	7.25		3.55		0.823
pr.11	18:30	2.94	0.42	· 7.63	0.88	. ~	7.45		0.10		1.454
pr.12	10:30	3.60	0.66	7.78	0.86	22.0	7.20		1.70		0.847
pr.13	9:00	4.54	0.94	7.63	0.88	21.5	7.50		3.10		0.975
pr.13	18:00	4.92	0.38	7.34	0.92	21.5	7.00	19.9	0.90		1.247
pr.14	10:00	5.58	0.66	7.42	0.91	21.8	6.90	20.0	3.80	: 3.1	0.543
pr. 14	17:30	5.90	0.32	7.42	0.91	22.5	7.10	20.8	0.80	6.3	1.301
pr.15	10:00	6.58	0.68	8.06	0.83	24.0	6.70	22.8	2,90		0.720
pr.16	13:30	7.73	1.15	7.50	0.90	; -	6.60		2.20	4.4	0.989
pr.17	10:00	8.58	0.85	7.63	0.88	24.2	6.70	23.4	2.30	4.4	0.999
pr.19	10:30	10.60	2.02	7.34	0.92	-	6.70	-	3.90	2.8	0.610
pr.20	15:00	11.79	1.19	8.91	0.97	24.3	6.80	23.0	4.30	2.5	0.787
pr.21	8:30	12.52	0.73	7.08	0.95		6.70	23.2	4.30	2.4	0.901
pr.22	10:00	13.58	1.06	5.83	1.15	24.9	8.60	22.9	4.40	2.2	0.695
pr.23	11:30	14.65	1,07	5.47	1.23		6.60	23.3	4.90	: 17	0.633
pr.24	15:30	15.81	1.16	5.47	1.23		6.90	23.0	3.50	3.4	0.766
pr.25	15:30	16.81	1.00	3.89	1.73		7.10	-	0.70	6.4	0.671
pr.28	10:00	19.58	2.77	2.59	2,59		8.98	-	0.60	6.4	0.407
pr.30	15:30	21.81	2.23	3.89	1,73		6.98	-	0.40	6.6	0.643
ay. 4	15:30	26.81	5.00	4.03	1,67	-	6.98	-	0.80	6.2	0.627
av. 5	11:00	27.63	0.82	4.32	1,56		6.98		1.10	5.9	0.626
ay. 7	14:00	29.75	2.12	4.18	1,61	· _ ·	6.98	-	1.20	5.8	0.614
IEAN	11.00			5.96		23.1	6.98	21.9	2.46	4.5	0.712
Not											

Because of lack of data, the mean DO were used

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Table APP 4.4-2(5) Oxygen Consumption by Sediment

Date: April.10 - Hay.5 1993	
St: St.36	
Surface Area of Sediment(m)	0.0384
Water Volume(1)	6.34
Hater Depth(m)	0.165
Sediment Thickness(m)	0.2

Pate	9				Retention		luent	Effl	uent		02 Consumptio
•		(uay)	Time(day)	(1/day)	Time(day)		DO(mg/1)	Temp.*C	DO(mg/1)		Rate (O2 g/m/day)
pr. 8	20:00	0.00						-			-
	12:30	0.69	0.69	2.66	2,38		7.30	-	0.80	6.5	
	10:30	1.60	0.91	4.90	1.29	21.6	7.60		1.40		0.738
pr.11	8:30	2.52	0.92	5.18	1.22		7.25		0.10	7.2	0.933
pr.11	18:30	2.94	0.42	7.06			7.45		0.20		1.252
pr.12	10:30	3.60	0.66	7.42			7.20	20.4	0.10	7.1	1.327
pr.13	9:00	4.54	0,94	7,34		21.5	7.50		1.00		1.126
	18:00	4.92	0.38	6.91	0.92	21.5	7.00	19.8	0.10	6.9	1.208
pr.14	10:00	5.58		6.91	0.92		6,90		0.30		1.112
or.14	17:30	5.90	0.32	6.91	0.92		7.10		9.00	7.1	1.244
pr.15	10:00	6.58	0.68	7.42	0.85	24.0	8.70	22.7	0.20	6.5	1.190
pr.16	13:30	7.73	1.15	6.77	0.94		6.60		0.10		1.107
pr.17	10:00	8.58	0.85	7.50	0.85	24.2	6.70		0.00	6.7	1.275
pr.19	10:30	10.60	2.02	7.34			6.70		0.60		1.120
pr.20	15:00	11.79	1.19	6.62			6,80	22.9	2.20	4.6	0,710
pr.21	8:30	12.52		6.91	0.92	÷ –	6.70		1.90	4.8	0.950
pr.22	10:00	13.58	1.06	6.91	0.92	24.9	6.60	23.1	2.30	4.3	0.832
	11:30	14.65	1.07	7.13			6.60		2.30		0.885
pr.24	15:30	15.81	1.16	7.13	0.89	24.5	6.90	22.9	1.90		0.987
pr.25	15:30	16.81	1.00	5.33	1.19	-	7.10		0.10		0.942
pr.28	10:00	19.58	2.77	5.62			6.98	- 1	0.20		0.956
pr.30	15:30	21.81	2.23	4.46			6.98	-	0.10	6.9	0.763
	15:30	26.81	5.00	4.32			6.98	- 1	0.20	6.8	0.729
ay. 5	11:00	27.63		4.18			6.98	-	0.10		0.706
	14:00	29.75	2.12	4.18	1.52	· -	6.98	-	0.10	6.9	0.712
EAN				6.13		23.1	6.98	21.9	0.68	6.3	0.834

Note:

Because of lack of data, the mean DO were used

Table APP 4.4-2(6) Oxygen Consumption by Sediment

Date: April.10 - May.5 1993	
St: St.37	
Surface Area of Sediment(m)	0.0384
Water Volume(1)	6.53
Water Depth(m)	0.17
Sediment Thickness(m)	0.195

Dat	e	Time	Interval		Retention		luent	Effl		⊿00	02 Consumptio
		(Day)	Time(day)	(1/day)	Time(day)		DO(mg/1)	Tenn. "C	DO(mg/1)	(mg/1)	Rate (02 g/m/day)
pr. 8	20:00	0.00				: : :					(99. 17. 19 May).
pr. 9	12:30	0.63	0.69	2.81	2.32		7.30		4.90	2.4	-
pr.10	10:30	1.60	0.91	5.18	1.26	21.6	7.60	· ·	5.80		
pr.11	8:30	2.52	0.92	5.04	1.30		7.25		5.80		
pr.11	18:30	2.94	0.42	7.34	0.69		7.45		4.20	3.3	1.189
pr.12	10:30	3.60	0.66	7.63	0.86	22.0	7.20		5.10		0.988
pr.13	9:00	4.54	0.94	6.62	0.99	21.5	7.50	20.2	5.40		0,898
pr.13	18:00	4.92	0.38	7.20	0.91		7.00		4.10		1.081
pr.14	10:00	5.58	0.66	7.27	0.90	21.8	6.90	20.4	4.90	2.0	0.899
pr.14	17:30	5.90	0.32	7,27	0.90	22.5	7.10	21.1	4.00	3.1	1.107
pr.15	10:00	6.58	0.68	6,91	0.95	24.0	6.70	22.8	5.80		0.747
pr.16	13:30	7.73	1.15	9.14	0.71	-	6.60	-	6.10	0.5	0.796
pr.17	10:00	8.58	0.85	7.92	0.82	24.2	6.70	23.2	5.50	1.2	0.945
PF.19	10:30	10.60	2.02	6.91	0.95	-	6.70	-	4.70	2.0	0.619
pr.20	15:00	11.79	1.19	5.98	1.09	24.3	8.80	23.3	4.90		0.685
pr.21	8:30	12.52	0.73	7.06	0.92		6.70	23.3	4.90	1.8	0.872
pr.22	10:00	13.58	1.06	7.20	0.91	24.9	6.50	23.3	5.00	1.6	0.779
pr.23	11:30	14.65	1.07	7.49	0.87	24.5	6.60	23.1	4.90		0.813
pr.24	15:30	15.81	1.16	7,49	0.87	24.5	6.90	23.3	5.90		0.745
pr.25	15:30	16.81	1.00	5.33	1.23	· -	7.10	-	3.30	3.8	0.807
pr.28	10:00	19.58	2.77	5.18	1.26		6.98	-	3.90		0.483
pr.30	15:30	21.81	2.23	4.18	1.56	: -	6.98	́ –	3.40		0.507
ay. 4	15:30	26.81	5.00	4.32	1.51	· ·	6.98	-	3,20	3.8	0.420
ay. 5	11:00	27.63	0.82	4.18	1.56	: -	6.98	-	2.80	4.2	0.593
	14:00	29.75	2.12	4.03	1.62	: . -	6.98	-	3.10	3.9	0.480
EAN				8,24		23.1	6.98	22.1	4.65	2.3	0.651

Because of lack of data, the mean DO were used

APP 4-22

APPENDIX 5

NUTRIENT SUPPLY AND ITS CYCLE IN THE BAY

therrodus	335555555 Woodif (4			***************************************
Area	Area	NH4-N	P04-P	COD (Mn)
	(x 10 ⁻ 6	(g/m2/day)	(g/m2/day)	(g/m2/day)
			(ton/day)	
=======================================	azzzzz==	**********	*******	**********
Juru juba	7.000	0.026	0.016	0.167
. *		0.182	0.112	1.169
				·
Eastern	10.800	0.026	0.016	0.167
· · ·		0.281	0.1728	1.804
North	102.600	0.047	0.021	0.167
eastern		4.822	2.1546	17.134
				0.145
North	86.900	0.044	0.020	0.167
western		3.824	1.738	14.512
19.	10 000	0.010	0.015	0, 167
Western	49.800	0.210	0.015	
		10.458	0.747	8.317
6	110 000	0.015	0.014	0.167
Central	110.800		1.5512	18,504
1. A.		1.662	1.0014	10.304
Botafogo	5.800	0.015	0.013	0.167
Doratogo	0.000	0.013	0.0754	0,969
		0.007		0.303
Mean rate		0.055	0.016	0.167
		21.316	6, 551	62,408
Total (ton				02.400

Table APP 5.6-1(1) Mean Release Rate and the Total Released Amount in Sub-areas (Dry Season)

Area of the Bay bottom: (365 x 10⁶ m2)

Table 5.6-1(2)

Mean Release Rate and the Total Released Amount in Sub-areas (Wet Season)

· · ·	Amount in	Sub-areas	(Wet Seasor)
Area	Area (x 10^6 m2)	NH4-N (g/m2/day) (ton/day)	P04-P (g/m2/day) (ton/day)	COD (Mn) (g/m2/day) (ton/day)
Jurujuba	7,25	0.026 0.189	0.016 0.116	0.167 1.211
Eastern	10.8	0,026 0,281	0.016 0.1728	0.167 1.804
North eastern	90.6	0.046 4.168	$0.021 \\ 1.903$	0.167 15.13
North western	92.0	0.045 4.140	0.020 1.840	0.167 15.364
Western	48.3	0.019 0.918	0.014 0.676	0.167 8.066
Central	100.9	0.017 1.715	$0.014 \\ 1.413$	0.167 16.850
Botafogo	3, 5	0.015	0.013 0.046	0.919
	n/day-Bay)	0.028 11.462	0.016 6.166	0.167 59.344

Are of the bay bottom: $(355 \times 10^{\circ}6 m^2)$

	Area	. •	TP .		IKN	CO	D(Man)
Sub-area	(x 10^6 m2)		*(Mean conc.) (ton/day)			(m/day)	*(Mean conc.) (ton/day)
Jurujuba	7.0	0. 152	0. 178 0. 189	0.152	1.440 1.532	0.084	4.000 2.352
Eastern	10.8	0.151	0.164 0.267	0.100	$0.934 \\ 1.009$	0.063	2.782 1.893
North eastern	102.6	0.156	0.073 1.168	0.087	0.667 5.954	0.041	2.463 10.361
North western	86.9	0.084	0.240 1.752	0.039	1.528 5.179	0.047	6.450 26.344
Western	49.8	0,060	0.26 0.777	0.038	1.723 3.261	0.081	2.164 8.729
Central	110.8	0.174	0.116 2.236	0.180	0.894 17.830	0.075	$\begin{array}{c} 1.803\\ 14.983\end{array}$
Botafogo	5.8	0.152	0. 199 0. 175	0.152	1.031 0.909	0.084	2.329 1.135
Mean rate Total in layer(ton	the upper /day/Bay)		6. 566	0.679	35.673	0.107	65.796

Table APP 5.6-2(1)Mean Settling Rate of the Particles and the Total Settled Amount
in Sub-areas (Dry Season)

*mean conc.= g/m3 in the upper layer

		in Sub-	areas (Wet Sea	son)	:		
222922222	Area		······ P	dez#zade:	 IKN	COI) (Mn)
Sub-area	(x 10 ⁻ 6 m2)	(m/day)	*(Mean conc.) (ton/day)	(m/day)	*(Mean conc.) (ton/day)	(m/day)	*(Mean conc.) (ton/day)
Jurujuba	7.25	0.152	0. 176 0. 194	0.152	1.287 1.418	0.084	4.000 2.436
Eastern	10.8	0.151	0. 160 0. 261	0.100	1.359 1.468	0.063	6.061 4.124
North eastern	90.6	0.156	0.226 3.194	0.087	1.621 12.777	0.041	7.587 28.183
North western	92.0	0.084	0.167 1.291	0.039	1.321 4.740	0.047	3.38 14.615
Western	48.3	0.060	0.283 0.820	0.038	1.781 3.269	0.081	4. 461 17. 453
Central	100.9	0.174	0.111 1.949	0.180	0.823 14.947	0.075	3. 454 26. 138
Botafogo	3.5	0.152	0.083 0.044	0.152	0.83 0.442	0.084	2.390 0.703
Mean velo Total(ton,	-	0. 132	7.753	0.679	39.061	0.107	93.651

Table APP 5.6-2(2) Mean Settling Rate of the Particles and the Total Settled Amount in Sub-areas (Wet Season)

APPENDIX 7

AQUATIC ORGANISMS IN AND AROUND THE BAY

APPENDIX 7. 1-1

PHYTOPLANKTON COMMUNITY

TABLE APP.7.1-1

Results of classification and quantification of phytoplankton samples collected during first phase simultaneous survey.

(May / 1992)

APP 7-1

Phytoplancton Population Counting	Station 1 - 5m. Date: 18th/May/1992 - 09:15 H. Tide: high	Phytoplancton Group	Oscillatoria liunetica	<u>BACILLARIOPHY CEAE</u> Centricae	Gyclotella sp		Rhizosolenia delicatula	nalassiosira sp		NICCACITA CONSULTUME	var. subtilis.			Pyramimonas Sp	SILTCOFLACELADOS	Dictyocha fibula	Cryptomonas sp ₁	Dinophysis ovum. Uxytoxum reticulatum. Prorocentrum Dalticum.	Provocen trum mi cans. Provocen trum compressum	n - 570 - 591	Pyrocystis sp
Table	•							·								·					·
·		Numb.Org./I.	•	661 6	001 *		3.376	4.188	4,188		8,376	8.376	20.940	16.752 25 128		8.376		8.376 8.376	12,564		138,204
Phytoplancton Population Counting	Station 1 - Surface Date: 18th/May/1992 - 09:15 M. Tide: high	Phytoplancton Group	NOSTOCOPHYCEAE	Filamentosas Oscillatoria so.	24/111.351/05/VF557. (443+005700)	Centricate ("a consecat")	Leptocylindrus miniaus	Mrizosolenia alata	Rhizosolenia setigera	Pennatae	Nitzschia closterium.	Nitzschia longissima	Nitzschia pungens	NTUZSCHIA SIGMA	PRASINOPHYCEAE (presinoficeas)	Pyramimonas sp	DINOPHYCEAE (dinoflagelados)		Protoperidinium trochoideum.		Total:

Table

Numb.Org./L.

APP 7-2

Table Phytoplancton Population Counting Station 2 ~ 5m. Date: 18th/May/1992 - 11:05 H. Tide: high Phytoplancton Group	NOS TOCOPHYCEAE Filamentosas Oscillatoria limmetica	Centricae Chaetoceros danicus	Cocconeissp10.11.167NitzschfaJongissima33.501NitzschfaIorenzianavar.33.501Nitzschfaserfata33.501Pleurosignabalticum11.167Synedrasp11.167	CHRYSOPHYCEAE Kephyrion sp	Pyramimonas sp 22.334 Tetraselmis sp 156.338 CRYPTOPHYCEAE 156.338 Cryptomonas sp 89.336 DINOPHYCEAE 33.501	0xy toxum sceptrum 11.167 Prorocentrum balticum 11.167 Protoperidinium trochoideum 44.668 Protoperidinium sp. 33.501 Protoperidinium sp. 33.501 Protoperidinium sp. 33.501 Total: 3.316.599
Numb.Org./L.	11. 892. 855 2. 445.573 .	33,501 234,507 100,503 33,501 33,501 33,501 33,501 33,501	2.077.042 1.407.042 100.503 33.501	569.517 5.929.677	33.501 33.501 435.513 33.501	33.501 33.501 33.501 33.501 23.501 23.501 33.501 33.501
<pre>Phytoplancton Population Counting Station 2 - Surface Date: 18th/May/1992 - 11:05 H. Tide: high Phytoplancton Group</pre>	NOS TOCOPHYCEAE Filamentos as Oscillatoria limmetica BACILLARIOPHYCEAE Centricae Centricae	Chaetoceros affinis Chaetoceros danicus Coscinodiscus cf. radiatus Coscinodiscus cf. radiatus Guinardia flaccida Ueptocylindrus danicus Rhizosolenia fragilissina Rhizosolenia fragilissina Khizosolenia fragilisina	Pennatae Natassiosiva rotula Pennatae Nitzschia longissima. var. subtilis. Pleurosigma balticum.	PRASINOPHYCEAE Pyramimonas sp Tetraselmis sp	EUGLENOPHYCEAE Eutreptiella marina. Não identificados CRYPTOPHYCEAE Cryptomonas sp. Cryptomonas sp.	DINOPHYCEAE Ceratum furca Ceratum trica Prorocentrum balticum. Prorocentrum triestinum. Prorocentainum sp2 CHRYSOPHYCEAE Kephyrian sp

27.135.810

Total:....

Numb.Org./L.

Table

APP

7-3

Phytoplancton Population Counting

Table

Station 3 - Surface Date: 18th/May/1992 - 11:55 H. Tide: high

Phytoplancton Group

Numb.Org./L.

NOSTOCOPHYCEAE

oscillatoria limmetica	12.395.370
Uschilatoria sp.	703.521
BACILLARIOPHYCEAE	
Centricae	
Biddulphia mobiliensis	33.501
Chae toceros dani cus	33.501
Coscinodiscus cf. radiatus	67.002
Leptocylindrus danicus	335.010
Leptocy Indrus minimus	134.004
Skeletonema costatum	402,012
inalassiosira rotula.	33.501
inglassiosira sp	368.511
	67.002
	1.273.038
Nitzschia seriata	33.501
CHRYSOPHYCEAE	
Kephyrion sp	100.503
PRASINOPHYCEAE	
	134.004
letraseimis sp	1.005.030
CRYP TOPHY CEAE	
Cryntomonas sp.	268.008
Cryptomonas sp2	67,002
DINOPHYCEAE	

Kephyrion sp	100.50
Pyramimonas sp Pyramimonas sp Tetraseimis sp	134.00
Cryptomonas spl Cryptomonas spl	268.00
Ceratium furca Leratium tripos.	33 50 33

<u>Lryptomonas</u> sp ₂	6/ .UUZ	CKYPTOPH	EDE
Ceratium furca Ceratium tripos Usytoxum reticulatum. Prorocentrum balticum. Protoperidinium divergens. Protoperidinium sp. Protoperidinium sp.	33.501 33.501 33.501 33.501 33.501 134.004 33.501 134.004 67.002	27H4G0N10	PHYC
7			

11.155.833

Total:....

33.501

Não identificados.....

EUGLENOPHYCEAE

18.626.556

Total:.....

Table

Phytoplancton Population Counting

Station 3 - 5m. Date: 18th/May/1992 - 11:55 H. Tide: high

Phytoplancton Group

Filamentosas

NOS TOCOPHY CEAE

Numb.Org./L.

67.002 100.503 301.509 167.505 33.501 6.867.705 1,805.054 234.507 569,517 536.016 67.002 33.501 167.505 67.002 33.501 100.503 Oscillatoria limmetica..... <u>Oscillatoria</u> sp₂ Leptocylindrus danicus. Cryptomonas sp1 Chaetoceros danicus. Skeletonema costatum. Thalassiosira rotula. Nitzschia lorenziana var. subtilis. Pleurosigma balticum..... Tetraselmis sp Thalassicsira sp Oxytoxum sp Prorocentrum ini cans..... Protoperidinium trochoideum..... Coscinodiscus cf. radiatus..... Protoperidinium sp₁ BACILLARIOPHYCEAE Centrri cae Pennatae PRAS INOPHYCEAE HYCEAE CEAE

Numb.Org./L.	N9 Org./litro	16.750 16.750 16.750 16.750 50.250 50.250 16.750	16.750 5.276.250		
Phytoplancton Population Counting Station 5 - Surface Date: 18th/May/1992 - 13:35 H. Tide: high Phytoplancton Group	(Continuação)	DINOPHYCEAE Ceratium furca. Ceratium trichoceros Ceratium tripos oxytoxum sp Protoperidinium trochoideum. Protoperidinium sp Protoperidinium sp Protoperidinium sp	<u>SILICOFLAGELADOS</u> Ebria <u>tripartita</u> Total:		
Table					
Numb.org./L.	2.881.000 184.250	50.250 16.750 16.750 16.750 17.250 17.250 17.250 16.750 33.500 33.500 16.500 16.500 201.000	16.750 435-000 16.750 16.750 16.750 16.750 16.750	117.250 50.250 251.250 134.000 33.500	
Phytoplancton Population Counting Station 5 - Surface Date: 18th/May/1992 - 13:35 H. Tide: high Phytoplancton Group	NOSTOCOPHYCEAE Filamentosas Osciliatoria limmetica	Contractoceros danícus. Coscinodiscus et centralis. Coscinodiscus et angrinatus. Coscinodiscus et adratus. Uverlotella sp Uverlotella sp Hemlaulus sinensis. Leptocylindrus annimus. Mnizosolenia alata. Mnizosolenia alata. Mnizosolenia alata. Mnizosolenia sinta. Mnizosolenia somoederi Steletonema costatum. Inalassiosira sp	Pennatae Nitzschia longissima	CHRYSOPHYCEAE Kephyrion sp PRASINOPHYCEAE Pyramimonas sp Letraselmis sp CRYPTOPHYCEAE Cryptomonas sp	
таріе					

Phytoplancton Population Counting Table

Station 4 - Surface Date: 18th/May/1992 - 13:00 H. Tide: high

Phytoplancton Group

NOS TOCOPHYCE AE

lim	sp2	
sas cillatoria	ci l la tori a	
Filamentosas Oscil	S	LARI OPHY CEAE
		BACILLA

10.988.328 1.239.537

<u>etica.....</u>

	134,004	569.517	201,006	33,501	402,012	871.026		67,002	67,002	1.373.541		134.004		368, 511	1.440.543
Centri cae	Chaetoceros danicus	Leptocylindrus danicus	Leptocylindrus minimus	Whizosolenia stolterrothii	Skeletonema costatum	Ihalassiosira sp	Pennatae	Mavicula sp	Nitzschla longissima	Nitzschia lorenziana var. subtilis.	CHRY SOPHY CE AE	Kephyrion sp	PRAS INOPHY CEAE	Pyramimonas sp	letraseimis sp

Numb.Org./L.	

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Tat	
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ytoplancton Population Counting

Station 4 - 3m. Date: 18th/May/1992 - 13:00 H. Tide: high

Phytoplancton Group

Phytoplancton Group	Numb.Org./L.
NOS TOCOPHY CE AE	
Filamentosas	·
Oscillatoria limmetica	6.599.500
<u>Dscrilatoria</u> sp ₂	33.500
BACILLARIOPHYCEAE	
Centrí cae	
Coscinodiscus cf. centralis	16.750
CycloteIla sp	16.750
σ	67.000
Leptocy lindrus miniaus	16.750
Rhizosolenia fraqilissima.	16.750
Rhizosolenia stolterrothii	16.750
Skeletonema costatum	134.000
Inalassiosira sp	167.500
Pennatae	
Nitzschia Iongissima	67.000
Nitzschia lorenziana var. subtilis	569.500
Pleurosigna balticum	16.750

Kephyrion sp	50.250
PRAS INOPHYCEAE	
Pyramimonas sp	50.250
Tetraselmis sp	284.750
EUGLENOPHYCEAE	
Eutreptiella marina	83.750

CHRYSOPHY CEAE

. Cryptomonas sp₁ Cryptomonas sp₂ DINOPHYCEAE

CRYPTOPHYCEAE.

904.527 100.503

Cryptomonas sp1 Uryptomonas sp2

33.501 33.501

EUGLENOPHYCEAE

CRYPTOPHYCEAE

DINOPHYCEAE

268.000 33.500

Oxy toxum sp Prorocentrum triestinum. Prorocentrum balticum. Protoperidinium divergens. Protoperidinium sp Protoperidinium sp Protoperidinium sp Protoperidinium sp

33.501 33.501 100.503 100.503 201.006 67.002 167.505 134.004

Ceratium tripos <u>bymrodifium sp</u> <u>Uxytoxum sp</u> Prorocentrum balticum. Protoperidinium divergens Protoperidinium sp Protoperidinium sp Protoperidinium sp Protoperidinium sp

16.750 33.500 33.500 33.500 33.500 16.750 16.750 16.750 16.750

8.911.000

Total:.....

19.899.594

Total:....

PRASI

Phytoplancton Population Counting

Table

Station 5 - 5m. Date: 18th/May/1992 - 13:35 H. Tide: high

Phytoplancton Group

Numb.Org./L.

NOS TO COPHY CEAE

6.532.695 804.024 67.002 33.501 134.004 234.507 33.501 435.513 Coscinodiscus cf. rediatus. Leptocylindrus danicus..... Leptocylindrus minimus..... Chaetoceros danicus..... Filamentosas BACILLARIOPHYCEAE Centri cae

Nitzschia closterium. Nitzschia longissima. Nitzschia lorenziana var. subtilis.... Thalassiosira sp Pennatae

Skeletonema costatum.....

33.501 67.002 402.012

167.505 335.010 33.501 67.002 804.024 33,501 Cryptomonas sp₁ Kephyrion sp EUGLENOPHYCEAE Eutreptiella marina...... PRAS INOPHYCE AE CHRYSOPHYCEAE **CRYPTOPHYCEAE** DINOPHY CEAE

Prorocentrum balticum. Protoperidinium divergens. Protoperidinium trochoideum. Protoperidinium sp₁

33.501 33.501 100.503 67.002 33.501

10.485.813

Total:....

Table

Phytoplancton Population Counting

Station 6 - Surface Date: 18th/May/1992 - 11:50 H. Tide: high

Phyto

Phytoplancton Group	Numb.Org./L.
Ē	16.750.500
BACILLARIOPHYCEAE	
Centricae Coscinodiscus of radiatus	100 503
	100.503
Leptocylindrus minimus.	134.004
knizosoren a serigera. Skejetonena ostatum. Inaldasītosīta sp	134-004 134-004 67-002
Pennatae Iongissima	268,003
Nitzschia Torenziana var. subtilis	1.943.058
CHRYSOPHYCEAE	
Descreduration Sp	301.509
	134,004
Tetraselmis sp	2.981.589
Eutreptia sp	134.004
	737.022
DINOPHYCEAF	33.501
Ceratium	33.501
Prorocentrum balticum	67.505
Prorocentrum micans	33.501
Protoperidinium divergens Protoperidinium cf. steinii	33.501 33.501
÷];	402.012 368 511
Protoperidinium sp3	67.002
Total:	27.236.313

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Phytoplancton Population Counting

Station 6 - 5m. Date: 18th/May/1992 - 11:50 K. Tide: high

Phytoplancton Group

Numb.Org./L.

NOSTOCOPHYCEAE

	9.212.775	469.014	100.503			33.501	301.509	100.503	100.503	33.501	134.004	67.002	435.513		167.505	900 000	000-007	33.501	÷	33.501	33.501	11.524.344
Filamen tosas	Oscillatoria limetica	Oscillatoria spi	<u>Oscillatoria</u> sp ₂	BACILLARIOPHYCEAE	Centricae	Coscinodiscus cf. radiatus	Cyclotella sp	Leptocylindrus minimus	Skeletonema costatum	Thalassiosira sp	Pennatheptocylindrus danicus	Nitzschfa longissima	Nitzschfa sigma	CHRYSOPHYCEAE	Kephyrion sp		ietraseimis sp	LKTFIUPHTCERE Cryptomonas sp ₂	DINOPHYCEAE	Oxytoxum sceptrum	Prorocen trum balticum	 Total:

Table

Phytoplancton Population Counting

Station 7 - Surface Date: 18th/May/1992 - 11:15 H. Tide: high

Phytoplancton Group

Numb.Org./L.

NOS TOCOPHYCEAE

12.596.376 167.505 1.242.555 8.408.751	33.501 33.501 33.501 435.513 167.503 367.503 367.005 382.010	67.002 <u>subtilis</u> 569.517 502.515	301.509 2.512.575 33.501	1.205.036 1.205.036 469.014 67.002
Filamentosas <u>Oscillatoria limmetica</u> <u>Öscillatoria</u> spl <u>Wão filamentosas</u> sp <u>Synechocystis</u> sp	BACILLARIOPHYCEAE Centricae Chaetoceros danicus Cyclofella 5p danicus Leptocylindrus danicus Skeletonema cos tatum Inalassiosira sp	Pennatae Nitzschia longissima	Pyramimonas s letraselmis s Eutreptia sp	CRYPTOPHYCEAE Cryptomonas sp1 Cryptomonas sp2 DINOPHYCEAE OXYLOXUM meticulatum

Total:

34.573.032 .

33.501 33.501 33.501 33.501 335.010 234.507 201.006 33.501

Promocentrum tries tinum. Protoperidinium trochoi deum. Protoperidinium sp. Protoperidinium sp2

0xy toxum sceptrum.....

.....

0xy toxum sp

Prorocentrum balticum.

Table

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Phytoplancton Population Counting	
Station 7 - 3m. Date: 18th/May/1992 - 11:15 H. Tide: high	. •
Phytoplancton Group	Numb.Org./L.
NOSTOCOPHYCEAE Filamentosas Oscillatoria limmetica	6.867.705 435.513
BACILLARIOPHYCZIE	~
3	67.002 100.503
in	33-501 33-501
vycioteria sp Leptocy indrus danicus	67.002 268.008 235.503
Tenta de Tenta de	402.012
<u>Tnalassiosira sp</u> Pennatae	335.010
Nitzschia longissima	33.501 335.010 33.501 33.501
CHRYSOPHYCEAE Kephyrion sp	301.509
I.	•
Eutreptia sp Eutreptiella marina	33.501 33.501
PRASINOPHYCEAE Pyramimonas sp	33.501
	335.010
<u>Cryptomonas</u> sp ₁ <u>Cryptomonas</u> sp ₂	301.509 100.503
Oxytoxum reticulatum Oxytoxum septrum Protoperidinium sp Protoperidinium sp Protoperidinium sp	67.002 33.501 33.501 33.501 33.501

Table

Phytoplancton Population Counting

Station 8 - Surface Date: 18th/May/1992 - 10:30 H. Tide: high

Phytoplancton Group

Numb.Org./L.

NOS TOCOPHY CEAE

Filamentosas	
Oscillatoria limetica	9.715.290
Oscillatoria sp.	603.018
Oscillatoria sp,	3.484.104
Não filamentosas	
Synechocystis sp	16.649.997
BACILLARIOPHYCEA	
Centricae	
Leptocylindrus danicus	100.503
Leptocylindrus minimus	33.501
Skeletonema costatum	33.501
Thalassiosira sp	6.599.697
Pennatae	
itzschia	33.501
	201.006
Nitzschia seriata	33,501
N1tzschia signa	33,501

Keohvrion sn CHRYSOPHYCEAE.

Kephyrion sp	1.373.541
EUGLENOPHYCEAE	
Eutreptia sp Eutreptiella marina	167.505 33.501
PRAS IN OPHY CEAE	
Pyramimonas sp Tetraselnis sp	804.024 1.038 531
CXYPTOPHYCEAE	
Cryptomonas spl	1.909.557 335.010

33.501 33.501 33.501 33.501 569.517 Oxy to xum scep trum. Oxy to xum sp Prorocen trum micans. Pro toperidinium trochoideum.

DINOPHYCEAE

43.852.809

To ta1:.....

11.088.831 Total:....

APP 7-9

Phytoplancton Population Counting Table

Station 8 - 2m. Date: 13th/May/1992 - 11:15 H. Tide: high

Phytoplancton Group

Numb.Org./L.

NOS TOCOPHYCE AE

7.169.214 134.004 1.675.050	33.501 33.501 234.507 368.507 368.507 368.507 360.005 1.340.040	134.004 33.501 33.501 33.501	1.440.543	67.002 100.503	100.503	703.521 1.306.539	
Filamentosas Oscillatoria limnetica Uscillatoria sp2 BACILLARIOPHYCEAE	Centricae Coscinodiscus cf. <u>centralis.</u> Coscinodiscus cf. <u>radiatus.</u> Uspicovilians ganicus Skeletonema <u>costatum</u> . Inalassiosira sp	Pennatae Nitzschia longissima	CHRYSOPHYCEAE Kephyrion sp	Pyramimonas sp Tetraselmis sp	EUGLENOPHYCEAE Eutreptia lanowi	CKYPTOPHYCEAE Cryptomonas sp1	DINOPHYCEAE

Table

Phytoplancton Population Counting Station 9 - Surface Date: 18th/May/1992 - 09:40 H. Tide: high

Phytoplancton Group

Numb.Org./L.

111

NOS TOCOPHY CEAE		
Filamen tosas Oscillatoria Iimmetica. Uscillatoria spi Uscillatoria spi	11.122.332 234.507	
BACILLARIOPHYCEAE		
scinodiscus o	33,501	
Leptocylindrus danicus. Leptocydindrus minimus	67.002 201.006	
elica	33.501	
itzschia itzschia itzschia	67.002 301.509 33.501	
NITZSCHIA	33.501	
UNKISUPHICEAE Kephyrion sp	1.172.535	
PRAS INOPHY CEAE		
Pÿframimonas sp letraselmis sp	1.742.052	
CHLOROPHY CEAE		
Flageladas Chl <u>amydomonas</u> sp	33.501	
EUGLENOPHY CEAE	:	
C I	234.507	
CRYPTOPHYCEAE	167.505	
Cryptomonas sp. Cryptomonas sp.	2.010.060	
DINOPHYCEAE		
Protoperidinum initianis. Protoperidinum frochoideum. Protoperidinum sp.	33.501 388.511	
	134.004	

134.004 33.501 29.581.383

Total:.....

33,501 268,008 33,501

Oxy toxum reticulatum...... Protoperidinium trochoideum..... Protoperidinium Sp₁

15.477.462

Total:....

Numb.Org./L. 14.003.418 938.028 335.010 335.010 2.244.567 33.501 268.008 234.507 469.014 100.503 33.501 402.012 134.004 134.004 67.002 33.501 33.501 33.501 67.002 100.503 33.501 33.501 33.501 33.501 33.501 33.501 33.501 770.523 23.685.207 Chaetoceros danicus. Uvciotella sp. Leptocylindrus danicus. Leptocylindrus danicus. Neeletonema costatum. Thalassiosite rotulia. Thalassiosite sp. Filamentos as Oscillatoria limmetica..... Uscillatoria spi Oscillatoria spi BACILLARIOPHYCEAE Kephyrion sp Cryptomonas sp₁ Xytoxum sp rorocentrum balticum..... Eutreptia lanowi Eutreptia sp uum. To tal:.... ****** i deum. Phytoplancton Population Counting Station 10 - Surface Date: 18th/May/1992 - 08:30 H. Tide: high Ceratium tripos rorocentrum mic Pyramimonas sp letraseimis sp Phytoplancton Group Cen trí cae Pennatae NOS TOCOPHY CEAE EUGLENOPHYCEAE PRAS INOPHYCEAE CHRY SOPHY CEAE CRYPTOPHYCEAE DINOPHYCEAE Table Numb.Org./L. 7.269.500 100.500 1.926.250 16.750 50.250 636.500 16.750 16.750 234.500 469.000 33, 500 16, 750 1.589.500 83.750 268.000 16.750 83.750 16.750 100.500 787.250 16.750 16.750 16.750 16.750 33.500 33.500 33.500 770.500 12 554 200 Oscillatoria limmetica Uscillatoria sp Uscillatoria sp Não filamentosas Synechocystis sp Chaetoceros danícus Uyclotella sp Leptocylindrus danícus Leptocylindrus minimus Skeletonéma cos tatum. Inalassiosira sp Pyramimonas sp Eutreptia sp Kephyrion sp Tryptomonas sp₁ Cryptomonas sp₂ Xytoxum Sceptrum Prorocentrum balticum Protoperidinium Steinii Protoperidinium trochoideum Protoperidinium Sp₁ Oxytoxum reticulatum. Oxytoxum <u>sceptrum</u> Flageladas <u>Chlamydomonas</u> sp Phytoplancton Population Counting Station 9 - Bottom Date: 18th/May/1992 - 09:40 H. Tide: high Phytoplancton Group Filamentosas BACILLARIOPHYCEAE Centri cae NOS TOCOPHY CEAE PRAS INOPHYCEAE EUGLENOPHY CEAE CHRYSOPHY CEAE CHLOROPHY CEAE **CRYPTOPHYCEAE** DINOPHY CEAE

APP 7-11

Table

Phytoplancton Population Counting

Station 10 - 5m. Date: 13th/May/1992 - 08:30 H. Tide: high

Phytoplancton Group	Numb.Org./L.
NOS TOCOPHYCEAE Filamentosas Cscillatoria limnetica	1.675.000
etoceros da etoceros da cinodiscus cinodiscus	16.750 33.500 16.750 16.750
uoscinodiscus sp Uvocidetla sp Leptocylindrus minimus. Rhizosolenia alata. Sxeletonema costatum.	16.750 67.000 150.750 83.750 83.750 16.750 160.500
Pennatae Gyrosigma balticum. Svitzschia Jongissima Nitzschia Jorenziana var. subtilis Nitzschia sernata. Nitzschia sigma	33,500 16,750 301,500 50,250 33,500
EUGLENOPHYCEAE EUGLENOPHYCEAE CRYPTOPHYCEAE	16.750
Cryptomonas sp1 Cryptomonas sp2 CHRYSOPHYCEAE	16.750 33.500
Keptyrion sp PRASINOPHYCEAE Tetraselmis sp	217.750 16.750
DINOPHYCEAE Oxytoxum reticulatum Uxytoxum sceptrum Protoperidinium trochoideum Protoperidinium spi	16.750 67.000 16.750 83.750

APP 7-12

100

Phytoplancton	on Group	Numb.Org./L.
NOSTOCOPHY CEAE Filament	n tosas	
	<u>Oscillatoria limetica</u> <u>Oscillatoria sp</u> <u>Oscillatoria</u> sp2	17.152.512 703.521 268.008
Não fi	en tos as nechocys ti s	12.696.879
BACILLARIOPHYCEAE Centricae	<u>SEAE</u> Cae	
	Chaetoceros danicus	134.004 67.002
	Cyclotella sp Leptocylindrus danicus	234.507 402.012
	Leptocylindrus minimus. Mnizosolenia delicatula.	134.004 33.501
	kii tooso tenta tragi i 1531 maa. Ske letonema costatum ina lassi ositra sp	67.002 335.010 335.010
Pennatae N	ae Nitzschia longissima	67.002 3.675.050
CHRYSOPHYCEAE		
	Kephyrion sp	1.072.032
PRASINOPHYCEAE		
	Pyramimonas sp Tetraselmis sp	636.519 1.373.541
EUGLENOPHY CEAE	Eutreptia sp	33_501
CRYPTOPHYCEAE		
	Uryptomonas sp Cryptomonas sp	636.519 33.501
DINOPHYCEAE		
		33.501 67.002
		67.002 335.010
		268.008 536.016
·	Protoperidinium sp3	134.004 33.501
	Total:	39.564.681

Table

Station 11 - Surface Date: 18th/May/1992 - 09:05 H. Tide: high

Phytoplancton Population Counting

Total:....

3.249.500

A

ALC: N

Numb.Org./L. 469.014 29,648,385 3.819,114 301.509 100.503 100.503 804.024 234.507 33.501 33.501 435.513 603.018 33,501 234,507 167,505 3.718.611 33.501 268,008 301.509 7.604.727 1.139.034 33.501 33.501 33.501 33.501 33.501 134.004 67.002 134.004 134.004 134.004 134.004 33.501 67.002 51.591.540 Gonyaulax sp <u>Dwytoxum</u> sceptrum. <u>Prorocentrum balficum</u> Prorocentrum indans. Prorocentrum indans. Protoperidinium inconoideum. Protoperidinium sp Protoperidinium sp Protoperidinium sp Chaetoceros danicus. Coscinodiscus cr. radiatus. Uveloterla sp Leptocylindura danicus. Leptocylindura danicus. Skeletonena costatum. Inalassiosira sp Oscillatoria limmetica Uscillatoria Sp. Não filamentosas SACILLARIOPHYCEAE (ephyrion sp Pyramimonas sp letraseimis sp Cryptomonas sp. Cryptomonas sp. Total:..... Cocconeis scutellum. Nitzschia closterium. Nitzschia longissima. Nitzschia longissima var. subtilis. Nitzschia seriata. Phytoplancton Population Counting Station 12 - Surface Date: 18th/May/1992 - 10:40 H. Tide: high Eutreptia lanowi.... Lutreptiella marina. Phytoplancton. Group Filamen tos as Centri cae Pennatae NOS TOCOPHYCEAE PRASINOPHYCEAE EUGLENOPHY CEAE CHRYSOPHYCEAE **CRYPTOPHYCEAE** DINOPHYCEAE Table

Numb.Org./L. 235.507 167.505 33.501 67.502 502.515 502.515 502.515 502.515 402.012 33.501 33.501 1.067.002 670.020 29.112.369 1.172.535 871.026 3.048.591 3.048.591 33.501 33.501 502.515 33.501 33.501 33.501 33.501 33.501 33.501 33.501 33.501 1.206.036 67.002 335.010 33.501 569.517 33.501 Oscillatoria limmetica. <u>Oscillatoria spi</u> <u>Uscillatoria</u> sp¹ Não filamentosas Centralis..... Nitzschia longissima. Nitzschia lorenziana var. subtilis. Nitzschia seriata... Pieurosigma normanii. CHRYSOPHYCEAE Kephyrion sp Synechocystis sp Flageladas Chlamydomonas sp Pyramimonas sp letraseimis sp Cryptomonas sp1 Uryptomonas sp2 Phytoplancton Population Counting oscinociscus cf. centrali coscinociscus cf. nitidus. oscinociscus cf. radiatus Station 11 - Bottom Date: 18th/May/1992 - 09:05 K. Tide: high Scincture spectral sp Chaetoceros danícus rotoperidinium sp. EUGLENOPHYCEAE Eutreptia lanowi Phytoplancton Group Coscinoc NOSTOCOPHYCEAE F11amentosas BACILLARIOPHYCEAE Centri cae Pennatae CRYP TOPHY CEAE CHLOROPHY CEAE DINOPHYCEAE

Table

APP

7-13

Phytoplancton Population Counting	Table	Phytoplancton Population Counting	
Station 13 - Surface Date: 18th/May/1992 - 11;55 H. Tide: high		Station 12 - 5m. Date: 18th/May/1992 - 10:40 H. Tide: high	
Phytoplancton Group Numb.Org./L.		Phytoplancton Group	Numb.Org./L.
NOSTOCOPHYCEAE		NOSTOCOPHYCEAE	
riamentosas <u>Oscillatoria</u> limmetica		Filamentosas Oscillatoria limmetica <u>Oscillatoria</u> sp ₁	11.457.342 201.006 569.517
Não filamentosas Synechocystis sp	÷	BACILLARIOPHYCEAE Centricae Cerataulina bergonii	33.501
Centricae Cyclotella sp		thae poceros dant dus	301-303 35.501 368.511 837.555 134 004
thii		Steletonema costatum. Thalassiosira rotula. Thalassiosira sp	603.018 33.501 301.509
		Pennatae Nitzschia closterium <u>Nitzschia longissima</u>	67.002 100.503
		NTZSCHIA Torenziana var. subtilis Pleurosigma balticum	1.876.056 67.002
<u>Nitzschia longissima</u> var. <u>subtilis.</u> 435.513 <u>Nitzschia seriata</u>		CHRYSOPHYCEAE Kephyrion sp	201_006
Kephyrion sp		CRYPTOPHYCEAE - Cruntomodal SD.	134.004 33.501
EUGLENVARITELAE EUTEPPTIA I anowi	:	DINOPHYCEAE Prorocentrum triestinum	33.501 33.501
<u>Yramimonas</u> sp <u>Tetraselmis</u> sp		Protoperidinium trochoideum Protoperidinium trochoideum	55.501 67.002 368.511
-		Total:	17.856.033
Pronocentrum balticum		· · · · · · · · · · · · · · · · · · ·	
Tota1:			

Table

Table

APP 7-14

Phytoplancton Population Counting

Station 13 - Bottom Date: 18th/May/1992 - 11:55 H. Tide: high

Phytoplancton Group

Numb.Org./L.

NOS TOCOPHYCEAE			
Filamen tosas 0scil 0scil 0scil	n tosas Oscillatoria limmetica. Uscillatoria spi Uscillatoria spi	13.132.392 904.527 5.159.154	
Não fi	filamentosas Synechocystis sp	21.574.644	
BACILLARIOPHYCEAE	AE		
Centricae	cae Cyclotella sp entrevitadmus danieus	33.501 33.501	
- - -	Leptocy indras manteus Leptocy indras minimus Skeletonema costatum. Thalassiosira so	33.501 67.002 11.524.344	
++ 4000			
Pennata Agan N	ae Navicula lyra Nitzschia Torenziana var. <u>subtilis</u> Nitzschia <u>sigma</u> Nitzschia <u>seriata</u>	33.501 402.012 67.002 33.501	
CHRY SOPHY CEAE	Kenhvrion so	1.206.036	
PRAS INOPHYCEAE		-	
	Pyramimonas sp	1.072.032	
EUGLENOPHYCEAE	Tetraselmis sp	33.501	
	Eutreptia lanowi Eutreptialia marina	100.503 67.002	
CRYPTOPHYCEAE			
	Cryptomonas sp ₁	3.819.114	
	Cryptomonas Sp2	9.045.270	

Table

Phytoplancton Population Counting

Station 14 - Surface Date: 18th/May/1992 - 11:04 H. Tide: high

Phytoplancton Group

Numb.Org./L.

NOSTOCOPHY CE AE	
Filamentosas Oscillatoria limmetica Uscillatoria spl Uscillatoria spl	41.005.530 2.546.095 1.340.050
n tos as echocys tis	11.926.445
EACILLARIOPHYCEAE Centricae Cyclotella sp Cyclotella sp Eptocylindrus danicus Skeletonema costatum Inalassiosira sp.	134.005 268.010 134.005 8.040.300
g1SS	402.015 1.474.055 268.010
Kephyrion	1.072.040
UNLUMUTH LEAR Flage fadas Volvocales	402.015
Preamimonas sp	938.035 4.958.185
CRYPTURALEAE Cryptomonas sp1 Uryptomonas sp2	4.824.180 2.412.090
DINOPHYCEAE	
Prorocentrum micans Protoperidinium trochoideum	134.005 2.546.095
Protoperidinium sp ₁ Protoperidinium sp ₃	134.005 134.005

DINOPHYCEAE

00.00

85.093.175

Total:.....

33.501 435.513 33.501 33.501 33.501 68.878.056

Prorocentrum balticum. Protoperidinium trochoideum. Protoperidinium sp. Protoperidinium sp.

Total:....

с К ,

Phytoplancton Population Counting Table

Station 14 - 3m. Date: 18th/May/1992 - 11:04 H. Tide: high

Numb.Org./L.

Phytoplancton Group

NOS TOCOPHY CEAE

Filamentosas Oscillatoria limmetica Uscillatoria sp	20.502.612 1.675.050
I latoria	837.525
BACILLARIOPHYCEAE Centricae	
Coscinodiscus cf. radiatus	67,002
	335.010
Leptocylindrus danicus	134.004
Leptocy lindrus minimus	33,501
SKELE LONGHA COSTATUM	505 001
That assissing sp	1.842.555
-	
itzschia	33,501
	938,028
NITZSCATA LOUGISSIMA	122.014
PRAS INOPHY CE AE	
Pyramimonas sp	67.002
Tetraselmis sp	67,002
CHRYSOPHYCEAE	•
Kephyrion sp	1.407.042
CRYPTOPHYCEAE	
	402.012
Cryptomonas sp2	301.509

335.010 134.004 33.501 100.503 100.503 1.842.555	33.501 938.028 435.513 134.004	67.002 67.002
 	tilis .	-

Table

Phytoplancton Population Counting

Station 15 - Surface Date: 18th/May/1992 - 11:45 H. Tide: high

dnoub	
Phytoplancton	

Phytoplancton Group	Numb.Org./L.
NOSTOCOPHYCEAE Filamentosas Osciilatoria limnetica. <u>Osciilatoria</u> sp _i	19.598.085 1.775.553
BACILLARIOPHYCEAE Centri cae Chaetoceros danicus Coscinodiscus cf. radiatus	134.004 67.002
	1.172.535 770.523 1.340.040 402.012
Pennatae Nitzschia closterium. Nitzschia longrssima Nitzschia lorenziaia var. subtilis. Nitzschia seriata.	33.501 67.002 1.474.044 67.002
PRASINOPHYCEAE Pyramimonas sp	67.002 1.105.533
CHRYSOPHYCEAE Kephyrion sp	502.515
CRYPTOPHYCEAE Cryptomonas sp1 Cryptomonas sp2	268.008 33.501
DINOPHYCEAE Protoperidinium trochoideum Protoperidinium sp2	67.002 100.503

31.189.431 Total:

100.503 67.002

Eutreptiella marina

EUGLENOPHYCEAE

33.501 100.502 1.038.531 33.501

Dxy to xum sp Protoperidinium cf. steinii..... Protoperidinium sp₁ Protoperidinium sp₃

DINOPHYCEAE

29.179.371

Tota1:.....

Phytoplancton Population Counting

Numb.Org./L. 17.387.019 435.513 201.006 1.172.535 23.216.193 33.501 536.016 402.012 234.507 33.501 33.501 33.501 33.501 268.008 268.008 33.501 33.501 301.509 100.503 33.501 100.503 167.505 971.529 33.501 301.509 67.002 67.002 67.002 Coscinodiscus cf. radiatus Cyclotella sp Leptocylindrus danicus Leptocylindrus antinuus Rhizosolenia deitatula Rhizosolenia stolterrothii Skeletonema costatum Inalassiosira sp Filamentosas Oscillatoria limmetica Uscillatoria spl UScillatoria spl BACILLARIOPHYCEAE Centricae Pennatae Nitzschia closterium...... Nitzschia longissima Nitzschia Jopenziana var. subtilis.... Nitzschia sigma..... Cryptomonas sp₁ Kephyrion sp Pyramimonas sp Tetraselmis sp Oxytoxum reticulatum. Prorocentrum triestinum. Protoperidinium trocholdeum. Protoperidinium Sp2 Protoperidinium Sp3 Phytoplancton Population Counting Station 15 - 3m. Date: 18th/May/1992 - 11:45 H. Tide: high Phytoplancton Group NOSTOCOPHY CEAE PRASINOPHY CEAE **CRYPTOPHYCEAE** CHRYSOPHY CEAE DINOPHYCEAE

	Numb.Org./L.		26.934.804 2.747.082 402.012			368.511 67.002		103 EC		371.026		167.505 33.501	268.008 100 503	•••	. 33.501 . 100.503	. 33.501 67 002	402.012	33.501
Station 16 - Surface Date: 18th/May/1992 - 13:00 K. Tide: high	Phytoplancton Group	NOSTOCOPHY CE AE	Filamentosas Oscillatoria limmetica. Uscillatoria sp. Uscillatoria sp.	BACILLARIOPHYCEAE Centri cae	Chae toceros danícus. Cyclotella sp	Lepfocy i indrus minuus	Skeletonema costatum Inalassiosira rotula. Inalassiosira sp	Pennatae	NT tzschla closerium NT tzschla lorgissima NT tzschla lorenziana var. subtilis. Byrrosigma Dalficum	CHRYSOPHYCEAE Kephyrion sp	PRASINOPHYCEAE	Pyraminonas sp Tetraselmis sp		DINOPHYCEAE	Gymnodinium sp		Protoperidinium trochoideum	 Protoperidinium sp2

7-17 APP

Table

Total:....

33.501 36.114.078

Total:....

Phytoplancton Population Counting

Table

Station 16 - Bottom Date: 18th/May/1992 - 13:00 H. Tide: high Phytoplancton Group

Numb.Org./L.

NOS TOCOPHY CEAE		
Filamentosas		
	llatoria limme	20.569.614 1 407 545
	Ē	569.517
Não fila	lamentosas Sunarborurtis su	CCT 731 NC
EACTLLARIOPHYCEAE		
	the second desired	103 66
		670.020
• +1	•	837.525
	Leptocylindrus minimus	201.006
uc p	01zosolenia stolterrothil	33.501
~ F-	oke le contende cos cacuma. That acciocina son	502 515
Pennatae		
2	iitzschia closterium	67.002
	longissima	100.503
	5 6 1 6 1 6	1.675.050
	~	67.002 22 523
51	Navicula sp	33.501
CHRY SOPHY CEAE	Kephyrion sp	268.008
CRYPTOPHYCEAE		
5	Cryptomonas sp.	368,511
DINOPHYCEAE		
	Dinophysis cf. acuminata	33.501
	Gymnodinium sp	167.505
	Oxytoxum reticulatum	100.503
0	Dxytoxum sceptrum	33,501
	0xy toxum sp,	33.501
0.	Prorocentrum micans	33,501
16	Protoperidinium trochoideum	201.006
ΙΟ- Ι	Protoperidinium sp.	67.002
σ .Ι	Protoperidinium sp2	201.006
EUGLENOPHY CEAE		
ալ	Eutreptia sp	67.002

Phytoplancton Population Counting

Station 17 - Surface Date: 18th/May/1992 - 09:24 H. Tide: high

Phytoplancton Group

Numb.Org./L.

NOSTOCOPHYCEAE

21.909.654 1.440.543 335.010	17.990.037		134,004	536.016 1.273.038	502.515 33.501	703.521	 33.501	100.503 4.221.126 134.004		459.014		134,004		67,002	636.519		33,501	33.501	167.505	335.010
oscillatoria limetica	Não filamentosas Synechooystis sp	BACILLARIOPHYCEAE		1 - 3	Leptocylindrus minimus	Skeletonema costatum Inalassiosira rotula	occoneis.	Nitzschia longissima	CHRYSOPHY CEAE	Kephyrion sp	PRAS INOPHY CE AE	Pyramimonas sp Tetraselmis sp	EUGLENOPHYCEAE	Eutreptia sp	CRYPTOPHYCEAE Cryptomonas sp.	DINOPHYCEAE	Oxytoxum sceptrum.	rum mi cans.	Pronocentrum triestinum Protoperidinium trochoideum	同創

51.993.552

Total:....

53.199.588

Total:....

APP 7-18

Phytoplancton Population Counting

Station 17 - Bottom Date: 18th/May/1992 - 09:24 H. Tide: high

Phytoplancton Group

Numb.Org./L.

NOS TOCOPHY CEAE

10.452.312 301.509 368.511 386.610		268,008 332,515 502,515 502,515 51,505 33,501 33,501 568,008	33.501 33.501 33.501 34.004 1.105.533	167.505
Filamentosas Oscillatoria limnetica <u>Oscillatoria</u> sp ₁ Não filamentosas Sumentosas	<u>Synearocysers</u> sp	Unaetoceros dantous Urgelotella sp Leptocylindrus dantous Rhizosolenia stolterfothii Xeletonema costatum Inalassiosira rotula	Pennatae Navicula sp Nitzschia closterium Nitzschia longissima Nitzschia lorenziana var. subtilis	CHRYSOPHYCEAE Kephyrion sp

33.501	67.002	67.002	33.501	33,501	67.002	18.425.550
EUGLENOPHYCEAE Eutreptia sp	CRYPTOPHYCEAE Cryptomonas sp	Cryptomonas sp2	DINOPHYCEAE 0xytoxum reticulatum	Protoperidinium trochoideum	Protoperidinium sp2	Totå1:

Table

Phytoplancton Population Counting

Station 18 - Surface Date: 18th/May/1992 - 10:20 H. Tide: high

Phytoplancton Group

Numb.Org./L.

NOS TO COPHY CE AE	• .	· .
Filamentosas Oscillatoria limmetica Uscillatoria spl		22.445.670 804.024 335.010
BACILLARIOPHYCEAE	.*	
ri cus	4 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	201,006
Leptocylindrus danicus		134.004 670.020
Donated		
Nitzschia longissima	lis	201.006 1.407.042 67.002
CHRYSOPHYCEAE Kephyrion sp		335,010
EUGLENOPHYCEAE		
Eutreptia lanowi Eutreptia sp		67.002 469.014
Cryptomonas sp ₁	· · · · · · · · · · · · · · · · · · ·	335.010 201.006
DINOPHYCEAE		
Gymnodinium s Uxytoxum reti		134,004 67,002
		1.005.030
Prorocentrum tries tinum.		335.010 20 016 206
		1.005.030
	•	
Pyramimonas sp		67.002
Tetraselmis sp		30.686.916
Total:.		92.261.754

Table

Phytoplancton Population Counting Table

Station 18 - Bottom Date: 18th/May/1992 - 10:20 H. Tide: high

Phytoplancton Group

Numb.Org./L.

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ΞI	

Filamen tos as 05cr1 05cr1 05cr1 84CILLARIOPHYCEAE	ttosas Oscillatoria limmetica Uscillatoria spl Oscillatoria sp2	13.266.396 770.523 1.608.048
5899998 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ae Diaetoceros danicus Coscinodiscus cr. radiatus. Ucciocella sp. Leptocylinderus danicus. Skeletonema costatum.	100.503 33.501 100.503 201.006 134.004 134.004
P enn at at t t t t t t t t t t t t t t t t	inaiacsiosira sp e Cocconeis scuteilum Mavicula sp Navicula sp Navicula sp Navicula sp Navicula sp Navicula sp Navicula sp Inteschia Sigma.	33.501 33.501 33.501 234.507 1.340.040 1.332.501
CHRYSOPHYCEAE	<u>Kephyrian</u> sp	435.513
	Eutreptiella marina	67.002
DINOPHYCEAE	<u>Cryptomones</u> sp ₁	134.004
	Oxy toxum sceptrum Prorocentrum balticum Prorocentrum micans. Prorocentrum triestinum.	33,501 100,503 33,501 33,501

	33,501	100,503	100.503	33,501	33.501	167,505	2.680.030	402.012	·	4.455.633	26.733.798
DINOPHYCERE	0 xy toxum sceptrum	Prorocentrum balticum	Prorocentrum mi cans	Pronocentrum triestinum	Protoperidinium cf. steinii	Protoperidinium trochoideum		Protoperidinium sp2	PRAS INOPHY CEAE	Tetraselmis sp	Total:

APPENDIX 7. 1-2

PHYTOPLANKTON COMMUNITY

TABLE APP.7.1-2

Results of classification and quantification of phytoplankton samples collected during first phase simultaneous survey.

(June / 1992)

Table

Table

APP 7-22

·			Numb.Org./L	2.512.575 33.501	1.574.547		33.501 167.505 234.507	29.547.882	134 004		33.501	67,002		134,004	100.503 67.002 134.004	167.505	33.501	35.343.555
	Table Phytoplankton Population Countinng	Station 17 - Surface Date: 8th/June/1992 - 08:10 hs Tide: high	Phytoplankton Group	NOSTOCOPHYCEAE Filamentosas Oscillatoria Inmetica Oscillatoria spi	Não filamentosas Synechocystis sp	BACTLLARIOPHYCEAE	Venuricae Rhizosolenia delicatula SKeletonema costatum	Pennatae Nifzschia closterium	CHRYSOPHYCEAE Kenhvrion sn	СНГО КОРНУСЕ АЕ	Volvocales	PRASINOPHYCEAE Pyramimonas sp	CRYPTOPHYCEAE	<u>Cryptomonas</u> sp ₁	<u>Oxytoxum reticulatum</u> <u>Oxytoxum sp</u> <u>Protopericinium trochoideum</u>	<u>Protoperidinium</u> sp ₁ EUGLENOPHYCEAE	Eutreptia sp	Total:
			Numb.Org./L	670.020 134.004	201.006	17.487.522	33.501	134,004	100.503	33,501 132 004	234.507	57.002 33.501	33.501	19.295.576	·	•	·	
	Phytoplankton Population Countinng	Station 17 - 5m. Date: 8th/June/1992 - 08:10 hs Tide: high	pla	NOSTOCOPHYCEAE Filamentosas Oscillatoria limnetica	<u>Oscillatoria</u> sp ₂ BACILLARIOPHYCEAE	Abonatas Nitzschia closterium	CHRYSOPHYCEAE CHRYSOPHYCEAE	Kephyrion sp	DINOPHYCEAE Oxytoxum reticulatum	Oxytoxum sp	Protoperidinium sp.	Provocentrum balticum	Promocentrum triestinum	Total:				

Table

APP 7-23

Phytoplankton Population Countinng

Station 16 - 3,5m. Date: 8th/June\1992 - 10:05 hs Tide: high Phytoplankton Group

Phytoplankton Group	Numb.Org./L
NOS TOCOPHY CEAE	
Filamentosas Oscillatoria limmetica	904.527
<u>Oscillatoria</u> sp ₂	100.503
BACILLARIOPHYCEAE	
Centerine Pennal are	
Navicula sp	33.501
Nitzschia closterium	12.395.370
Nitzschia longissima.	33.501
CHRY SOPHY CE AE	
Kephyrion sp	134_004
PRASINOPHYCEAE	
<u>Pyramimonas</u> sp	33,501
CRYP TOPHY CE AE	
Cryptomonas sp.	234.507
Cryptomonas sp2	33, 501

Cryptomonas sp2 Oxytoxum reticulatum..... Oxytoxum sceptrum..... DINOPHYCEAE

201.006 33.501 67.002 167,005

Protoperidinium trochoideum.....

Prorocentrum balticum.....

14.371.429 Total:....

Table

Phytoplankton Population Countinng

Station 16 - Surface Date: 8th/June/1992 - 10:05 hs Tide: high

Phytoplankton Group

l

Numb.Org./L

NOS TO COPHY CEAE		
Fil amentos as		

r 1 Lanen tos as	
Oscillatoria limmetica	1.440.543
<u>Osci l'latoria</u> sp _i	33,501
Não filamentosas Synechocystis sp	8.408.751
BACILLARIOPHYCEA	
ventricae Leptocylindrus danicus	67.002
Pennatae <u>Nitzschia closterium</u>	14.070.420
CHRYSOPHYCEAE	
Kephyrion sp	268.008
PRAS INOPHY CEAE	
Pyramimonas sp	402.012
EUGLENOPHYCEAE	
Eutreptia sp	33.501
CRYPTOPHYCEAE	
Cryptomonas sp ₁	603.018
Cryptomonas sp2	33, 501
DINOPHYCEAE	
Prorocentrum balticum.	33.501
Protopericinium cf. steinii	33.501
Protoperidinium trochoideum	368.511
Protoperidinium sp	67.002
Protoperidinium sp2	33, 501

Sec.3

N. COM

ALC: N

25.894.273 1

Total:....

Phytoplankton Population Countinng

Station 15 - 7m. Date: 8th/June/1992 - 09:30 hs Tide: high

Phytoplankton Group

Numb.Org./L

NOSTOCOPHYCEAE

Filamen tosas.		
	1.189.250 50.250	
<u>oscillatoria</u> spi	027.50	
BACILLARIOPHYCEAE		
Centri cae		
Skeletonema costatum	16.750	
Pennatae		
Cocconeis sp	16.750	
Nitzschia closterium	8.308.000	
Nitzschia longissima	16.750	
Nitzschia sigma	16.750	
CHRY SOPHY CEAE		
Kephyrion sp	167.500	
DINOPHYCEAE		
Dxy to xum sceptrum	33.500	
Oxytoxum sp	16.750	
Protoperidinium sp2	33,500	

Table

Phytoplankton Population Countinng

Station 15 - Surface Date: 8th/June/1992 - 09:30 hs Tide: high

Numb. org. /I Phytoplankton Group

NOSTOCOPHYCEAE Filamentosas Oscillatoria limmetica	4.958,148 268.008
BACILLARIOPHYCEAE Centricae Leptocylindrus minimus	33.501
Pennatae Nitzschia closterium Nitzschia Jongissima	16.180.983 67.002
PRASINOPHYCEAE Pyramimonas sp <u>Letraseimis</u> sp	167.505 871.026
EUGLENOPHYCEAE Eutreptiella marina	33,501
CHRYSOPHYCEAE Kephyrion sp	268.008
DINOPHYCEAE	
<u>Oxy toxum</u> reticulatum	33.501 33.501
Prorocentrum micans	100.503 33.501
Protoperidinium trochoideum.	1,105,533

25.152.752 ł

Total:....

9.382.500

Total:....

Protoperidinium sp2

Countinng
Population
Phytoplankton

Station 14 - 2.5m. Date: 8th/June\1992 - 09:30 hs Tide: high

Phytoplankton Group

1.842.555 67.002 33.501	33.501 234.507 67.002 134.004	7.638.228	134.004 1.306.539	33.501 134.004	67.002 67.002 33.501 33.501 33.501 33.501 33.501 33.501 33.501 33.501 33.501
NOSTOCOPHYCEAE Filamentosas Oscillatoria îimmetica Uscillatoria sp BACILLARIOPHYCEAE	ventri de Rhi zosolenia stolterfothii Khi zosolenia delicatula. Skeletonema costatum. Inalassiosira sp	tzschia clos	PRASINOPHYCEAE Pyramimonas sp	EUGLEROPHÝCEAE Eutreptia sp rinobuvceae	Provocentrum Sp

I/. pro.dmuN

Phytoplankton Group	Numb.Org./L
NOSTOCOPHYCEAE Filamentosas Scillatoria limmetica Oscillatoria sp_ Não filamentosas	2.378.571 67.002
÷	35.712.066
otella sp ocylindru ocylindru osolenia	33.501 469.014 33.501 234.507
kurzosolenia fragilissima. Rurzosolenia stolterfothii. Skeletonema costatum. Thalassiosira sp	536.016 33.501 33.501 134.004
Pennatae Ravicula sp. Nizscria closterium. Nitzscria longissina. Nitzscria sigma.	33.501 1.072.032 33.501 67.002
CHRYSOPHYCEAE Kephyrion sp	469.014
EUGLENOPHYCEAE Eutreptia Janowi. Lutreptia sp Eutreptiella marina.	67,002 67,002 770,523
ProsinupHICEAE Pyramimonas sp Petraselmis sp	435.513 6.767.202
Cryptomonas sp Cryptomonas sp Dranouvreas	703.521
Oxy toxum reticulatum. Oxy toxum sp Pronocentrum bait cum Pronocentrum micans. Protoperidinium sp Protoperidinium sp Protoperidinium sp Protoperidinium cr	167.505 67.602 100.503 3010.503 3010.503 3010.503 435.513 167.505 157.505 33.501 33.501

52.990.532

Total:....

167.505

Cryptomonas sp.

CRYPTOPHYCEAE

13.534.404

Total:....

I

Table

Table

Phytoplankton Population Countinng

Station 14 - Surface Date: 8th/June/1992 - 09:30 hs Tide: high

Table Phytoplankton Population Countinng	Station 13 - Surface Date: 8th/June/1992 - 10:10 hs Tide: high	Phytoplankton Group Numb.Org./L			$\frac{1}{1000} \frac{1}{1000} \frac{1}{10000} \frac{1}{10000} \frac{1}{10000000000000000000000000000000000$	Nau Trainer Dosas Synechocystis Sp		Rhizosolenia delicatula	Thatassiosing sp	Nitzschia sigma	CHRYSOPHYCEAE 1.273.038 1.273.038	•	Pyramimonas sp 971.529 <u>Tetrasetmis</u> sp	EUGLENURNTCHAE Eutreptia lanowi	<u>Eutreptia marina</u>	UKYPIOPHYCLAE Cryptomonas sp ₁	sp2	Prorocentrum balticum.	Promocentrum micens	um trochoideum	Protoperidinium sp ₁	Total: 31.021.926	
Phytoplankton Population Countinng	station 13 - 1.5 m Date: 8th/June/1992 - 10:10 hs Tide: high	Phytoplankton Group Numb.Org./L	NOS TOCOPHYCEAE	Filamentosas Oscillatoria limmetica	<u>05c11 latoria</u> sp ₁	Não filamentosas Synechocystis sp	Cyclotella sp	<u>Khizosolenia Fragilisima</u>				· · · · · · · · · · · · · · · · · · ·	Nitzschia closterium		PRASINOPHYCEAE		<u>ЕUCL ENOPHYCEAE</u> Eutreptia sp	Eutreptiella marina		Pronocentrum Baltloum	Protoperidinium trochoideum	Uryptomonas spi Uryptomonas sp	Total: 40.167.653

Table

APP 7-27

Station 12 - Sm Date: 8th/June/1992 - 08:40 hs Tide: high

Phytoplankton Group

Numb.Org./L

мозтосорнуссаЕ Filementosas Oscillatoria limmetica Öscillatoria spj	4.221.126 100.503 100.503
BACILLARIOPHYCEAE Contrineae	
	33,501 33,501 67,003
1 2050 1 60 1 8 1 2050 1 60 1 8 8 1 8 5 5 1 0 5 1 r 8	33.501
Pennatae Nitzschia closterium. Nitzschia Jongissima. Nitzschia sigmata	17.119.011 67.002 33.501 33.501
	201.006
CHLOROPHYCEAE CHLOROPHYCEAE Volvocales	67.002
PRASINOPHYCEAE	67.002
EUCLENOPHYCEAE Eutreptia sp Eutreptiella marina	33.501 33.501
CRYPTOPHYCEAE Cryptomonas sp ₁ Cryptomonas sp ₂	100.503 67.002
DINOPHYCEAE Oxy toxum reticulatum Oxy toxum scep trum	435.513 33.501 67.002

Table

Numb.Org./L 435.513 67.002 134,004 33,501 167.505 100.503 201-005 569.517 234.507 3, 132, 595 33, 501 10.095.570 33, 501 2.043.561 Não filamentosas Synechocystis sp Kephyrion sp Oscillatoria sp₁ Uscillatoria sp₂ Centricae Thalassiosira sp Oxy to xum reticulatum..... Prorocentrum balticum..... Pennatae Nitzschia closterium Pyramimonas sp Protoperidinium sp. Jetraselmis sp Cryptomonas sp1 Cryptomonas sp2 Oscillatoria limmetica..... Phytoplankton Population Countinng Station 12 - Surface Date: 8th/June/1992 - 08:40 hs Tide: high Nitzschia longissima Phytoplankton Group Filamentosas BACILLARIOPHYCEAE NOSTOCOPHYCEAE PRASINOPHYCEAE CHRYSOPHYCE AE **CRYPTOPHYCEAE** DINOPHYCEAE

Total:....

15 251.396

368.511 67.002 67.002 67.002 358.511 33.501 33.501 67.002

Prorocentrum triestinum. Protoperidinum cr. steinii Protoperidinum inconideum. Protoperidinum sp. Protoperidinum sp.

rorocentrum balticum.....

24: 201.726

APP 7-28

Table

Phytoplankton Population Countinng

Station 11 - 2.5m Date: 8th/June/1992 - 07:50 hs Tide: high

Phytoplankton Group	Numb.Org./L
NOSTOCOPHYCEAE	
Filamentosas	
Oscillatoria limmetica	100.503
<u>Oscillatoria</u> sp ₂	435.513
BACILLARIOPHYCEAE	
Centricae	
Cyclotella sp	33.501
Pennatae	
Nitzschia closterium	12.093.861 67.002

CHRYSOPHYCEAE

201.006	
Kephyrion sp	DINOPHYCEAE

67.002 Prorocentrum balticum.

12.598.338 Total:.....

Table

Phytoplankton Population Countinng

Station 11 - Surface Date: 8th\June\1992 - 07:50 hs Tide: high

Tide: high Phytoplankton Group	Numb. Org. /L
NOSTOCOPHYCEAE Filamen tosas Oscillatoria limmetica	6.231.186 402.012
. .	1
Centricae Leptocylindrus danicus Leptocylindrus minimus Skeletonema costatum	335.010 402.012 67.000 1.708.551
Pennatae Navicula sp	33.501 15.611.466 33.501
CHRYSOPHYCEAE Kephyrion sp	335,010
PRASINOPHYCEAE Pyramimonas sp . Tetraselmis sp	83.750 402.012
Gymnodinium sp	33.501 269 000
Pronocentrum balticum.	67.002
Prorocentrum triestinum Protoperidinium cf. divergens	33.501 67.002
sp.	469.014
	67.000
Protoperidinium sp ₃ Protoperidinium trochoideum	100.503 1.273.036
EUGLENOPHYCEAE Eutreptia sp	33.501
CRYPTOPHYCEAE Uryptomonas splanmines sp	402.012 33.501 28.710.357

2276.0

APP 7-29

Station 10 - 5m Date: 8th/June/1992 - 10:05 hs Tide: high

Phytoplankton Group

Numb.Org./L

556.100

NOSTOCOPHYCEAE Filamentosas Oscillatoria limmetica BACILLARIOPHYCEAE Centricae	Lyciotella sp Leptocylintorus danicus Leptocylintorus annimus Rhizosolenta delicatula Rhizosolenta fragilissima Skeletonema costatum. Pennatae
--	--

6.700	6,700

3.396.500 Total:.... Sealer Sealer

Table

Phytoplankton Population Countinng

Station 10 - Surface Date: 8th/June/1992 - 10:05 hs Tide: high

Phytoplankton Group	T/-pro.dmuN
NOS TOCOPHYCEAE	
ritamentosas Oscillatoria limmetica. Uscillatoria sp ₁	1.340.040 33.501
~	67.002
<u>Synechocystis</u> sp BACILLARIOPHYCEAE	3.718.611
Leptocylindrus minimus. Rhizosolenia delicatria	157.501 33.501 33.501
Rhizosolenia fragilissima Rhizosolenia stolterrothii	52.501 67.002 33.501
tha lass tos tra	167.505
remated Nitzschia closterium. Nitzschia longissima. Nitzschia seriata.	10.619.817 33.501 536.016
CHRYSOPHYCEAE	
Kephyrion sp	67,002
PRAS INOPHYCEAE	
Pyramimonas sp	335.010 1.708.551
EUGLENOPHYCEAE	
Eutreptia sp	100.503 33.501
	335.010
UTYPTORIORAS SP2	100.503
<u>Provocentrum balticum</u>	33.501 737 022
	100.503
Protoperior un micans.	402.012 536.016
	335,010 134,004
Total:	21.876.153
cans sp1	835 134 135 135 135

APP 7-30

Table

Phytoplankton Population Countinng

Station 9 - 5m Date: 8th/June/1992 - 09:30 hs Tide: high

Phytoplankton Group MOSTOCOPHYCEAE Filamentosas Oscillatoria limmetica	Numb.Org./	938.028 134.004	2.278.068
	Phytoplankton Group	NOSTOCOPHYCEAE Filamentosas Uscillatoria limmetica	Não filamentosas ² Svnechocystis sp

closterium
sp. mari

Table

Phytoplankton Population Countinng

Station 9 - Surface Date: 8th/June/1992 - 09:30 hs Tide: high

Numb.Org./L Phytoplankton Group

NOSTOCOPHYCEAE F11 amen tos as	
Oscillatoria limmetica Dscillatoria sp ₂ Não filamentesas	603.018 234.507
E	19.593.085
Chaetoceros danicus. Coscinodiscus cf. radiatus. Cyclotella sn	33.501 33.501 167 505
insh In In	737.022 268.008
1 zoso len 1a a lass 1 os 1 ra	234.507
Pennatae Nitzschia closterium	67,002 134,004 737,022
CHRYSOPHYCEAE Kephyrion sp	100.503
tia	33.501
Eutreptiella marina	402.012
Pyramimonas sp letreselmis sp	603.018 9.112.272
CRYPTOPHYCEAE Cryptomonas sp ₁ Cryptomonas sp ₂	904.527 167.505
Protoperidinium trochoideum Protoperidinium sp ₁	67.002 157.505 33.501

35.042.046

Total:....

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Station 8 - 2m Date: 8th/June/1992 - 09:05 hs Tide: high

Phytoplankton Group

Numb.Org./L

NOSTOCOPHYCEAE Filamen cosas	004 607
Não filméricsás sp	12.897.885
BACILLARIOPHYCEAE Conterrae	
Coscinodiscus cf. radiatus	33.501
Cyclotella sp Petrocylindrus danicus	67.002 1 541.046
	134.004
Rhizosofenia delicatula	167.505
Rhizosolenia stolterfotnii.	100,503
Skeletonema costatum	33.501
Pennatae	
Nitzschia closterium.	100.503
LZS Chi 2	100.503
Nitzschið seriata	938.028
CHRYSOPHYCEAE	
Kephyrion Sp	100.503
PRASINOPHYCEAE	
Pyramimonas Sp	167,505
	569.517
EUGLENDPHYCEAE	
Eutreptia lanowi	33, 501
Eutreptia Sp Futrentia marina	33.501

letraseimis sp	569.517
EUGLENOPHYCEAE	
Eutreptia lanowi	33.501
Eutreptia sp	33.501
Eutreptia marina	33.501
CRYPTOPHYCEAE	
Cryptomonas sp.	234.507
Cryptomonas sp2	67.002
DINOPHYCEAE	

Table

Phytoplankton Population Countinng

Station 8 - Surface Date: 8th/June/1992 - 09:05 hs Tide: high

Phytoplankton Group

Numb.Org./L

•.	
NOSTOCOPHYCERE	

184.250 67.000	12.581.715		33.500 234.500 16.750	67, 000 83,750 33,500	50.250 16.750 318.250	50.250	100,500	284,750	50.250	164,250 83.750
Filamentosas Oscillatoria limmetica Uscillatoria Sp2	Não filamentoses Synechocystis sp	BACILLARIOPHYCEAE Centricae	cycloteila sp LeptocyTradrus danicus LeptocyTradrus annThuis.		Pennatae <u>Nitzschia longissima</u>	CHRYSOPHYCEAE Kephyrion sp	PRASINOPHYCEAE Pyramimonas sp	ے <mark>Tetraselmis</mark> sp	Eutreptia sp	CRYPTOPHYCEAE CTyptomonas SP1 UTyptomonas SP1

Oxy toxum sp Prorocentrum balticum. Prorocentrum micans. Protoperidinium trochoideum. Protoperidinium sp Cryptomonas sp₁ Lryptomonas sp₂

DINOPHYCEAE

201.006 134.004 100.503 167.505 67.002

..... deum

En C Tum trochoi tri es l

Protoperidini Protoperidini

Prorocentrum balticum.

13.794.061

Total

67.000 67.000 83.750 33.500 83.750

15.175.365

Total:.....

Table

Phytoplankton Population Countinng Station 7 - 3m Date: 8th/June/1992 - 08:05 hs Tide: high

Phytoplankton Group

۱

Numb.Org./L

NOSTOCOPHYCEAE F31 amentosas	
Oscillatoria limetica. Uscillatoria so	1,775,553
Não filamentosas	
Synechocystis sp	2.512.575
BACILLARIOPHYCEAE Centri cae	
ci nodi s čus	100.503
Coscinodiscus cf. radiatus	100.503
Cyclotella sp	67.002
Chaetoceros simplex	67.002
Leptocylindrus danicus	1.105.533
Leptocylindrus minimus	167.505
Rhizosolenia delicatula	167,505
Rhizosolenia fragilissima	100.503
l rot	100.503
Skeletoneme costatum	33.501
Pennatae	
	2.948.088
	234.507
Nitzschia seriata	636.519
CHRYSOPHY CEAE	

Nitzscnia Tongissima. Nitzscnia seriata.	234.507
CHRYSOPHYCEAE	
Kephyrion sp	234.507
PRAS INOPHY CEAE	
Pyramimonas sp	33.501
-, letraselmis sp	469.014
EUGLENDPHYCEAE	
Eutreptia sp	100.503
Eutreptiella marina	33.501
CRYPTOPHYCEAE	
Cryptomonas sp,	167.505
DINOPHYCEAE	
Gymnodiaium sp	33.501
Oxy toxum reticulatum	100.503
Prorocentrum micans	67,002
Prorocentrum triestinum	100,503
Protoperidinium trocholdeum,	33.501
Protoperidinium Spi	234.507
Frotoperialainium sp2	167.505

Table

Phytoplankton Population Countinng

Station 7 - Surface Date: 8th/June/1992 - 08:05 hs Tide: high

Phytoplankton Group

Numb.Org./L

NOSTOCOPHYCEAE	
Filamentosas Oscillatoria limmetica. Uscillatoria sp. BACILLARIOPHYCEAE SACILLARIOPHYCEAE	636.519 33.507 67.002
Centricae Vorlotalla sp Leptocylindrus danicus Leptocylindrus minimus Mnizosolenia delicatula Mnizosolenia fragilisima Mnizosolenia stolterrotni Skeletonema costatum Inalassiosīra sp	134,004 1,407,042 134,004 33,501 33,501 33,501 33,501 33,501 100,503
rendize Nitzschia closterium. Nitzschia clongissima. Nitzschia seriata. Nitzschia sigma.	368.511 33.501 536.519 134.004
CHRYSOPHYCEAE Kephyrion sp	100.503
PRASINOPHYCEAE <u>Pyramimonas</u> sp	201.006 2.010.060
CRYPTOPHYCEAE Cryptomonas sp1 Cryptomonas sp2	134,004 67,002
DIMOPHYCEAE Gymnodinium sp Profreentrum balticum	33,501 636,519
cans troch	134.004 67.002 100.503
Protoperidinium sp. Protoperidinium sp. Uxytoxum reticulatum. Oxytoxum sp.	469.014 167.505 67.002 33.501
Eutreptia sp	167.505

8 341 749

·Lc+∩T

11.959.857

Total:.....

Station 6 - 5m Date: 8th/June/1992 - 07:10 hs Tide: high

Phytoplankton Group

Numb.Org./L

	1
NOS TOCOPHYCE AE Filamentosas Oscillatoria limmetica	385.250 50.250
BACILLARIOPHYCEAE	
Centri cae	
Cyclotella sp Leptocylindrus danícus	33.500 67 000
Leptocylfrdrus minimus	50.250
Khizosolenia fragilissima.	16.750
KN120Soventa stolterrocult. Skeletonema costatum	16.750 16.750
	16.750
Pennatae	
Nitzschia closterium. Nitzschia Contissima	1.323.250
	067.00
CHRYSOPHYCEAE	
Kephyrion sp	134.000
EUGLENOPHY CEAE	
Eutreptia sp	16.750
PRASINOPHYCEAE	
Pyramimonas sp	16.750
- Tetraselmis sp	67,000
CRYPTOPHYCEAE	
Cryptomonas sp2	50.250

16.750 16.750 50.250 33.500 16.750 67.000 prorocentrum triestinum..... Gymnodinium sp Dxytoxum reticulatum..... Protoperidinium sp. Cxy toxum sceptrum.... Cinophysis acuminata..... DINOPHYCERE

2.512.500

Total:....

Table

Numb.Org./L 1.507.545 167.505 33.501 33.501 200.503 402.012 33.501 100.503 100.503 33.501 67.002 10.418.811 134.004 502.515 167.505 33.501 33.501 201.005 201.006 67.002 100.503 33.501 33.501 14.505.933 Eutreptia sp Chaetoceros simplex..... Total:.... Promocentrum micans..... Protoperidinium balticum..... 0xy toxum reticulatum. Phytoplankton Population Countinng ^orotoperidinium trochoideum. - 07:10 hs NITZSChia longissima. Nitzschia closterium. Nitzschia seriata. Kephyrion sp minimus Navicula sp Protoperidinium sp₇ Leptocylindrus m Leptocylindrus da Whizosofenia deli Whizosofenia frag Skeletonema costa Flageladas <u>Tetraselmis</u> sp Pyramimonas sp Station 6 - Surface Date: 8th/June/1992 Tide: high Phytoplankton Group NOSTOCOPHY CEAE F11 amen tos as BACILLARIOPHYCEAE Centrí cae Pennatae PRAS INOPHYCEAE EUGLENOPHY CEAE CHLOROPHY CEAE CHRYSOPHYCEAE DINOPHYCEAE.

Table

a second

ALC: NO

Phytoplankton Population Countinng

Station 5 - 5m Date: 8th/June/1992 - 07:50 hs Tide: high

Phytoplankton Group

Numb.Org./L

NOS TOCOPHY CEAE F1 Lamer to 5 as	
atoria	971.500 67 000
Uscillatoria spi	16.750
BACILLARIOPHYCERE	
Centrationa bergonii	16.750
멑	16.750
Leptocylindrus minimus Leptocylindrus danicus	33.500 16.750
tzschia	2.060.250
~ !	33,500
NI TZS CN18 IONGISSIMA	10./30
EUGLENOPHYCEAE	
Eutreptia sp	16.750
CH RY SOPHY CEAE	
Kephyrion sp	83.750
CRY PTOPHY CEAE	
Cryptomonas sp,	33.500
DINOPHYCEAE	
Oxy toxum reticulatum	100.500
Prorocentrum balticum	117.250
Prorocentrum micans	50.250
Protopericinium trochoideum	134,000
Protoperidinium sp.	217.750

Table

Phytoplankton Population Countinng

Station 5 - Surface Date: 8th/June/1992 - 07:50 hs Tide: high

Phytoplankton Group

Numb.Org./L

NOSTOCOPHYCEAE Filamentosas Oscillatoria limnetica	1.306.500	
BACILLARIOPHYCEAE	•	
Controle Coscinodiscus cf. centralis	16.750	
Leptocylindrus danicus	50.250	
Skeletonema costatum	67.000	

2.177.500 16.750 	67.000	33.500 586.250
Pennatae Nitzschia closterium. Nitzschia longissima. Nitzschia seriata	CHRVSOPHYCEAE Kephyrion sp	PRASINOPHYCEAE Pyramimonas sp

CRYPTOPHYCEAE

50.250 100.500

16.750 16.750 368.500

Oxytoxum reticulatum.

67.000

Protopericinium trochoideum. Protoperidinium sp₁ Protoperidinium sp2 4,422,000

Total:....

Gymnodinium sp

DINOPHYCEAE

Pretoperidinium sp1

16.750 234.500

318.250

5.594.500 Total:.....

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Phytoplankton Population Countinng	Table	Phytoplankton Population Countinng	
Station 4 - 3m Date: 8th/June/1992 - 08:20 hs Tide: high		Station 4 - Surface Date: 8th/June/1992 - 08:00 hs Tide: high	
Phytoplankton Group	Numb.Org./L	Phytoplankton Group	Numb.Org./L
NOSTOCOPHYCEAE Filamentosas Oscillatoria sp. Oscillatoria sp. Oscillatoria sp.	1.172.500 33.500 50.250	NOSTOCOPHYCEAE Filamentosas BACILLARIOPHYCEAE ContentyCEAE	636.519
BACILLARIOPHYCEAE Chentricae Cheetoceros sp. Cyclotella sp Skeletonema costatum. Leptocylindrus danicus Entocylindrus minimus Whizosolenia delicatula.	167.500 167.500 167.000 67.000 33.500 33.500	Lenurn dee Chaetoceros affinis Chaetoceros simplex Uyclotella sp Uyclotella sp Uyclotella sp Uyclotella dell catula Rhizosolenia stolterrothi Khizosolenia stolterrothi Steletonema costatum.	33.501 134.004 67.002 134.004 33.501 33.501 33.501 33.501
Pennatae Cocconeis sp. Nitzschia closterium. Nitzschia sigma. Nitzschia longissima.	16.750 653.250 50.550 100.500 16.750	Ni tzschia longissima. NT tzschia closterium. NI tzschia seriata. PRASINOPHYCEAE	67.002 301.509 100.503
<u>Synedra</u> 5p PRASINOPHYCEAE Kephyrion sp	16.750 16.750 117.250	Pyramimonas sp <u>tetraseinis</u> sp EUGLENOPHYCEAE <u>Eutreptia</u> sp	33.501 2.043.561 67.002
EUGLEWOPHYCEAE Eutreptia sp Eutreptiella marina	50 250 16.750	CRYPTOPHYCEAE Cryptomonas SP1 Cryptomonas SP2	67,002 100,503
Prorocentrum balticum. Protopericinium trochoideum. Prorocentrum trisstinum. Protopericinum cf. steinii Protopericinum sp. Uxytoxum retroulatum.	201.000 117.250 167.500 16.750 351.750 351.750 351.750		67,002 67,002 770.523 368.511 670.020
UXY FLOXUM SCEPERTUM. CRY PTOPHYCE AE Cryptomionas sp: Cryptomionas sp2	16.750 16.750 16.750 16.750	Protoperidinium sp. Protoperidinium sp2 Total:	100.503 33.501 5.963.178
	0. 6 CC . 0. 0		

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Same and

Table

Table

J/ . Dro. dmuN	1.507.545 33.501 67.002 67.002 33.501 30.502 33.501 30.502 33.501 30.502
Phytoplankton Population Countinng Station 3 - Surface Date: 8th/June/1992 - 09:20 hs Tide: high Phytoplankton Group	NOSTOCOPHYCERE FITamen tosas 0scillatoria spi cocillatoria spi cocillatoria contratua nitzescia spi nitzescia spi nitzescia spi corrophycea c
Таріе	
עראי, סבק. / ג	58.853 2.2.334 44.668 11.167 11.167 11.167 11.167 11.167 11.167 11.167 22.334 11.167 11.167 22.334 22.334 11.167 11.167 33.501 11.167 33.501 11.167 11.167 11.167 11.167 22.334 23.507 11.167 23.505 11.167 23.505 11.167 23.505 11.167 23.505 11.167 23.505 11.167 23.505 23.505 11.167 23.555 23.505 11.167 23.555 23.557 25.555 25.555 25.555 25.555 25.555 25.555 25.5555 25.5555 25.5555 25.5555 25.5555 25.5555 25.5555 25.5555 25.5555 25.5555 25.5555 25.55555 25.55555 25.55555555
Phytoplankton Population Countinng Station 3 - 5m Date: 8th\June\1992 - 09:20 hs Tide: high Phytoplankton Group	NOSTODOPHYCEAE Filamentosas Secillatoria sp. Socillatoria sp. Consectors danicus. Consectors danicus. Consectors danicus. Consectors danicus. Consectors danicus. Consectors danicus. Consection and cus. Consection and cus. Overclenia scolenia scolenia scolenia. Nitzschia jorenzian var. subtills. Nitzschia spinges. Nitzschia spinges. Nitzschia spinges. Nitzschia spinges. Nitzschia spinges. Stattum. Nitzschia spinges. Nitzschia spinges. PRASINOPHYCEAE Prorocentrum balticum. PRASINOPHYCEAE Prorocentrum balticum. PRASINOPHYCEAE Prorocentrum balticum. PRASINOPHYCEAE Prorocentrum balticum. Prorocentru

APP 7-37

Phytoplankton Population Countinng Station 2 - 5m Date: 8th/June/1992 - 10:00 hs Tide: high

Phytoplankton Group

Numb.Org./L

NOS TOCOPHY CEAE		
Filamen tosas <u>0scil</u>	oscillatoria limetica	214.400
BACILLARIOPHYCEAE		
	Chaetoceros sp	10.050
	na Na	6.700
	Guinardia flaccida	13.400
	ເຂ	3.350
	Leptocylindrus danicus	3.350
	Leptocylindrus minimus	6.700
	inalassiosira sp	3, 350
	Rhizosolenia delicatula	6.700
	Skeletonema costatum	16.750
	Rhizosolenia setigera	3.350
Pennatae	a contraction of the second	
	Cocconeis sp	3.350
-	Witzschia longissima	23.450
	Nitzs chia closterium	144.050
	Nitzschia lorenziana var. subtilis	3.350
	Nitzschia seriata	30.150
		6,700
PRASINOPHYCEAE		
	Tetraselmis sp	56.950
	Pyramimonas sp	6.700
CHRYSOPHYCEAE		
	Kephyrion sp	23.450

DDACTN (DUVICAE	Syneara Sp	0./00
	Tetraselmis sp	56.950
•	Pyramimonas sp	6.700
CHRY SOPHY CEAE		
	<u>Kephyri on</u> sp	23.450
CRYPTOPHYCEAE		
	Cryptomonas sp,	33.500
	Lryptomonas sp	10.050
DINOPHYCEAE		
	Gymnodíníum sp	3.350
	<u>Oxytoxum re</u> ticulatum	6.700
	Oxy toxum sp	3.350
	Protoperidinium trocholdeum	50.250
	Protoperidinium sp	20.100
	Prorocentrum triestinum	3.350
	Prorocentrum micans	3.350
	Prorocentrum balticum.	50.250
	Prorocentrum compressum	3.350
FUGI FROPHACE &F		
	Eutreotia sp	3,350
	Total	002 777

Phytoplankton Population Countinng

Station 2 ~ Surface Date: 8th/June/1992 - 10:00 hs Tide: high Phytoplankton Group

Numb.Org./L

NOS TO COPHY CEAE

Filamentosas Oscillatoria limmetica..... BACILLARIOPHYCEAE

207.700

Centricae Biddulphia mobiliensis..... Chaetoceros danicus..... Ovclotella sp...... Cerataulina bergonii......

20.100 26.800 6.700 6.700 6.700 6.700 6.700 6.700 6.700 6.700 Leptocylindrus minimus. Rnizosolenia setigera.... Rnizosolenia stolterfothii..... Leptocylindrus danicus..... fragilissima. Rhizosolenia fragilissis Rhizosolenia delicatula.

Pennatae

13.400 140.700 13.400 6.700 ⁽221.100 6, 700 Nitzschia longissima. Nitzschia seriata..... Kephyrion sp Nitzschia closterium Pyramimonas sp Tetraselmis sp **PRASINOPHYCEAE** CHRYSOPHYCEAE

6.700 46.900 93.800 6.700 Protoperidinium sp2 Protoperidinium sp₁ Prorocentrum balticum.... Gymnodinium sp

DINOPHYCEAE

CF/ . 400 Total:....

6.700

Oxytoxum reticulatum.....

3.350 777.200

Total:.....

Table

Station 1 - 5m Date: 8th/June/1992 - 11:05 hs Tide: high

Phytoplankton Group

Numb.Org./L

	Dinophysis acuminata	Uxytoxum sp
DINOPHYCEAE		

	Dinophysis acuminata	3, 350
	Oxytoxum sp	3.350
	E	16.750
	Prorocentrum micans	3.350
	Prorocentrum rostratum.	3,350
	Protoperiainium cf. Steinii.	3, 350
	Protopericinium trochoideum	6.700
	Protopericinium sp.	6.700
		0.05°)
DEL ACEL ADAS		

SILICOFLAGELADOS

773.850 Total:....

6.700

Dictyocha fibula.....

Table

· ·	•	Numb.Org./L		2 36A	16.750			167.5 2000 - 2000	3.350	3.350	30,400	3.350	77 050	20,100	3.350	46,500	46.900		عر	3 350	2	3.350	10.050	3.350	33 500	10.050	43.550	3.350		6.700	
Phytoplankton Population Countinng Station 1 - 5m	sth/J high	Phytoplankton Group	Oscillatoria limnetica BACILLARIOPHYCEAE	ventricae Bacteriastrum hvalinum	e la	Cerataulina bergonii	These foreares some second	Chaetoceros curvisetus	Chae toceros decipiens.	ыİ	4-1	Hemiaulus nauckii. Hemiaulus sinansis		Leptocylindrus minimus	Knizosolenja alata Rhizheolania Aaltzatula			lest	os tatum votici s	ra subti		Amphora marina	As ternone (la japonica	P	чю	Iongissima	Nitzschia pungens	Pleurosigne normanii	1:	inglassionema nitzschioides	

Table

Phytoplankton Population Countinng

Station 1 - Surface Date: 8th/June/1992 - 11:05 hs Tide: high

Phytoplankton Group

Numb.Org./L

	(Cianofíceas)	
-	NOSTOCOPHYCEAE	

87,100

Filamentocas Filamentosas Borrianonuucor (n. 1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	BALILLAKIUPATLAL (Ulatomaceas) Centricae Biddulphia mobiliensis	Ueratauiina bergonii		Chaetoceros danicus Unaetoceros lorenzianus	
--	---	----------------------	--	--	--

APP

-40 7

6.700 6.700 6.700 6.700 6.700 133.500 733.700 133.400 133.400

CHLOROPHYCEAE Flageladas Chlamvcomonas sp

6.700 13.400 964.000

Total:.....

á.700

Real Property

APPENDIX 7. 1-3

PHYTOPLANKTON COMMUNITY

TABLE APP.7.1-3

Results of classification and quantification of phytoplankton samples collected during second phase simultaneous survey.

(November / 1992)

Station 1 - Surface Date: 10th \ november\1992 - 08:30 hs Tide: 10w

Tide: low Phytoplankton Group Numb.Org./L

NOS TOCOPHYCE AE

1.675	1.557.750	8.375		1.675 21.775 1.675	1,675	050 96	30,030 18,425	23.450 5.025 18.425 1.675
Filamentosas Trichodesmium sp	Não filamentosas Synechocystis sp	PRASINOPHYCE AE Pyramimonas sp	BACILLARIOPHYCEAE Pennatae	Navicula sp Nitzschia closterium. Svnedra sp	Centricae Thalassiosira sp	DINOPHYCEAE	Prorocentrum Daliticum	Protoperidinium trochoideum Protoperidinium sp ₁ Protoperidinium sp ₃

Phytoplankton Population Countinng

Table

Station 1 - 5m Date: 10th \november\1992 - 08:30 hs Tide: 10v

Phytoplankton Group	Numb.Org./L
NOS TOCOPHY CEAE	
Filàmentosas Oscillatoria sp.	1.116
Não filamentosas Synechocystis sp	2.036.750
BACILLARIOPHYCEAE	
Centricae	
Rhizosolenia stolterfothii Leptocylindrus danicus	1.116
Chae to ceros peruvianus	1.116
Pennatae Não identificados Nitzschia closterium. <u>Nitzschia longissima</u>	1.116 1.116 1.116
SILICOFLAGELADOS	
Dictyocha fibula	1.116
PRAS INOPHYCEAE	
Pyramiconas sp	7.812
DINOPHYCEAE	
	1_116
	29.016
	4.464
	14.508
	2.232
Protoperidinium spj	4.464
	1 116
CRYPTOPHYCEAE	
	3.348
Cryptomonas sp2	1.116

2.104.870

Total:....

1.698.450

Total:....

Station 2 - Surface Date: 10th \ november \ 1992 - 10:00 hs Tide: 10w

Phytoplankton Group TOCOPHYCEAE

6.566.196 201.006 1.507.545 6.968.208	234.507	100.503 100.503 636.519	502.515 871.026		33.501 33.501
NOSTOCOPHYCEAE Filamentosas Oscillatoria sp. Oscillatoria sp. Não filamentosas Symechocystis sp	BACTLLARIOPHYCEAE Centricae Skeletonema costatum Thalassiosira sp	EUGLENOPHYCEAE Eutreptia lanowi Eutreptia sp Eutreptialla marina	PRASINOPHYCEAE Pyramimonas sp Tetraselmis sp	CRYPTOPHYCEAE Cryptomonas sp ₁	DINOPHYCEAE Prorocentrum balticum Protoperidinium sp ₁

Table

Phytoplankton Population Countinng

	Numb.Org./L
\ 1992 - 10:00 hs	
- 5m 10th /november / 19 low	dino.
Station 2 - 5m Date: 10th Tide: 10w	Phytoplankton Group

NOS TOCOPHY CE AE	
Filamentosas Oscillatornia limmetica	1.356.750
Oscillatoria sp. Oscillatoria sp.	67,000 402,000
Não filamentosas Synechocystis sp	4.438.750
BACILLAPIOPHYCEAE	
Centricae Cyclotella sp	16.750 33.500
PRASINOPHYCEAE Pyramimonas sp Tetraselmis sp	100.500 83.750
CRYSOPHYCEAE	
<u>Kephyrion</u> sp	33,500
EUGLENOPHY CEAE	
Eutreptia Ianowi	16.750 83.750
DINOPHYCEAE	
Protoperidinium trochoideum	33.500
CRYP TOPHY CEAE	
Cryptomonas sp1	1.055.250

7.721.750 Total:....

20.258.105

Total:....

APP 7-43

Phytoplankton Population Countinng

Numb.Org./L Station 3 + Surface Date: 10th \ november \ 1992 - 11:00 hs Tide: 10w

Phytoplankton Group

NOS TOCOPHYCEAE

I

8.710.260 301.509 1.909.557	11.926.356	9.246.276 268.008	904,527 3.953.118	435.513 100.503 569.517	201.006	100.503 100.503 33,501	301.509 33.501 263.008	6.164.184 33.501
Filamen tosas Oscillatoria limmetica Oscillatoria sp ₁	Não filamentosas <u>Synechocystis</u> Sp	SAULLARIOPHICEAE Centricae Thalassiosira spontae. Skeletonema costatum	PPASINOPHYCEAE <u>Pyramimonas</u> so Tetraselmis sp	EUGLENOPHYCEAE Eutreptia lanowi Eutreptia sp Eutreptiala	DINOPHYCEAE Oxytoxum reticulatum	Prorocentrum balticum Prorocentrum micans Protoperidinium divergens	Protoperidinium trochoideum Protoperidinium sp ₁ Protoperidinium sp ₂	CRYPTOPHYCEAE Cryptomonas sp ₁ Cryptomonas sp ₂

Table

Phytoplankton Population Countinng

Station 3 - 5m Date: 10th \ november \ 1992 - 11:00 hs Tide: 10w	
Phytoplankton Group	Numb. Org. /L
NOS TOCOPHY CEAE	
	4.824.144
	938,028
Não filamentosas Synechocystis sp	5.795.673
BACILLARIOPHYCEAE	•
Centricae foscrinodiscus radiatus	33.501
Skeletonema costatum	167.505
Thalassiosira sp	301,509
Pennatae	
<u>Synedra</u> sp	33.501
EUGLENOPHYCEAE Eutreptiella marina	100.503
	·
Pyramimonas sp	167.505
Tetraselmis sp	33.501
1	33 501
Kepnyrion sp	
DINOPHYCEAE	ī
sp,	33.501
Protoperidinium trochoideum	33.501
CRYPTOPHYCEAE	
	1.005.030
Cryptomonas sp ₂	33,501
	200 203 CL
	4

10 m

45.561.360

Total:....

a mile

Phytoplankton Population Countinng

Station 4 - Surface Date: 10th / november / 1992 - 11:00 hs Tide: 10w

Numb.Org./L Phytoplankton Group

NOSTOCOPHYCEAE		
Filamentosas 6scillatoria <u>lia</u> metica	8.040.240	
Oscillatoria sp.	201.006	
	938,028	
Não filamentosas		
Synechocystis sp	8.408.751	
BACILLARIOPHY CEAE		
Cen tri cae		
Leptocylindrus minimus	33.501	
Skeletonema costatum	167.505	
Thalassiosira sp	2.814.084	
PRASINOPHYCERE		
Pyramimonas sp	1.474.044	
Tetraselmis sp	5.594.667	
EUGLENOPHYCEAE		
Eutreptia lanowi	167,505	
Eutreptiella marina	1.239.537	
Eutreptia sp	134,004	
DINOPHYCEAE		
Oxytoxum reticulatum	201,006	
Prorocentrum balticum	33.501	
Prorocentrum micans	100.503	
Protoperidinium trochoideum	100.503	
Protoperidinium sp2	234.507	
CRYPTOPHYCEAE		
Cryptomonas spi	5.460.663	
Cryptomonas sp2	33.501	

Table

Phytoplankton Population Countinng

Station 4 - 3m Date: 10th \ november \ 1992 - 11:00 hs Tide: 10w

Numb.Org./L Phytoplankton Group

NOS TOCOPHYCE AE

5.695.170 100.503 1.507.545	134.004 368.511	33.501 67.002 134.004	201.006 603.018 201.006	1.909.557 33.501	33,501 33,501 134,004 33,501
	SACTLLARIOPHYCEAE Centricae Skeletonema costatum Thalassiosire sp	EUGLENOPHYCEAE Eutreptia lanowi Eutreptia sp Eutreptiella marina	PRASINOPHYCEAE <u>Pyramimonas</u> sp	CAYPTOPHYCEAE Cryptomonas sp ₁ Cryptomonas sp ₂ DINOPHYCEAE	Protoperidinium trochoideum Protoperidinium trochoideum Protoperidinium sp ₂

Phytoplankton Population Countinng

Table

Numb.Org./L Station 5 - Surface Date: 10th \november\1992 - 11:45 hs Tide: 104

Phytoplankton Group

				1				
	9.045.270 234.507 1.105.533	10.418,811	33.501 33.501 234.507	33.501 33.501 368.511	435.513 804.024	301,509	33.501 67.002 167.505 234.507 33.501 33.501	100.503 3.852.615 134.004
NOS TOCOPHYCEAE	Filamentosas <u>Oscillatoria limmetica</u>	Não filamentosas <u>Synechocystis</u> sp	BACILLARIOPHYCEAE Centricae <u>Cyclotella</u> sp	EUGLENOPHYCEAE Eutreptia lanowi Eutreptia sp Eutreptiella marina	PRASINOPHYCEAE Pyramimonas sp Tetraselmis sp	CHLOROPHYCEAE Chlamydomonas sp	Prorocentrum balticum. Prorocentrum triestinum. Protoperidinium trochoideum. Protoperidinium sp Protoperidinium sp2 Protoperidinium sp2	Oxy toxum reticulatum CRYPTOPHY CEAE Cryptomonas spl

Station 5 - 5m Date: 10th / november / 1992 - 11:45 hs Tide: 10w Phytoplankton Population Countinng Phytoplankton Group

Numb.Org./L

NOS TO COPHY CEAE	
Filamentosas Oscillatoria limmetica Oscillatoria sp. Oscillatoria sp.	8.710.260 33.501 1.775.553
Não filamentosas Synechocystis sp	17.822.532
BACTLLARIOPHYCEAE Centricae Skeletonema costatum	167.505
Pennatae <u>Cocconeis</u> sp <u>Nitzschia closterium</u>	33,501 33,501
EUGLENOPHYCEAE Eutreptiella marina	134,004
<u>PRASINOPHYCEAE</u> <u>Pyramimonas</u> sp Tetraselmis sp	33.501 67_002
	1,440,543
DINOPHYCEAE Oxytoxum reticulatum Protoperidinium trochoideum Protoperidinium SP,	33.501 33.501 201.006
CHLOROPHYCEAE Chlamydomonas sp	234.507

30.787.419

Total:.....

Phytoplankton Population Countinng

Table

Phytoplankton Population Countinng

Station 6 - 5m Date: 10th / november / 1992 - 08:10 hs Tide: 10w

Numb.Org./L Phytoplankton Group

NOS TOCOPHY CEAE	
	8.509.254 52.501
	33, 301
Oscillatoria sp2	2.278.068
Não filamentosas Synechocystis sp	8.475.753
BACILLARIOPHYCEAE	
Centricae Phaetoreone deriniene	33 501
Leptocylindrus danicus	33,501
Skeletonema costatum	301,509
Thalassiosira sp	134.004
EUGLENOPHYCEAE Eutreptiella marina	301.509
CHLOROPHY CE AE	
Chlamydomonas sp	703.521
PRAS INOPHY CEAE	
Pyramimonas sp Tetreselmis sp	134,004 435,513
CRY PT OPHY CEAE	
Cryp tomon as	703.521
Cryptomonas sp2	33,501
DINOPHY CEAE	
Oxy toxum scep trum	67.002
Oxytoxum reticulatum	67.002
Oxytoxum sp	33.501
Prorocentrum micans	100.503
Protoperidinium Sp1	402.012
	67,002

2. 1. 2 2.

station 6 - Surface Date: 10th \november \ 1992 - 08:10 hs Tide: 10w	
Phytoplankton Group	Numb.Org./L
NOS TOCOPHY CEAE	
Filamentosas Oscillatoria limmetica	15.466.295
<u>Oscillatoria</u> sp ₁	55.835
<u>Oscillatoria</u> sp ₂	167.505
Não filamentosas Synechocystis sp	10.441,145
BACILLARIOPHYCEAE	
Centricae Skeletonema costatum Thalassiosira sp	502.515 2.735.915
EUGLENOPHY CE AE	
Eutreptia lanowi	446.680 223.340
Eutreptiella marina	1.507.545
PRAS INOPHY CEAE	
	670.020 35 340 000
DINOPHYCE AF	
Oxy toxum reticulatum	725.855
Protoperidinium trochoideum	1.005.030
Protoperidinium sp2	55,835
CRYPTOPHYCEAE	
<u>Cryptomonas</u> sp ₁	3.852.615
Total:	63.205.220

APP 7-47

Phytoplankton Population Countinng

Station 6 - 5m Date: 10th \ november \ 1992 - 14:30 hs Tide: 10w

Tide: Iow Phytoplankton Group Numb.Org./L

NOSTOCOPHYCEAE	
Filamentosas Oscillatoria limmetica Oscillatoria sp. <u>Oscillatoria</u> sp.	7.370.220 33.501 1.541.046
Não filamentosas Synechocystis sp	3.752.112
BACILLARIOPHYCEAE Centricae Skeletonema <u>costatum</u> Thalassiosira sp	268.008 703.521
EUGLENOPHYCEAE Eutreptiella marina Eutreptia sp	402.012 33.501
PRASINOPHYCEAE Pryanimonas sp	33.501 770.523
CHLOROPHYCEAE Chlamydomonas sp	368.511
CRYPTOPHYCEAE Cryptomonas spj	1.239.537
DINOPHYCEAE Oxytoxum reticulatum. Protoperidinium trochoideum Protoperidinium sp ₁ Protoperidinium sp ₂	100,503 33.501 134,004 100,503 67,002

Table

Phytoplankton Population Countinng

Station 7 - Surface Date: 10th \ november \ 1992 - 09:50 hs Tide: 10w

uate: Luth / november / 1992 - 09:00 hs Tide: low Numb.Org./L Phytoplankton Group

NOSTOCOPHY CEAE	
Filamentosas <u>Oscillatoria limmetica</u>	6.365.190 949.195
Não filamentosas Synechocystis sp	13,958,750
CHRYSOPHYCEAE Kephyrion sp	55.835
BACILLARIOPHYCEAE Centricae Skeletonema costatum. Thalassiosira sp	111.670 279.175
PRASINOPHYCEAE Tetraselmis sp Pyramtmonas sp	9.882.795 614.185
EUGLEN OPHYCEAE Eutreptia lanowi Eutreptia sp	4.690.140 1.005.030
Eutreptiella marina. CRYPTOPHYCEAE	11.111.165
Cryptomonas sp ₁	3.629.275 111.670
DINOPHYCEAE	
<u>0xytoxum reticulatum</u> Protoperidinium trochoideum	111.670 335.010
Protoperidinium cf. steinii Protoperidinium sp.	55.835 1.228.370
5	1.451.710
-, -,	167,505 614,185
Prorocentrum triestinum	55, 835

.

16.951.506

Total:....

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...

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Table

R.

Station 7 - 3m Date: 10th / november / 1992 - 09:50 hs Tide: 10w

Phytoplankton Group

Numb.Org./L

NOS TOCOPHY CEAE

Filamentosas Filamentosas <u>Oscillatoria</u> sp. <u>Oscillatoria</u> sp. Mão filamentosas <u>Synechocystis</u> sp. <u>SACILLARIOPHYCEAE</u> Centricae Leptocylindrus danicus <u>Skeletonema Costatum</u> Thalassiosira sp.	5.092.152 33.501 1.305.539 11.068.831 33.501 34.004
EUGLENOPHYCEAE Eutreptia lanowi. Eutreptiella marina	234_507 3.474.044
<u>PRASINOPHYCEAE</u> <u>Pyramimonas</u> sp <u>Tetraselmis</u> sp	201.006 368.511
CRYPTOPHYCEAE Cryptomonas sp1 Cryptomonas sp2	770.523 201.006
DINOPHYCEAE Oxy toxum reticulatum	201.006
Oxytoxum sp Prorocentrum balticum. Prorocentrum micans.	167,505 33,501 134,004 335,010
Protoperidinium sp	635.519 134.004

Table

Phytoplankton Population Countinng

Station 7 - 3m Date: 10th \november\1992 - 16:50 hs Tide: 104

Phytoplankton Group

Numb.Org./L

		l
	·	
NOS TOCOPHYCE AE		
Filamentosas Oscillatoria limmetica	4,790,643	
Oscillatoria sp2	2.110.563	
Não filamentosas Svnechocvstis SD	4.656.639	
Centricae Centricae Skelatonema costatum	301.509	
Thalassiosira sp	100.503	
EUGLENOPHYCEAE	268-008	
Eutreptiella marina.	1.105.533	
PRASINOPHYCEAE		
Pyramimonas sp	335.010	
Tetraselmis sp	167.505	
CRYPTOPHYCEAE		
Cryptomonas sp ₁	268,008	
DIMOPHYCEAE		

67.002 134.004 57.002 33.501 201.006 201.006 33.501 14.941.446 Prorocentrum micans. Prorocentrum <u>triestinum</u> Protoperidinium cf. <u>steinii</u> Protoperidinium sp₁ Protoperidinium sp₂ Protoperidinium sp₃

Prorocentrum balticum.....

Total:.....

22.713.678 I

. Total:....

Phytoplankton Population Countinng

	Numb.Org./L	1.451.710 111.670 3.964.285 27.024.140
Station 8 - 2m Date: 10th \november \ 1992 - 11:00 hs Tide: 10w	Phytoplankton Group	<u>NOS TOCOPHYCE AE</u> Filamentosas Oscillatoria limmetica. <u>Oscillatoria</u> sp _i Não filamentosas Symechocystis sp

1.451.710 111.670 3.964.285	27.024.140	55.655 1.116.700 3.070.925	502.515 335.010	12.953.720 837.525	55.835 111.670 55.835 279.175 1.116.700 55.335	53,099,085
Filamentosas Oscillatoria Iimmetica <u>Oscillatoria</u> sp ₂	<u>Synechocystis</u> sp <u>BACILLARIOPHYCEAE</u> Centricae	EUGLENOPHYCEAE EUGLENOPHYCEAE Eutreptia lanowi	PRASINOPHYCEAE Pramimonas sp <u>Fetraselmis</u> sp	CKYPTOPHYCEAE Cryptomonas sp ₁ Cryptomonas sp ₂ DINOPHYCEAE	Oxytoxum reticulatum	Total:

	hs	Numb.Org./L		737.022 3.383.601	12,495,873		60,0014		2.981.589 167.505	5.996.679		1.407.042 502.515		14.539.434 1.440.543		268.008 301.509	268.008	1 005 030	234.507	33,501	46.700.394	
• •	Station 8 - Surface Date: 10th / november / 1992 - 11:00 h Tide: 10w	Phytoplankton Group	NOSTOCDPHY CEAE	Filamentosas Oscillatoria limmetica <u>Uscillatoria</u> ap ₂	Não filamentosas <u>Synechocystis</u> sp	BACILLARIOPHYCEAE Centricae	Thalassiosira sp	EUGLENOPHY CEAE	Eutreptia lanowi Eutreptia sp	a marrina	PRAS INOPHY CEAE	Pyramimonas sp Tetraselmis sp	CRYPTOPHYCEAE	Cryptomonas sp ₁	DINOPHYCE AE	Oxytoxum reticulatum	E	Protoneridinium trocholdeum		::	Total:	

Table

Phytoplankton Population Countinng

Sec. 1

Phytoplankton Population Countinng

Station 8 - 2m Date: 10th \ november \ 1992 - 16:00 hs Tide: 10w Phytoplankton Group Numb.Org./L

NOS TOCOPHY CEAE	
Filamentosas <u>Oscillatoria limmetica</u> Oscillatoris en	1.273.038 5.102.655
Não filamentosas Synechocystis.sp	15.376.959
BACILLARIOPHYCEAE Centricae Skeletonema costatum Inalassiosira sp	100.503 569.517
EUGLENOPHYCEAE Eutreptia lanowi Eutreptia sp Eutreptiella marina	502.515 167.505 2.311.569
PRASIMOPHYCEAE Pyramimonas sp Tetraselmis sp	435.513 234.507
<u>CRYPTOPHYCEAE</u> <u>Cryptomonas</u> SP ₁ :	5.192.655 134.004
DINOPHYCEAE Oxytoxum meticulatum	234.507
Prorocentrum balficum. Prorocentrum micans.	33.501 33.501 33.501
Protoperidinium trochoideum. Protoperidinium sp ₁ Protoperidinium sp ₂	234_507 603.013 301.509 33_501

Table

Phytoplankton Population Countinng

 с.	Numb.Org./L
\ 1992 - 10:35 hs	
face 19 november 19	
9 - Surface 10th \ nov 10w	lytoplankton Group
Station 9 Date: Tide:	Phytoplank

NOS TOCOPHY CEAE	
Filamentosas Oscillatoria limnetica	1.474.044
0scillatoria sp ₁ 0scillatoria sp ₂	2.311.569
Não filamentosas <u>Synechocystis</u> sp	10.217.805
<u>BACILLARIOPHYCEAE</u> Centricae Thalassiosira sp	703.521
EUGLENOPHYCEAE	
Eutreptia lanowi	3.149.094
Eutreptia sp Eutreptiella marina	134.004 12.763.881
PRASINOPHYCEAE	
Pyramimonas sp	1.876.056 402.012
CHLOROPHY CEAE	
Flageladas Chl <u>arydomonas</u> sp	134.004
CRYPTOPHYCEAE	
Cryptomonas sp ₁	12.596.376 904.527
DINOPHYCEAE	
Prorocentrum balticum	201.006 502.515
	368.511 1.507.545
	368.511

49.648.482

Total:

32.964.934

Total:....

Numb.Org./L Station 9 - 2.5m Date: 10th / november / 1992 - 10:35 hs Tide: 104

Phytoplankton Group

1.608.048 100.503 4.391.146 10.921.326	33.501 33.501 33.501 53.519 33.501 2.512.575	. 67.002 . 335.010	. 4.221.126 . 268.308	33.501 67.002 33.501 201.006 33.501 301.509 67.002 26.465.790
MOSTOCOPHYCEAE Filamentosas Dacillatoria limmetica	BACILLARIOPHYCEAE Centricae Leptocylindrus miniaus. Thalassiosira sp EUGLENOPHYCEAE EUTreptia lanowi. Eutreptia sp Eutreptia sp Eutreptia sp	CHLOROPHYCEAE Flageladas Chlamydomonas sp PRASINOPHYCEAE Pyramimonas sp Tetraselmis sp	CRVPTOPHYCEAE Cryptomonas sp ₁ Cryptomonas sp ₂ DINOPHYCEAE	Oxytoxum reticulatum. Prorocentrum micans. Protoperidinium reconsideum. Protoperidinium sp. Protoperidinium sp. Total:

Phytoplankton Population Countinng

Station 10 - 5m Date: 10th / november / 1992 - 15:00 hs Tide: 10w

Phytoplankton Group	Numb. Org. /2
NOS TOCOPHY CEAE	
Filamentosas	
Oscillatoria limetica	4 757 142
<u>0scillatoria</u> sp ₂	770_523
Mão filamentosas	
Construction and	2 272 262

Mão filamentosas <u>Synechocystis</u> sp	8.578.268
BACILLARIOPHYCEAE Centricae Skeletonema costatum	402.012
Thelessiosire sp	33, 501
CHLOROPHYCEAE Flageladas Chlamydomonas sp	33.501
EUGLENOPHYCEAE Eutreptiella marina	134.004
CAYPTOPHYCEAE Cryptomonas Sp1	201,006
<u> OINOPHYCEAE</u> Oxytoxum retículatum	33,501
Prorocentrum micans	33.501
Protoperidinium trochoideum	33,501
Protoperidinium spj	234.507

15.644.967 I

Total:.....

Station 11 - Surface Date: 10th \ november \ 1992 - 09:00 hs Tide: 10w

Phytoplankton Group

Numb.Org./L

NOS TOCOPHY CEAE	
Filamentosas Oscillatoria limetica	14.405.430
<u>Oscillatoria</u> sp ₁	167.505 781.690
	20,603.115
BACILLARIOPHYCEAE	
Centricae Leptocylindrus danicus	111.670
Skeletonema costatum	111.670 1.005.030
EUGLENOPHYCEAE	
Eutreptia lanowi	111.670
Eutreptiella marina.	949. 195 4. 522. 635
CHLOROPHY CE AE	
Flageladas Chlamydomonas sp	837,525
PRASINOPHYCEAE	
Pyramimonas sp	335,010
Tetraselmis sp	725,855
CRY PTOPHY CEAE	
<u>Cryptomonas</u> sp ₁	3.405.935
DINOPHYCEAE	
Oxy toxum reticulatum	390,845
Prorocentrum balticum	725.855

Phytoplankton Population Countinng

Station 12 ~ Surface Date: 10th \november \ 1992 ~ 10:00 hs Tide: 10w

Phytoplankton Group

Numb.Org./L

NOS TOCOPHY CEAE	
Filamen tosas Oscillatoria limmetica. Oscillatoria sp Oscillatoria sp Trichodesmium sp Não filamentosas	18.392.049 201.006 703.521 33.501
	33.501 33.501 33.501 167.505 100.503
Eutreptia lanowi. Eutreptia sp	335.010 234.507 1.608.048
<u>CHLOROPHYCEAE</u> Flageladas <u>Chlamydomonas</u> sp	33,501
PRASINOPHYCEAE Pyramimonas sp Tetraselmis sp	569.517 2.613.078
CRYPTOPHYCEAE Cryptomonas sp ₁ Cryptomonas sp ₂ DINOPHYCEAE	7.772.232 67.002
Oxytoxum reticulatum Prorocentrum micans. Prorocentrum balticum. Protoperidinium trochoideum. Protoperidinium sp	268.008 368.511 167.505 100.503 1.373.541 1.373.541 469.014

50.016.993

Total:.....

Total:....

725.855 111.670 1.507.545 670.020 279.175 51.759.045 Prorocentrum balticum. Prorocentrum micans. Protoperidinium trochoideum..... Protoperidinium sp₁ Protoperidinium sp₂

APP 7-53

Station 12 - 5m Date: 10th \ november \ 1992 - 10:00 hs Tide: 10w

Phytoplankton Group

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3.718.611 636.519 3.048.691	837.525	234.507	33.501	33.501	100.503	33.501 167.505	8.877.765
MOSTOCOPHYCE AE Filamentosas Oscillatoria limmetica	<u>BACILLARIOPHYCEAE</u> Centricae Skeletonema costatum	CHLOROPHYCEAE Flageladas Chlamydomonas sp	EUGLENOPHYCEAE Eutreptia sp	PRASIMOPHYCEAE Tetraselmis sp	CRYPTOPHYCEAE Cryptomonas sp ₁	DIACPHYCEAE Protoperidinium trochoideum Protoperidinium sp ₁	Total:

Phytoplankton Population Countinng

Station 13 - Surface Date: 10th \ november \ 1992 - 20:00 hs Tide: 10w

Phytoplankton Group

Numb.Org./L

NOS TOCOPHY CEAE	
Filamentosas Oscillatoria limmetica	804.024
	100.503
	6.398.691
Não filamentosas <u>Synechocystis</u> sp	17.085.612
BACTLLARIOPHYCEAE	
Centricae Cvilotella en	33 601
	33, 501
- ds	201,006
EUGLENOPHYCEAE	
Eutreptiella marina	335.010
PRASINOPHYCEAE	-
Pyramimonas sp	770.523 201.006
Cryptomonas sp	7.772.232
Cryptomonas sp2	3.350.100
DINOPHYCEAE	·
Prorocentrum balticum	201.006
Prorocentrum micans	33,501
Prorocentrum triestinum	33,501
Prorocentrum sp	33,501
	100.503
Protoperidinium sp.	33.501

37 956 735

Total:....

Station 14 - Surface Date: 10th \ november \ 1992 - 10:40 hs Tide: 10w Date: Tide:

Numb.Org./L Phytoplankton Group

NOSTOCOPHY CEAE	

	limnetica
Filamentos as	Oscillatoria l

	Oscillatoria spi	<u>Oscillatoria</u> sp ₂		Synechocystis sp
	•	•		
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	<u> </u>	, U I	Não filamentosas	• • •
			4-	
			0	
			10	
			~	

10.999.495 167.505 1.005.030

22.110.660

0 - 1 - 2 - 0

BACILLARIOPHYCEAE	
Centri cae	
Leptocylindrus danicus	55.835
Leptocylindrus minimus	55.835
Thalassiosira sp	949,195
EUGLENOPHYCEAE	
Eutreptiella marina	111.670
PRAS INOPHY CEAE	
Pyramimonas sp	446,680
Tetraselmis sp	558, 350
CRYPTOPHYCEAE	
Cryp tomonas Sp.	6,979,375
Cryptomonas sp2	502.515
DINOPHYCEAE	

223.340	55.835	55.835	725.855	1.619.215	55.835	4.020.120	111.670	50,809,850
Oxytoxum reticulatum	Pronocentrum balticum	Prorocentrum micans	Promocentrum triestinum	Protoperidinium trochoideum	Protoperidinium cf. steinii	Protoperidinium sp.	Protoperidinium sp2	Total:

Phytoplankton Population Countinng

Station 14 - 3m Date: 10th \ november \ 1992 - 10:40 hs Tide: 10w

Phytoplankton Group

Numb.Org./L

	llatoria lim	llatoria sp ₁	llatoria sp	nodesmium sp
Filamentos as	Oscillat	0s cí 1 3	0s ci 11	Tricho

NOS TOCOPHY CEAE

limetica.....

9.983.298 67.002 1.909.557 33.501

17.588.025

Synechocystis sp

Não filamentosas

spg -----

33.501 234.507 1.675.050

33,501

Pennatae Cocconeis scutellum..... CHLOROPHY CEAE Flageladas

riagelatas Chlamydomonas sp	301.509
rkkolivurhillekle. Pyramimonas sp Tetraselmis sp	268.008 368.511
EUGLENOPHYCEAE	

Cryptomonas sp1 СРУР ТОРНУ СЕАЕ

6.700.200 469.014

33.501 100.503

Eutreptia lanowi. Eutreptiala marina.....

Oxytoxum reticulatum...... DINOPHYCEAE

33.501 134.004 167.505 737.022 1.675.050 1.675.050 42 928 282 Prorocentrum micans. Prorocentrum triestinum. Protoperidinium trochoideum. Protoperidinium sp₁ Tets:

Station 15 - Surface Date: 10th \ november \ 1992 - 10:30 hs Tide: 10w

Numb.org./L 4.221.126 33.501 268.008 Oscillatoria limetica. Oscillatoria sp₁ Oscillatoria sp₁ Phytoplankton Group Fi lamen tos as NOS TOCOPHYCEAE

Zde BLIDBLIDED	· · · · · · · · · · · · · · · · · · ·
Nao filamentosas Synechocystis sp	11.691.849
BACILLARIOPHYCEAE	
Centricae	
Cyclotella sp	33.501
Leptocy indrus danicus	33.501
Thalassiosira sp	536.016
EUGLENOPHYCEAE	
Eutreotia lanowi	67.002
Eutreptiella marina	67.002
PRAS I NOPHY CEAE	
Pyramimonas sp	134,004
CRYPTOPHYCEAE	·
Cryptomonas sp.	1.206.036
	234.507
DINOPHYCEAE	
	134.004
	33 501

	134.004	33,501	134.004	33.501	100.503
2	Prorocentrum balticum	Prorocentrum micans	Protoperidinium trochoideum	Protoperidinium sp	Protoperidinium sp2

18.961.566

Total:....

14.137.422

Total:....

Phytoplankton Population Countinng

Station 15 - 3m Date: 10th \ november \ 1992 - 10:30 hs Tide: 10w

Numb.Crg./L Phytoplankton Group

I

NOS TOCOPHY CEAE	
Filamentosas Oscillatoria limmetica	9.949.797
Oscillatoria sp.	100.503
<u>Oscillatoria</u> sp ²	335,010
Não filamentosas	
Synechocystis sp	100.503
BACILLARIOPHYCEAE	
Leptocylindrus danicus	33.501
SKeletonema costatum	2.013.078 201 006
CHLOROPHYCEAE	
Flageladas	
Ch lamy domonas sp	268,008
PRAS INOPHY CEAE	·
Tetraselmis sp	33, 501
CRY PTOPHY CEAE	
Cryptomonas spi	100.503
Cryptomonas sp2	67.002
DINOPHYCEAE	
Oxytoxum reticulatum	33.501
Oxy toxum sceptrum	33.501
Prorocentrum micans	33.501
Protoperidinium cf. steinii	
Protoperidinium sp ₁	100.503
EUGLENOPHYCEAE	
Eutreptia sp	100.503

7-56 лрр

蠹

Phytoplankton Population Countinng

Station 17 - Surface Date: 10th \ november \ 1992 - 09:00 hs Tide: 104

Phytoplankton Group

Numb.Org./L

NOSTOCOPHYCEAE	
rilamentosas Oscillatoria limetica	15.276.456
	306.036 1.206.036 33 501
Não filametosas	101.01
BALTII APTOPHYCEAE	240-121-01
Control to Control Con	
otocy lindrus	201.006
Leptocylindrus minimus	67.002 167 EAE
ra	603.018
CHLOROPHY CE AE	
Flageladas	
Chlamy domonas sp	67.002
PRASINOPHYCEAE	
Pyramimonas sp	368.511
Tetraselmis sp	4.891.146
EUGLENOPHY CEAE	
Eutreptia lanowi	67,002
g	636,519
Eutreptiella marina	2.445.573
CRYP TOPHY CEAE	
Cryptomonas sp ₁	3.283.098
Cryptomonas sp2	67.002

268.008 201.006 134.004 134.004 1.105.533 469.014 358.511 51.524.538

Tota1:....

Protoperidinium trochoideum..... Protoperidinium sp₁ Protoperidinium sp₂

Prorocentrum balticum. Prorocentrum micans. Prorocentrum Criestinum.

...............

Dxytoxum reticulatum.

DINOPHYCEAE

Numb.Org./L 134.000 16.750 33.500 16.750 67.000 16.750 83.750 318.250 268.000 485.750 16.750 16.750 67.000 16.917.819 4.422.000 234.500 33.500 10.686.819 Station 16 - Surface Date: 10th \november \ 1992 - 11:30 hs Tide: 10w Gymnodinium sp Prorocentrum sp Protoperidinium trachoideum Protoperidinium sp Protoperidinium sp2 Não filamentosas <u>Synechocystis</u> sp Pennatae <u>Cocconeis</u> sp Cyclotella sp Skeletonema costatum. Thalassiosira sp Pyramimonas sp Total..... Cryptomonas sp1 Phytoplankton Group Filamentosas BACILLARIOPHYCEAE Centri cae NOS TOCOPHY CEAE EUGLENOPHY CEAE PRAS INOPHYCEAE Tide: CRYP TOPHY CEAE DINOPHYCEAE

APP 7-57

Numb.Org./L Station 17 - 3.5m Date: 10th \ november \ 1992 - 09:00 hs Tide: 10w

Phytoplankton Group

NOS TOCOPHY CEAE

11.524.344 167.505 871.026 67.002	13.266.396 100.503 67.002 1.976.559 301.509	234.507 33.501	1.072.032	100.503 234.507	1,373.541 33.501	33.501 33.501 67.002 33.501 100.503 134.004 804.024 134.004 32.763.978
	<u>Synechocystis</u> sp <u>BACILLARIOPHYCEAE</u> Centricae Leptocylindrus danicus Leptocylindrus minimus Skeletonema <u>ostatum</u> Thalassiosira sp	EUGLENOPHYCEAE Eutreptiella marina. Eutreptia lanowi	CHLOROPHYCEAE Flageladas Chlamydomonas sp	PRASINOPHYCEAE Pyramimonas sp Tetraselmis sp CRYPTOPHYCEAE	Cryptomonas sp ₁ Cryptomonas sp ₂ DINOPHYCEAE	Oxy toxum reticulatum Oxy toxum sp

Phytoplankton Population Countinng

Station 18 - Surface Date: 10th \ november \ 1992 - 10:00 hs Tide: 10w

Phytoplankton Group

Numb.Org./L

NOS TOCOPHYCEAE

13.835.913 268.008 603.018 33.501	14.405.430	67.002	201.006 603.018	33.501
Filamen tosas Oscillatoria Itmmetica. Oscillatoria sp. Oscillatoria sp. Irrichodesmium sp.	Não filamentosas Synechocystis sp	BACILLARIOPHYCEAE Centricae Leptocylindrus minimus	Skeletonema costatum. Thalassiosira sp	Pennatae Navicula <u>lyra</u>

Pennatae <u>Navicula Iyra</u>	33.501
EUGLENOPHYCEAE Eutreptia sp Eutreptiella marina	201.006 1.340.040
PRASINOPHYCEAE Pramimonas sp <u>Tetraselmis</u> sp revornervore	335.010 636.519
Cryptomonas sp1	6.164.184 167.505
DI NOPHY CEAE	

Dxytoxum reticulatum..... rorocentrum micans

502.515 100.503 234.507 469.014 1.306.539 67.002 2.546.076 10.452.312 10.452.312

..................

rorocen trum

Total:.....

55.075.644

APPENDIX 7. 2-1

BENTHIC COMMUNITY

TABLE APP.7.2-1

Results of benthic community survey performed during first phase study in the bay.

(June / 1992)

APP 7 -59

Benthos community distribution Table

Table

Station: 3 Sampling date: 4th/June/1992

Numb.Org./Samp.

Organism	Numb.Org./Samp
ANNELEDA	
5.	
Seden tarria	124
MOLL USCA Gast transda	Ē
Calyptraeidae	
Calyptreea centralis	-
UIIVIdae Olivella defiorei	. 00
Bivalvia	,
Nuculidae	
Moestermant date	4
Ervilia nitens.	m
	,
Musculus lateralis	
Carditidae	
Larditamera floridana	m
Semelidae Anya aronalis	
	+ 1
CRUS TACEA	
Amphi poda	
Gamaridae	7
Uecapoda	
Pataemonjaae	-
Paouri dea.	ď
ECHINODERMATA	ı
Stelleroidea	
Ophiuroidea	
Ophiolepidide	
Ophioplocus januarii	-*
Amphiuridae Ophiactis sc	F ea
halochordata Prochéortem	·
	n

8 ŝ

Total:....

ACC294

ALC: NO

6 Star

Numb.Org./Samp. 196 **...** 2 2 ~ 305 2 ANNELIDA Polychaeta Sedentaria Serpulidae (sobreconchas mortas)..... Epi toniidae Epi tonium sp Calyptraeidae Crepidula sp (jovem)...... Gastropoda Trochidae Halistylus columna..... Veneridae Gouldia cerina. Mesodermatidae Ervilia nitens...... Carditidae Carditamera floridane..... Antozoa (coral)..... Glycymerididae <u>Glycymereis</u> sp (jovem)...... Total:..... Amphipoda Gararidae..... Condyl ocardiidae Americuna besnardi..... Olividae Olivella minuta..... Crassatellidae Crassinella martinicensis. Benthos community distribution Station: 2 Sampling date: 4th/June/1992 Bivalvia Organism CRUS TACEA CNIDARIA MOLLUSCA

Benthos community distribution Station: 4 Sampling date: 4th/June/1992

Organism

Numb.Org./Samp.

ANNEL I DA

Polychaeta

Errantia..... MOLLUSCA

Semelidae Bivalvia

Abra Aequalis (jovem).....

2

Total:....

m

Table

Benthos community distribution

Numb.Org./Samp. ф ф <u>MOLLUSCA</u> Gastropoda Columbellidae Parvanachis isabellei..... Antozoa (coral)..... Errantia..... Station: 5 Sampling date: 4th/June/1992 <u>ANNELIDA</u> Polychaeta ----tia. Organism CNIDARIA

Bivalvía Nuculidae Nucula puelcha..... Cras<u>satellidae</u> <u>Crassinella martinicensis</u>.....

Corbulidae Corbula caribaea Semelidae Abra aequalis :::::.....

CRUSTACEA

Amphipoda Gamaridae...... Os tracoda C1 adocopa........

ч

29

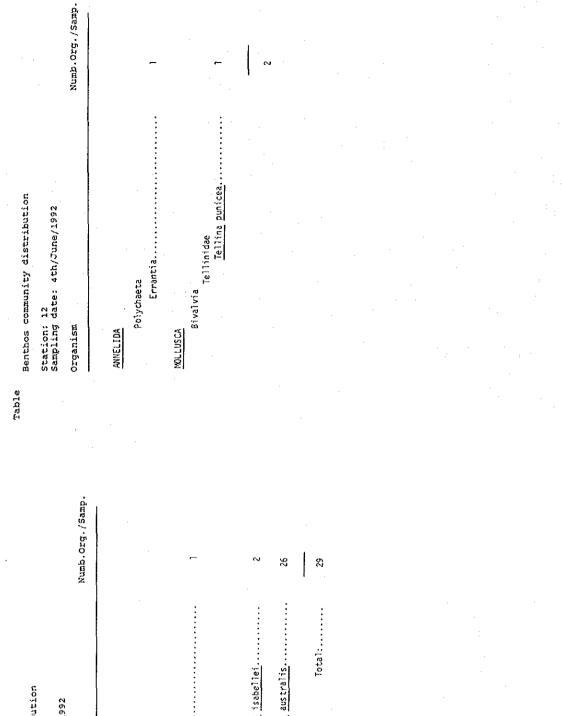
7-61 APP

Table	Benthos community distribution	Table	Benthos community distribution
	Station: 6 Sampling date: 4th/June/1992		Station: 7 Sampling date: 4th/June/1992
	Organism	Numb.Org./Samp.	Organism Numb.Org./Samp.
	AWELIDA		
	Polychaeta Errantia	54 17	
	WTTNCK		
	Bivalvie romeniidaa		
	corbula caribaea.	-	
	CRUSTACEA		
	Ampl		Obs: Organisms were not found in the sampling.
	Gamari dae		-
:	Total:	01 97	
		· ·	
			· · · · · · · · · · · · · · · · · · ·

APP 7-62

Numb.Org./Samp. 450 ရာ တ 454 Gastropoda Gastropoda Littoridina australis. Massariidae Massariidae Le capada Anomura Paguri dea...... Bivalvia Nuculidae <u>Nucula puelcha</u>...... Total:.... Isopoda Anthuridea..... Columbellidae Parvanachis isabellei..... Benthos community distribution Station: 9 Sampling date: 4th/June/1992 Organism CRUSTACEA MOLLUSCA ANNEL I DA Table Numb.Org./Samp. (9 (9 2.672 2.970 Total:.... Errantia..... Littoridina australis..... Benthos community distribution Station: 8
Sampling date: 4th/June/1992 Gas tropoda Hydrobiidae Polychaeta organism ANNELIDA MOLLUSCA Table

> 7-63 APP



Benthos community distribution

Table

Station: 11 Sampling date: 4th/June/1992

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ANNEL I DA

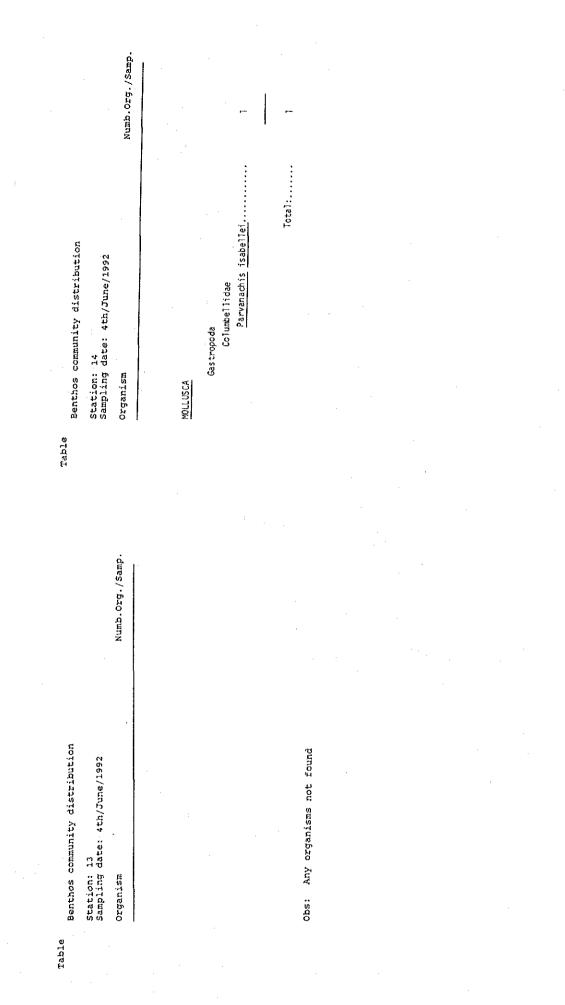
Polychaeta

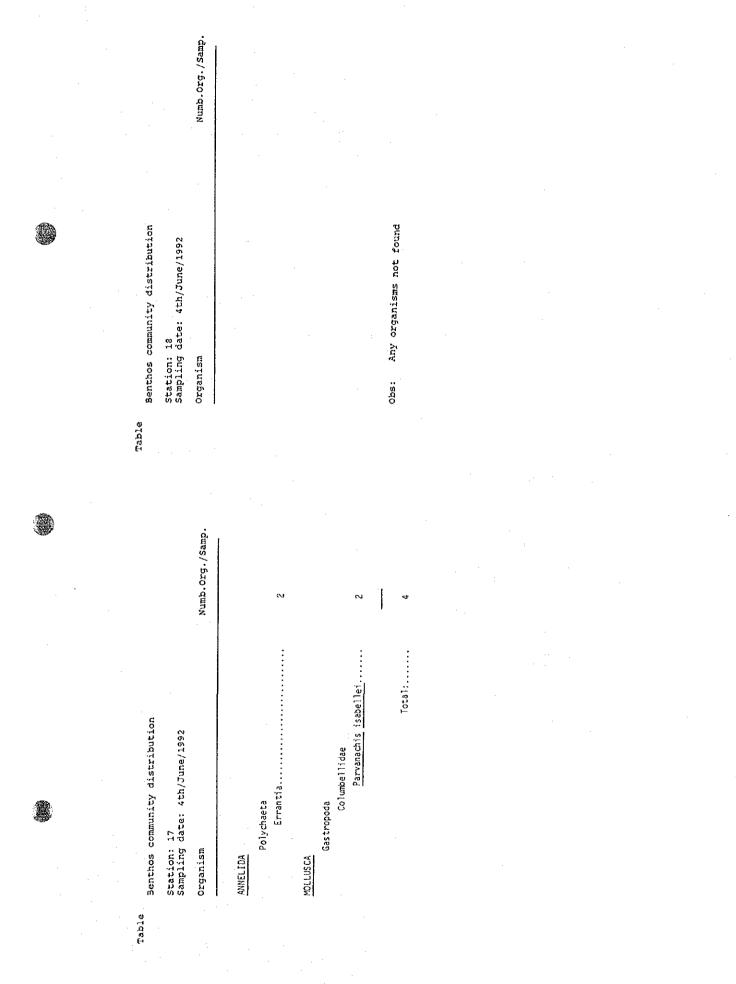
Errantia.....

Contraction of Contraction MOLLUSCA

				ž	
200dout spa	Columbellidae	Parvanachis isabellei	Hydrobiidae	Littoridina australis	

7-64 APP





APPENDIX 7. 2-2

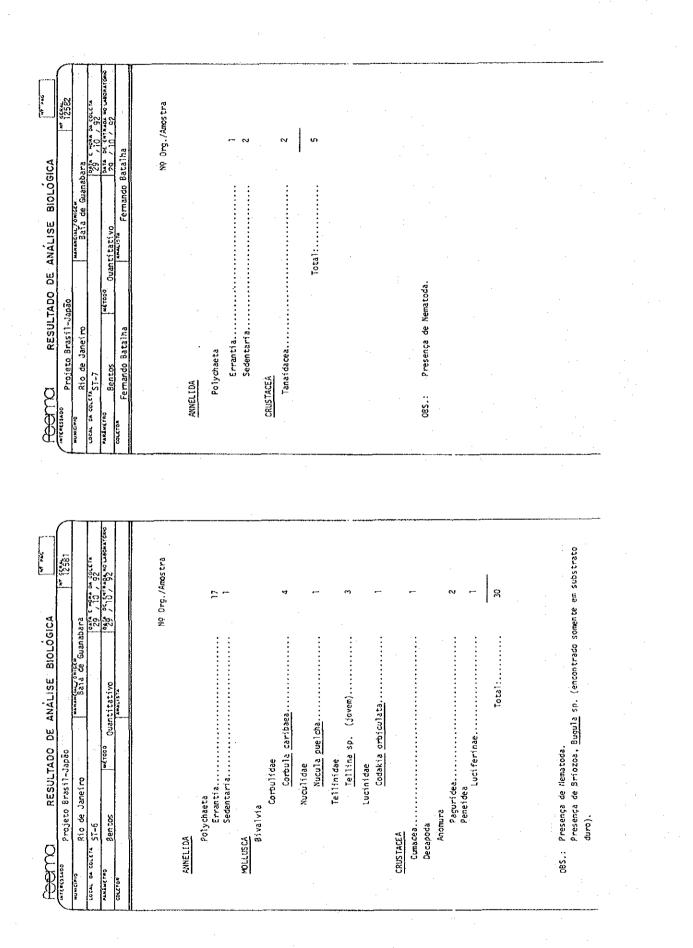
BENTHIC COMMUNITY

TABLE APP.7.2-2

Results of benthic community survey performed during second pase study in the bay.

(October / 1992)

Point RESULTADO DE ANÁLISE BIOLÓGICA Martenación Intretasaoo Projeto Brasil-Japão Intretasaoo Intretasaoo Projeto Brasil-Japão Intretasaoo Intretasaoo Projeto Brasil-Japão Intretasaoo Intretasaoo Projeto Brasil-Japão Intretasaoo Intretasaoo Projeto Brasil-Japão Intretasao Intretasaoo Projeto Brasil-Japão Intretasao Intretasao Baña de Ganabara Intretasao Interno Baña de Canabara Intretasao Interno Bantos Introto Ouantitativo Intretaso Interno Bentos Juantitativo Intretaso Interno Bentos Juantitativo Intretaso	(continuação)	X0 Org./Amostra Amphipoda	Isopoda	085.: Presença de Mematoda.		
FOTO RESULTADO DE ANÁLISE BIOLOGICA Martine minimizio Projeto Brasil-Japão minimizio municino Projeto Brasil-Japão minimizio municino Rio de Janeiro Baia de Guanabara uoden as conenas Si-2 Para as conena statuero Baia de Guanabara Para as conena contra Si-2 Para as conena contro Fernando Batalha Anaulata	NO Org./Amostra CMIDARIA	Anthozoa (coral)		011vella minuta	Condylocardildze Americuna bernardi	<u>Nucula</u> sp. (jovem)



шинисни, Онгеги Вата de Guanabara Элл с чона ол сости Олга ре ситара но часлатию Элл р с ситара но часлатию Presença de Briozoa. Bugula sp. (encontrado somente em substrato 5582 12582 274 4 NQ Grg./Amostra 447 2 m 216 3 10 Fernando Batalha RESULTADO DE ANÁLISE BIOLÓGICA Total:.... Branchios toma sp. Crassinella martinicensis..... Nucula puelcha..... Ophiactis sp. Codakia orbicúlata..... Brachyura......Brachyura. Paguri dea...... Ouantitativo Substrato constituido de conchas. (continuação) 085.: Presença de Nematoda. NC7000 Amphiuridae Projeto Brasil-Japão <u>CHORDATA</u> Cephalochordata Bran Crassatellidae Ophiuroidea Nuculidae Lucinidae Rio de Janeiro Fernando Batalha Anomura Decapoda ECHINODERMATA (ounp LOCAL ON COLETA ST-12 **Bentos** CRUS TACEA <u>Acro</u> PARANETRO UNICIPIO COLETOR NO LABORATÓRIO N 440 12582 NQ Org./Amostra 385 ŝ ដ Fermando Batalha RESULTADO DE ANÁLISE BIOLÓGICA Anthozoa (Coral)..... Anthozoa (Anēmona)...... Turbonilla interrupta..... Errantia Chaetopleura cf. asperrima..... Calyptraea centralis..... Caecum antillarum..... Sedentaria...... Abra lioica..... Sphenia antillensis..... Carditamera floridana..... Gouldia cerina..... Lima scabra..... Corbula lyoni wirooo Quanti tativo Ixxelista Corbula caribaea.... Pitar fulminatus..... Is chnoch i ton i dae Projeto Brasil-Japão Pyramidelìidae Calyptraeidae Corbulidae Cardi tidae Polyplacophora Veneridae Semelidae Caecidae Sio de Janeiro Fernando Batalha Limidae Polychaeta Gas tropoda Myidae Bivalvia 8en tos CNIDARIA LOCAL DA COLETST-12 ANNELIDA MOLLUSCA Rend PARAMETRO UNCIPIO COLUTOR

APP 7-71

NF PAG AC ARON Fernando Batalha RESULTADO DE ANÁLISE BIOLÓGICA маканстац / Омгеди Вата de Guanabara OBS.: Não foram encontrados organismos na amostra. Quantitativo LC TOOC Projeto Brasil-Japão Rio de Janeiro Fernando. Batalha Bentos" LOCAL DA COLETA ST+15 pano ARANETRO UNCIPLO COLETON 244 94 NP Org./Amostra co 0414 0C Fernando Batalha RESULTADO DE ANÁLISE BIOLÓGICA Baia de Guanabara Tanaidacea...... Littoridina australis.... Polychaeta Errentia...... Total:.... Quanti tati vo HC 1000 Projeto Brasil-Japão OBS.: Presenca de Nematoda. Hydrobiidae Río dé Janeiro Fernando Batalha Sentos Gas tropoda ST-13 ANNEL LOA CRUS TACEA MOLLUSCA Perso LOCAL ON COLETA OFT DELAN CHHC HHO COLET OR

DAN PAC 0474 06 CHTHADA 30 / 10 / 92 Fernando Batalha Bata de Guanabara Bata de Guanabara 30 c RESULTADO DE ANÁLISE BIOLÓGICA OBS.: Não foram encontrados organismos na amostra. <u>Quantitativo</u> #C1000 Projeto Brasil-Japão Rio de Janeiro Fernando Batalha Bentos. LOCAL ON COLETA Bend FERESSADO PARAMETRO ONICIPIO COLLTOR C LABORAL DRIG we had. 30 / 10 Fernando Batalha RESULTADO DE ANÁLISE BIOLÓGICA Baia de Guanabara OBS.: $N\overline{a}o$ foram encontrados organismos na emostra. Quantitativo ×11000 Projeto Srasil-Japão Rio de Janeiro Fernando Batalha Bentos 21-12 LOCAL DA COLETA ON TALAR UNICE OF COLCTOR

APPENDIX 7. 3-1

FOULING COMMUNITY

TABLE APP.7.3-1

Results of distribution of zoobenthic population obtained by fouling organisms survey performed during first phase study.

(June / 1992)

ZOOBENTHOS DISTRIBUTION IN THE GUANABARA BAY

STATION	1		}	2		1	3		i.	5			•	7	1	8
ORGANISHS	N.S	1.5	I N.S	: 8.1	: I.S	: X.S	: X.I	N.S	1.8.1	N.S	H.S	I.S	1 N.S	: N.I	N.S	: M.i
CNIDARIA HIDROZOA CAMPAHULARIA SP.	; 		 ; ; ; ;	 x	; ; ; ; ;	 X	. . X	 X	 X	 		; ; ;		: : : :	; ; ; ; ; ; ;	
ANTHOZOA ACTINIARIA	2	1	; ;	 18	: : : 6	: : : 7	1 1 1 3	1 1 1 3	1 1 1 4	: : : 2		1 1 1	 44	: : : 15	: : : 3	: 1 122
ASQUELMINTES NEMATODA	1 1 80	1 53	1 1 1 1957	: 1 1 80	: : : 29		; 1 ; 1	1 1 1 1 5			5	 	: : : 81	1 • •	:	: : :
Kollusca Gastropoda						• ; •	4 3 1 1		•	1 1 1 1		• { }	4 • •	1 1 1	• • •	4
Parvariachis obesa	67	1 1	10	1 	, ,	•	•	• }	• •		•	1	•	1 t t	• •	•
Kitrela argus	12	i : -	i ;	i 1	;	i '	i {	; ;	•	; ; ;	;	1	;	-	i }	;
Cortanachis sertularium	2	2	1	; ;	:	, ,	: {	;	: :	•	-	: :	; 2	1		: :
Parvanachis Isabelli		1	;	;		;	:		; ;	: :		l 1 .		E 1 1 1	: :	•
Kitrela ocellata			r 1 1	} {	; ;	;	:	: {	:	ł	i i	1	¦. ; 4		1 1 2	 _ {
Thais haesmatoma	; ;	:	; ;	:	;	1 7 1	:	; ;	1 1 1	1 1	: :	; ;	; 5 ;	:	:	:
fissurela sp			1 1 1	: ;	í :	{	;	; }	;	(. 1 5		: 3	: 17	: ; 5		:
Crepidula oculata			L J J I	6 5 7 7 4		1 1 4 4 5	(; ; ; ;		1 1 1 1	;	- - - -	; . ; ;		;	;	;
8IVALVIA		;). 1	;	;	;	;	k 1 1	: :	;	:	:	;	:	;	. [
Hiatella arctica		1		4	:				; 4	;	1			! 7	}	;
Acicea andasoni			1 1	, , , ,		;		1	:	: :		:	1	:		: .
Perna perna		•	: 2	•	;		; ;	38	25	39		;	268	: :	895	: 1610
Musculus lateralis		; ; ;		5	;	; ;	;		;	:	î	; ; ;		:	:	:
Noberbo castaneous		:	i l	4	:	; [•		:	;		:		:		:
SUB TOTAL	71	; 3	: ; 12	: : 10	: : •	; ; a	1 : 1.1 a :	: : 38	: • - 20	: 30 :	,	: : · .	392	; • • • •	007	: : :644

ORGANISHS ANNELIDA POLYCHAETA SP1 SP2 SP3 SP4 Sp5 Sp6		K.S 17 53 13 11 10	1.5 23 28 3 8	H.S 	н.I 	I.S 	,				•			•		· .	
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spó			5	43	1	1	i ii	1	l .	1	1	1	5	l .	: 9	1	1
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sp7		t i	1	{	1	;	1 5	1 4	14.	6	}		; ;	: 3	1 2		۱. I
sp8		5	i - 1	;	1	}	: 283	202	141	1	4	167	1 - I	: 32	262	1	1
sp9		¦ 1 -	1 ···	22	9	;	: :			• · ·		3		l, 7.° ₁	 1	} •	1
SUB TOTAL		115	108	294	142	, ; 43	: 1 357	294	221	62	27	126	19	; 162	345	. 6	24
CHELICHERATA		;			5 }	i t	1			i 1 .			i i	; ;	i i 1 -	i 1	1
PYNOGONIDA		1	7	1	1		ł		1	1				1	1	1	1
CRUSTACEA		1		1		;	:			;				:	:	1	1 !
8RACHYURA		1	:	;	1	ļ	1	1	E	1	1			;	1	1	1
spi		; ; 8	1	; ; 20	12	 2	1 1 24	20	: : 41	: : 20		. 2		: : 2	1 :	1	1
sp2		•	; :	1			54			9	-			:			i
sp3		1	:	:	:	1	1 7	4		15				į		:	
SPÅ		;	:	}	;	:	: 2		1	!				: 2	. 21		
		:	:	1	:		;		1							1	!
SUB TOTAL		: 8	. 0	: 20	12	1 2	: 87	35	71	45	6	2	. 0 :	: 4	. 2 :	· • • 2	; 8
		:	i	1	ł	:	:	1		1		;		;	;	1	;
CIRRIPEOIA		:	: :			:	: :		1	: !	; . ;			:	1	:	;
			2							:					• •	, !	•
Balanus spi		. 8	: 1	. 23	4	3	: 59	28	. 34	81		: ន		:	:		:
Balanus sp2		2	:	1	4				116	1 126	2			: 16	12		:
		-	!	1	;	: -			}	1			: :	1		!	:
SUB TOTAL	:	10	: i	24	3	6	: 93	41	150	207	2	14	: 0 :	- 16	1 12	: e	: 8

ZOOBENTHOS DISTRIBUTION IN THE GUANABARA BAY(Cont.)

6.55

5. S

Silver Silver

ZOOBENTHOS DISTRIBUTION IN THE GUANABARA BAY(Cont.)

	ı					•									,	
STATION	1	1	 {	2			3	, , ,	4	5	, 	6		7	· { •	8
ORGANISHS	: H.S	1.5	: N.S	, N.I	1.5	: X.S	. N.I	K.S	N I	H.S	K.S	I.S	K.S	: H.I	K.S	H.1
SIPUNCULIDA	1	;	1				: 5	 1	1 1 1		 1	1	5	1 6	:	, :
Echinoderna Echinoidea		3 1 1 1	; ; ;	i { 			;	i 1 1 1 1	; 1 1 1					: : : 4		
Paracentrotus gaimardi	: ·	i 	; ; ,		i [;	: 	i	i 1	1	i 1	i 	2	; 4 1	:	i
UROCHORDATA	1	1	; ;		•	: :	i 1	i 1	1	i {	i 1	; ;	i .	; ;	1	1
ASCIDEACEA	1	1	1	1	•	8	;	i 	;	:	1	1.		:	1	1
Styella plicata	12	; ;	; 2	: :3	: ; 7	: 8	: ; 7	55	: ; 38	2	1	12	4	1	;	; ;
TOTAL	: 1 288	i 165	: 2309	: 1 273	: : 93	: 1 552	380	553	: : 377	68	i 151	1 25	605	: 386	: 908	: : 115
ECTOPROCTA	;	;	1	: 	1	;	:		:	i -		;		1	: :	:
Bugula Heritima	t 1	X	•	1	t X	i X		x	; X			;		1		
Grassimarginatella leucocydia	: :	X	1	X	;	: : X	;	X	: : X		1	:	X	;	1 1 7 1	: :
Zoobotrypa pellucidum	F F	;	; ; X	;	{	; ;	; ; X	i X	L. LX	;	: : X	, ,		;	;	1
Dideminum Candidum	;	, ,	;	;	;	: : X	: : X	: X	; ; X	X X		:	:	1) 2	:	:
	;	: 	: !	 	! 	; '			: !			; 		:	; '	.

APPENDIX 7.4

FISH PRODUCTION

TABLE APP.7.4

(August / 1992)

Table 16-6 Results of Fishery Survey

Inventory No. 1

ł

Location : STH-1 : Inner part of bay / front of Maua	: Іппег раг	t of bay	μ L	ont of	Maua	
Method of Fishery : Bamboo Screen	: Bamboo 'S	creen				
Date : 23th / June / 1992	- / 1992					
	Total	Number				
	Weight	of i	ټ. ا	ength	Length (cm)	Weight
Name of Fish	of Fish	Fish	Min.	Min. Max.	Mean	
Tainha	52.0 kg	68 .	22	68	40.0	765
Gorvîna	15.5	27	12	48	35.7	574
Bagra	22.0	28	12	70	41.4	786
Total	89.5 kg 123	. 123				728
			ŀ			

APP 7-79

Inventory No. 2

Location : STH-2 : Inner part of bay / front of Apa Guapimirim	: Inner par	t of bay	/ 11	ont of	Apa	Guaplmiri
Method of Fishery : Set Net	y : Set Net					
Date : 23th / June / 1992	ne / 1992					
	Total Weight	Number of		Length (cm)	(EB)	Mean Weigh
Name of Fish	of Fish	Fish	Min.	Min. Max.	Mean	n (g)
Parati	7.0 kg	20	12	40	29.	0
Gorvina	6.0	10	23	38	32.	ю 10
Bagra	6.0	60	21	40	32.	7 667
Anchova	3.5	05	25	34	30	<i>с</i> о
Pescadinha	2.5	07	12	32	20	च
Total	25.0 Xg	5				054

Inventory No. 3						
Location : STH-3 : Near petrobras 011 Reservoir	3 : Near petr	obras O1	1 Res	ervoir		
Method of Fishery : Set Net	ry : Set Net					
Date : 25th / June / 1992	une / 1992					
Name of Fish	Total Weight of Fish	Number of Fish	Mtn L	Length (cm) Min. Max. Me	(cm) Mean	Mean Weight (g)
Gorvina	20.0 kg	2	30	40	34	400
pirauna	3.5	٦	1	1	55	3500
Linguado	2.3	H	ł	1	53	2300
Total	25.0 kg	7				. . .

<pre>ion : STH-4 : Near Fiscal d of Fishery : Set Net : 24th / June / 1992 : 24th / June / 1992 of Fish</pre>	Inventory No. 4						
Number of flsh Min. Length (cm) Flsh Min. Max. Mean 30 25 29 26.5 2 35.0 1 35.0 1 35.0 1 20.0	Location : STH-4	. : Near Fisc	al Islan	P			
<pre>/ June / 1992 / June / 1992 Total Number Weight of Vumber Weight of Min. Max. Mean of Fish Fish Min. Max. Mean 8.5 kg 30 25 29 26.5 1.5 2.0 4 32 40 33:0 2.0 1 35.0 0.5 1 35.0 17.7 kg 40</pre>	Method of Fisher	y : Set Net					
Total Number Total Number Weight of Fish Min. Max. Mean Weight 15 Nin. Max. Mean 8.5 kg 30 25 29 26.5 1.5 1.5 2 32 40 33.0 36.0 2.0 1 35.0 35.0 1 35.0 1 35.0 1 20.0 1	Date : 24th / Ju	me / 1992		ł			
of Fish Fish Min. Max. Mean 8.5 kg 30 25 29 26.5 1.5 2 2 25 29 36.0 2.0 1 47.0 2.0 1 35.0 0.2 1 35.0 17.7 kg 40		Total Weight	Number of	Ē.	enzth	(cm)	Mean Weigh
8.5 kg 30 25 29 26.5 1.5 2 38.0 2.0 4 32 40 33.0 2.0 1 77 7 47.0 0.5 1 77 1 35.0 0.2 1 77 1 20.0	Name of Fish	of Fish	Fish	Min.	Max.	Mean	(2)
1.5 2 2.0 4 32 40 36.0 3.0 1 47.0 2.0 1 47.0 0.5 1 35.0 0.2 1 35.0 17.7 kg 40 20.0	Cocoroca	ŝ	30	25	29	26.5	283
2.0 4 32 40 33.0 3.0 1 47.0 2.0 1 47.0 0.5 1 35.0 0.2 1 20.0	Bagre		61			36.0	750
3.0 1 47.0 2.0 1 47.0 0.5 1 35.0 0.2 1 20.0	Corvina	2.0	4	32	40	33.0	500
2.0 1 35.0 0.5 1 35.0 0.2 1 35.0 17.7 kg 40	Sargo	3.0	ы	ı I	ŀ	47.0	3000
0.5 1 35.0 0.2 1 20.0 17.7 kg 40	Enchada	2.0	ы	ł	:	35.0	2000
17.7 kg 40 20.0	Pataterra	0.5	м	ł	ł	35.0	500
17.7 kg	Porco	0.2	ы	1	1	20.0	200
	Total	17.7 kg	40	!	:	1	

Inventory No. 5						
Location : STH-5 :	Front of	Enseada de Jurujuba bay	de Ju	rujuba	bay	
Method of Fishery : Set Net	: Set Net					
Date : 30th / June / 1992	/ 1992					
Мошь АФ 17. с. К	Total Weight	Number of Fich	י ג ג	Length (cm)	(cm)	Mean Weight
NAMEN USI FUEN	01 1121	1191.3		- 754	леан	(8)
Parat1	10.5 kg.	28	28.5	38	33.0	375
Cocoroca	9.1	35	18.0	27	22.3	260
Corninhota	2.0	t~	27.5	40	30.0	286
Enxoveta	2.5	10	22.0		29.0	250
Tainha	2.9	ę	44.0	53.0	47.0	196
Carapeva	0.3	ო	15.0	24.0	20.0	300
Marimba	0.6	7	16.0	18.0	17.0	600
Total	27.9 kg	83	1	1	1	

		,	

Table 16-7 Fish Production Inventory at Maua Fish Colony (1990)

Month													
Fish Name	Jan.	Feb.	Kar.	Åpr.	May	Jun.	Jul.	Agu.	Sep.	Oct.	Nov.	Dec.	Total
Bagre	3,750	5,275	7,142	7,532	3,754	3,669	5,121	4,710	2,133	2,820	2,761	2,560	51,227
Camarao rosa	222	428	213		25		75	961	1,058	1,035	763	756	5,536
Corvina	9,243	12,337	7,690	2,357	2,499	1,682	3,381	6,296	5,443	7,044	25,109	12,465	95,526
Anchova	67	1,090			505		280	3,421				110	5,473
Espada	3,463				188	993						235	4,875
Parati	213			50		50			80		25	765	1,183
Pescada Amar.	88	110	15								116	50	379
Pescada Perna de moca	10												10
Pescadinha	-	-	-	· -	-	-	-	÷-	-	-	-	-	
Raia										35			35
Robalo	42	•	665	986	427	-	-	-	30	-	100	155	2,405
Sardinha bóca torta	6,348	8,050	9,520	7,990	5,360	7,590	5,900	6,750	3,480	3,260	3,370	680	68,298
Sardinha Lage	330	2,020		-	•	÷	1,240	-	-	640	-	6,420	10,650
Sardinha verdadeira	-	· -	-	~	190	-	50	-	-	-	-	-	240
Tainha	7,870	14,103	20,957	20,725	17,791	10,385	5,676	7,703	6,986	9,391	16,391	18,496	156,474
Xareu	-	· •	-	. –	-	-	-	-	-		-	85	85
Xerelete	-	-		-	-	80	-	-	-	· -		50	130
Outros	5,567	5,324	7,681	8,489	8,927	9,289	6,488	6.107	5,886	4,113	4,903	4,885	77,659
Total	37,213	48,737	53,883	48,129	39,666	33,738	28.191	35,948	25,096	28,338	53,538	47,712	480,189



Table 16-8 Fish Production Inventory at Maua Fish Colony (1991)

		_											
Nonth													
Fish Name	Jan.	Feb.	Mar.	Арг.	Мау	Jun.	Jul.	Agu.	Sep.	Oct.	Nov.	Dec.	Total
Bagre	9,284	7,714	6,351	3,865	1,520	1,307	1,780	2,737	2,785	2,469	7,783	4,910	52,50
Cagarao rosa	567		-	-	-	520	1,495	3,039	6.144	5,613		1,485	18.86
Corvina	8,279	4,720	5,902	5,242	6,531	5,331	2,580	6,418	6,435	7,050	6,310	11,791	76,58
Anchova	· 215	519	565	*	67		-	-	-	-	433	2,221	4,02
Espada	135	-	-	40	250	475	1,340	3,657	1,809	177	45	70	7,99
Parati	285	2,977	5,623	6,083	14,711	14,414	2,680	2,065	3,155	1,912	2,962	130	56,99
Pescada Amar	122	245	72	-	-	*	-	-	-	-	146	90	67
Pescada perna de 20ca	-	-	-	-	-		-	-	-	-	-	-	
Pescadinha	-	-	-	-	-	-	-	-	-	- '	-	-	
Raia	· •	-		.	-	-	-	-	÷ -	-	·	-	
Robalo	285	365	85	592	15	100	-	-	33	-	245	30	1,75
Sardinha boca torta	2,910	6,220	3,850	3,060	1,200	-	350	420	1,030	1,840	4,337	4,590	29,80
Sardinha Lage	3,290	-	720	-	-		-	-	-	-	-	-	4,01
Sardinha verdadeira	120	2,100	1,055	500	15,411	8,727	11,850	7,175	1,380	210	-	730	49,25
Tainha	19,600	15,944	20,450	21,401	8,711	6,934	3,834	4,545	4,837	7,092	18,665	18,485	150,35
Xareu	: • •	-		-	-	-	-	-	-	-	-	150	15
Xerelete	-		~	: -	-	-	-		-		-	-	
Calo	-		-	-		-	-	-	-		410	-	41
Badejo			-	20	30	-	+		-	-	-	-	5
Dutros	6,952	6,709	6,934	5,310	4,766	4,174	3,182	1,864	2,237	1.602	6,865	2,484	53,07
Total	52.044	47,513	51,607	46,113	53,272	41,982	29,091	31,920	29,845	27,965	48,201	47,166	506,71

APP 7-81

Table 15-9 Fish Production Inventory at Ramos Fish Colony (yearly production)

.

		unit : kg
Fish Name	1990	1991
Bagre	680	228
Camarao Rosa		
Corvina	7.929	9,932
Anchova	775	748
Espada	2,474	-
Parati	2,640	1,762
Pescada Amar		
Pescada Perna de moca		
Pescadinha	390	246
Raia		
Robalo	66	49
Sardinha boca torta		
Sardinha boca torta		
Sardinha verdadetra	500	5,380
Tainha	5,741	3,797
Xareu		
Xerelete		
Outros	3,213	223
Total	24,441	22,365

Table 16-10 Fish Production Inventory at Niterol Market (July 1992)

															unit	: kg
Date																
Fish Name	1	2	3	4	5	6	7	8	9	10	u	12	13	14	15	16
Corvina	50	120	318	70				89	40	30	600			10		
Xerelete	15	36	320		60				1600						150	
Tainha		702	400	582	56		109			110	20			116		120
Bagre	85	•	60	95	- 40			14	15	150				5		
Espada																
Anchova	60	48	220	336		8	4	108	25	75	452			195	160	
Anchoveta .	•										60				26	25
Sardinha Boca Torta					430	300	400			35	635			36	86	500
Parati	72	315	65	371	120	6	63	37			90			222	50	130
Galo															60	
Cocoroca		68			10	20	6	12		10	30			20		
Cascadora																
Carapicu														23		
Savelha				274	240				130	40	80			150		
lanjuba		35		85												193
Camarao	50	32		46	98		38							99	38	
5111	45	81		202	147		25									
Sardinha Lage	120	160						440	60	120				46		
thers		460	235	251	560		7				110			131		
fotal	497	2057	1618	2312	1761	334	652	700	1870	570	2077			1198	570	968

.

unit : kg

Date																
Fish Name	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Tota
Corvina												450				1,777
Xerelete																2,18
Tainha	200				126			230	66			54	25	70		2,986
Bagre	80				22							320		10		896
Espada	15				30							:				45
Anchova	30	10			30	17						45	4	'		1.827
Anchoveta	15							117						•		240
Sardinha Boca Torta		270					120					240	200			3,252
Paratl	143	25			46	32		115	56			65	18	17		2,058
Galo																60
Cocoroca	8					16	13						6			219
ascadora						60										60
Carapicu						15										38
Savelha							3200	75								4,189
lanjuba	200							190	30		185	100	437	107		1,562
asarao							40	28	40			42		25		576
iri -							56		73			75		43		747
ardinha Lage		250														1,196
thers	25				5											1,779
otal	716	555			254	140	3429	755	265		185	1391	690	272		25,836

APPENDIX 7. 5-1

SALTMARSH AND MANGROVE SURVEYS

TABLE APP.7.5-1

Results of the Study on Aquatic Organisms.

(June / 1992)

		11																
Station	1			2	3	1	4		5		6		7	,	8)
Depth(m)																		
Parameter	_		0.1	5.0	0.1	5.0	0.1	3.0	0.1	5.0	0.1	5.0	0.1	3.0	0.1	2.0	0.1	5.0
Chlorophill-a	• -	-	5.3S	12.03	8.02	12.70	5.04	2.04	0.89	1.12	28.30	19.60	41.43		43.66	44.91	58.99	13.66
Pheophitine			<0.10	<0.10	<0.10	<0.10	<0.10	<0,10	<0.10	<0,10	<0.10	<0.10	<0.10		<0.10	<0.10	<0.10	<0.10
Sampling time		;	į	5:20	1	6:00	1	6:50	1	7:20	1	6:50	1	6:00	1	5:50		15:25
Station		10		11		12	1	3		14		15		16	1	7	;	8
Station																		
Depth												3.0	~ .	3.3			0.1	3.5
Parameter	0.1	5.0	0.1	4.0	0.1	5.0	0.1	3.0	0.1	3.0	0.1		0.1	3.5	0.1	3.5	0.1	
Parameter		5.0 15.37				5.0 17.37				3.0 16.04		20.49		••••••	77.52			
Parameter	27.40	15.37	34.21	23.52	34.75		50.79	102.91	73.51	16.04			40.01	••••••		40.01		62.82

Table 16-1 Chlorophill-a and Pheophitine Concentrations (μ g/l) in High Tide (May 18, 1992)

Table 16-2 Chlorophill-a and Pheophitine Concentrations (μ g/l) in Low Tide (May 18, 1992)

Station	1			2		1	4		15		6		1	r	1	8	9	
Depth(s)				-														
Parameter	0.1	0.5	0.1	5.0	0.1	5.0	0.1	3.0	0.1	5.0	0.1	5.0	0.1	3.0	0.1	2.0	0.1	4.0
Chlorophill-a	0.46	-	35.04	11.76	14.97	15.55	70.26	14.15	27.49	6.58	11.95	9.55	71.64	22.80	61.22	33.73	56.49	16.15
Pheophillne	0.50	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	12.07	52.72	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
· · · · · · · · · · · · · · · · · · ·		:15																
Sampling time	9			1:05	ر 	11:55		.3:00		3:55		1:50				10:20		:40
Station		10		11:05		11:55		.3:00		3:55		1:50		1:15		10:20	9 1	
Sampling time Station Depth																		
Station																		8
Station Depth Paraweter		10		11 2.3	0.1	12	0.1		0.1	14		15 3.0	0.1	16 3.3	0.1	17 3.0	1	8 3.0
Station Depth	0.1	10	0.1 136.08	11 2.3	0.1 38.40	12	0.1 74.84	.3 3.0 82.85	0.1 88.21	14 3.0	0.1 32.08	15 3.0 22.72	0.1	16 3.3 13.30	0.1	17 3.0 20.31	1 0.1 224.53	8 3.0 72.70

Table 16-3	Chlorophill-a and Pheophitine Co	oncentrations (//g/l)	in High Tide	(June 8, 1992)
------------	----------------------------------	-----------------------	--------------	----------------

Station	1			2	3		4		5		6		7		8		S)
Depth(m) Parameter	0.1	5.0	0.1	5.0	0.1	5.0	0.1	3.0	0.1	5.0	0.1	5.0	0.1	3,0	0.1	2.0	0.1	5.0
Chlorophill-a	1.44	1.78	2.67	1.78	2.47	3.56	21.39	14.64	4.90	3.28	23.52	4.31	33.41	9,35	10.69	3.17	46.33	12.47
Pheophitine	0.80	3.21	0.54	4.76	<0.10	3.67	11.58	8,05	2.90	5.35	21.38	4.14	17.11	11.23	17.38	13.72	32.25	8.73
Saapling time							1					•						
		10				12		3		14		15		16		7	· · · · · · · · · · · · · · · · · · · ·	18
Station Depth(m)		10		11		12											1	18
Station Depth(m) Parameter	0.1	10 5.0	0.1	11 2.5	0.1	12 5.0	0.1	3 3.0	0.1	14 2.5	0.1	15 3.0	0.1		1	7		18
Depth(m) Parameter	0.1	5.0		2.5			0.1	3.0	0.1	2.5		3.0		3.5	0.1		0.1	4-0 8.0
Depth(m)	0.1	5.0 3.56	0.1	2.5	0.1	5.0	0.1	3.0 38.76	0.1	2.5	0.1	3.0	0.1	3.5	0.1	5.0	0.1	4-0 8.0

Table 16-4	Chlorophill-a	and Pheophitine	Concentrations	$(\mu g/1)$	in	LOW T!	lde	(June 8	, 199	92)
------------	---------------	-----------------	----------------	-------------	----	--------	-----	---------	-------	-----

Station Depth	1			2	3		4		5		6		7		8		9	
Parameter			0.1	5.0	0.1	5.0	0.1	3.0	0.1	5.0	0.1	5.0	0.1	3.0	0.1	2.0	0.1	5.0
Chiorophili-a	-	•	5.35	3.10	31.19	4.00	138.10	6.01	61.10	8.26	30.23	14.26	53.46		53.46	31.68	19.60	11.58
Pheophi t Ine	-	· -	12.74	10.38	16.52	4.10	66.08	2.41	39.87	10.79	14.61	13.19	23.57		38,20	34.35	10.96	4.01
Sampling time																		
								• • •								•		
																		
Station		10		11		12	13	1		14		15		16	1	ז	1	8
Depth																-		
Parameter	0.1	\$.0	0.1	2.5	0.1	5.0	0.1	3.0	0.1	5,0	0.1	3.0	0.1	3.5	0.1	5.0	0.1	4.0

Chlorophill-a	61.48	3.56	13.37	17.38	12.03	8.02	53.45	45.44	97.57	9.36	10.69	7.48	14.37	6.24	81.53	14.70	12.03	3.36
Pheophitine	37.69	4.54	11.90	19.01	7.75	10.07	41.63	35.95	54.00	4 - 68	9.27	4.49	15.73	8.24	53.19	4.01	2.01	4.68
Sampling time																		

Table 16-5 Summary of	Summary of Crab Production		Z-W-7	unit: No. of barrow/m ²	row/m ²
STM-4	unit: No. of barrow/	rrow/m ²	SpelesS	No. of sampling square	ť
Species No. of 1	sampling square 2 3 4	مى ا	Gonjopsis cruentata	3	2
Gonfopsis cruentata UCA (Minuca) rapax ICA (Minuca) mordax ICA (Minuca) mordax	5 30 20 10 10	10		6 10 66 10 4	1 38
izoma guanhumi	04	σ			
<u>STM-5</u>			<u>STM-8</u>		
Species No. of 1	sampling square 2 3 4	Ю	S p e c i e s s	No. of sampling square 1 2 3 4	۰ ۵
Goniopsis cruentata Chasmagnatus granulata UCA (Minuca) rapax Ucides cordatus	4 12 4 12 30 2 2 2	N Ø	Goniopsis cruentata Chasmagnatus granulata UCA (Minuca) rapax UCA (Boboruca) thayerl Ucides cordatus	4 20 20 12 2 20 2 2 2 4 2 2 2 2 2 2 2 2 2 2 2 2 2	
		*		r .	
STW-6				•	
Species No.of 1	sampling square 2 3 4	ري. ما	STM-9		
Goniopsis cruentata	0	12	Species	No. of sampling square 1 2 3 4	ۍ ۱
Chasmagnatus granulata UCA (Minuca) rapax UCA (Boboruca) mordax UCA (Boboruca) thayeri UCA (Bobotruca) thayeri	8 100 7 100 7		Goniopsis cruentata Chasmagnatus granulata UCA (Minuca) rapax UCA (Minuca) mordax	4 6 6 20 19 5 19 20 16	5 7 5

APP 7-87

.

Specles	М. М.	or sampi	no. or sampling square 1 2 3	are 4	w
Goniopsis cruentata	4	63			
Chasmagnatus granulata	4	4	ო	Ś	4
UCA (Minuca) rapax	16			16	
UCA (Minuca) mordax		10			
UCA (Boboruca) thayer1			12		30
Ucides cordatus		ო	4	دم ما	ဖ

Table 16-12 Zooplankton Population in the Guanabara Bay (Net Mesh : 50 $\,\mu\,$ m)

Appen Chaet. Eggs Total Org/m³ 4.740 3.293 1.553 1.987 353 347 580 580 387 180 513 80 83 513 740 906 173 147 unit : kg 711 494 233 298 298 ដ 111 68 135 2782 543 5 0 00 0 o o oc cularia Hydromedusae Siphonophora Cirripedia La c 00 0 o 0 0 0 0 00 0 0 o 15 23 0 12 33 80 C 00 6 0 0 585 285 900 40 8 55 1.3 Copep. Groups (No. of Org. in Sample Bottle) Station Mydrom Sipho. Citri. Dec. Copep. Clad. Ostr. oc 0 [Legend 33 828 20 2024 596 28 32 12 14 93 S4 154 33 35 Ц ង [Note] S : Surface Layer M : Middle Layer 110 ဋ္ဌက σ, -10 ကား 18 Total c1 ហ្គ 16 17 2 13 H Total Org/m³ 1,843 620 1,347 507 201 201 2,927 ø 0 0 13 13 22 13 23 1a 130 93 202 284 91 18 С 1,338 Appen. Chaet. Eggs ŝ 0 unit : kg lia Larua I Larua omedusae 00 o 86 5 0 0 Sipho. CIrit. CORF. Copep. Ostr. [Legend] Hydrom. 40 200 Ş Copep. Clad. 21 95 21 95 12 13 Q 270 243 549 239 0 0 750 30 wa 0 ن. قن യശ 00 ŝ 00 Hydrom. Sipho. Cirri. [Note] S : Surface Layer M : Middle Layer 123 33 45 h 20 0 7 o ST-00 00 00 5 Station Total 16 ŝ 80 #1 2 1 14 5

> APP 7-89

dicularia competha

Table 16-11 Zooplankton Population in the Guanabara Bay (Net Mesh : 200 $\mu\,{\rm m})$

APPENDIX 7.5-2

SALTMARSH AND MANGROVE SURVEYS

TABLE APP.7.5-2

Results of crab community survey perfomed on saltmarsh and mangrove in the Guanabara bay.

(November / 1992)

Station Rio Iguacu st.1 Date 16th / november / 1992

	Species	ч	Samp1. 2	Sampling station 2 3 4	tion 4	ស
		- Mu	ab. of	Numb. of burrow	/ <u>B</u> 2	
Point 1:	Genero Uca Chasmagnathus granulata Ucides cordatus	N 044	0 N O 7	004 004	4 Q	0,00 0
Point 2:	Genero Uca Chasmagnathus granulata Ucides cordatus	- - - - - - - - - - - - - - - - - - -	000 N H	090 84	0 m m H	нц 10.64
Point 3:	Genero Uca Chasmagnathus granulata Ucides cordatus	0 M M M	8 V O 7	4	%4 004	994 74
	Species		Point 2		Station	Г
Mean	Genero Uca Chasmagnathus granulata Ucides cordatus	20,0	10,01		59' 79'	990

Table Crab community survey

Station Rio Iguacu st.2 Date 16th \ november \ 1992

***		1	Sampl	Sampling station	tion	
	Species	-	3	n	*	6
		ΝΠ	lo .dmuN	of burrow	/ #2	
Point 1:	Genero Uca Chasmagnathus granulata Ucides cordatus	0° 4	4 0 m n	000	998	808 778
Point 2:	Genero Uca Chaspagnathus granulata Ucides cordatus	0000	<u>o</u> n	10	10 m	30
Point 3:	Genero Uca Chasmagnathus granulata Ucides cordatus	7 0	90 N	001 100 100	200	30.84
	Species		Point 2		Station	ion 2
Mean	Genero Uca Chasmagnathus granulata Ucides cordatus	25,0 3,2,0 4,2,0	600 19 19 19 19 19 19 19 19 19 19 19 19 19	944 94,60 94,60		30,0 20,0 20,0

Rio Estrela st.1 11th \ november \ 1992 Station Date

	Species	ч	Sampl. 2	Sampling station 2.344	ton 4	Ŋ
		MUR	Numb. of	burrow	/ m2	
Point 1:	Genero Uca Chasmagnathus granulata Ucides cordatus Goniopsis cruentata	600 23	89n-1	0000 000 000	o M	90 77
Point 2:	Genero Uca Chasmagnathus granulata Ucides cordatus Goniopsis cruentata	00220 100	4 9 9 9 9 9	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	9 %	ខ្លួំទ្ហ ហ
Point 3:	Genero Uca Chasmagnathus granulata Ucides condatus Goniopsis cruentata	0	олю П	D M	582	4
	Species	-	Point 2	m	Station	 8
neam 1	Genero Uca Chasmagnathus granulata Ucides cordatus Goniopsis cruentata	8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	9470 9470	2004	N400

Crab community survey Table

Rio Iguacu st.3 16th \ november \ 1992 Station Date

 	Species	L Sai	2 1 1	Sampling station 2 3 4	сіо 4	ហ
		לשניא	ц О	Numb. of burrow / m2	/ #2	
Point 1:	Point 1: Chasmagnathus granulata	30 12 12	52	10 70 70	72 Y	40 77 70
			-		+.t	ļ
	Species	Point 1	t t	0,	Station 3	n
цеал	Genero Uca Chasmagnathus granulata Ucides cordatus	475 175	044			17.2
			111			į

Crab community survey Table

Rio Estrela st.2 11th \ november \ 1992 Station Date

*			i Lques	sampling station	ion	
	Spectes	-	2	າ 	4 1 1	n
			0. OT	NUMB. OF DUFFOW / M2	/ 82	
Point 1:	Genero Uca Point 1: Chasmadnathus dranulata	80	9 C	0 0 2 7	80	60 10
	Ucides cordatus Conjonsis crutentata		600) 1	5	8
	Spectes		Point Point		station 2	2
Mean	Genero Uca Chasmagnathus granulata Ucides cordatus Goniopsis cruentata		0044 0044	8 9 7 1 1	0 0 0 0 0 4 4	

Table Crab community survey

Rio Estrela st.3 11th \ november \ 1992 Station Date

	Species	1	Sampli 2	Sampling station 2 3 4	tion 4	ŝ
		MLUN N	b. of	Numb. of burrow / m2	/ m2	
Point 1:	Genero Uca Chasmagnathus granulata Ucides cordatus Goniopsis cruentata	0 H 8	00 N 91	1 130 130	4 H 0 0 N	50 120
		1				
	Species	Ø4 	Point	} ! ! !	Station 3	1 M.
меал	Genero Uca Chasmagnathus granulata Ucides cordatus Goniopsis cruentata		52,0 10,0 1,0 0,6		22,0 10,0 0,6	0000

Station Rio Guapimirim st.1 Date 12th \ november \ 1992

-	-	Î					
	Species	йн I	Samplíng 1 2	station 3	5	4	۰۰ I
		- quin	Å.	hurrow /	ä		
Point 1:	Genero Uca Chasmagnathus granulata	04	90 17		20	16	99
	Ucides cordatu	n	10		4	6	N
4 1 1 1 1	Genero Uca	10	20		91	70 70	υ Γι ε
	Ucides cordati	m	• •		9	5	2 m
Doint 2.	Genero Uca Chasmagnathus granulata	20	10		0 4	20	ê
	Ucides cordati	8) ਜ 		4	9	e
Point 4	Genero Uca Chasmagnathus granulata	30	10		10	ą	0 4 7
	Ucides cordatu	1 m	6		4	14	•
		20	°,20		20	, n	ខ្ម
round of	unasmagnathus granulata Ucides cordatus	ν ρ ί	ישר		2	0 14	60
				-			
	Species	6 1	Point. 3	4	ы Б	Station	-
Mean		15,2 15,0 3,2 4,2	0.01	18,0 2 18,0 2	22,040	17,2	1 5 1
	UCLGES COLGATUS			o, 4		7,2	

Table Crab community survey

Station Rio Guapimirim st.2 Date 12th \ november \ 1992

	Species		Sampl. 2	Sampling station 2 3 4	tion 4	ں.
	•	ШŅ	Numb. of	burrow / m2	/ <u>1</u> 2	
Point 1:	Genero Uca Genero Uca Chasmagnathus granulata Ucides cordatus	0.14	040	004	0 M N N	1940 11
Point 2:	Genero Uca Chasmagnathus granulata Ucides cordatus	908 1	0 11 4	60 N H	N M M N	1044
Point 3:	Genero Uca Chasmagnathus granulata Ucides cordatus Contopsis cruentata	04 04 04	1900-7- 1-1	ហួយក ក	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	ម្មី៣សំអ
;	Species	г	Point 2	m	Station	ion 2
	Genero Uca Chasmagnathus granulata Ucides cordatus	4 4 9 4 4 9 8 6 1 7	18,4 3,6 7,8	19 3,8 3,8 9	มี มี มี มี มี มี มี มี มี มี มี มี มี	mmia
				1111111111		

Station Rio Guapimirim st.3 Date 12th \ november \ 1992

					Ì
	Species	Sampling 1 2	ng station 2 3	4	ம
		Numb. of]	burrow / m2		
Point 1:	Genero Uca Chasmagnathus granulata Ucides cordatus Goniopsis cruentata	ли 2 0 8 1 1 1 1 1 1	0 4 0 M	4 10400	0040
Point 2:	Genero Uca Chasmagnathus granulata Ucides cordatus Goniopsis cruentata	м 0 Ф М Н Н	0 7 1 1 1	ц N Ø 4	0 00
Point 3:	Genero Uca Chasmagnathus granulata Ucides cordatus	20 16 2 8 3	13 & 60 73 7	ы 8734 С	70
Point 4:	Genero Uca Chasmagnathus granulata Ucides cordatus	20 44 44 44	240 1040	6 6 7 7	4 n 0
Point 5:	Genero Uca Chasmagnathus granulata Ucides cordatus	16	26 24 34 34	רי פייאס א	1 1 1 1 1 1 1
	Species	1 2 3	nt 4 5	Station	m
	Genero Uca Chasmagnathus granulata Ucides cordatus Goniopsis cruentata	н 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 16,2 19,2 4 3,2 3,0 2 4,0 3,6	14, 14 14, 14 14, 14 14, 14 14 14, 14 14 14 14 14 14 14 14 14 14 14 14 14 1	
_	-				-

Table Crab community survey

Station Rio Cacerebu st.1 Date 13th \ november \ 1992

						-
	Spectes	 	sampli 2	Sampling station 2 3 4	tion 4	<u>ہ</u>
	-	ECN	p. of	Numb. of burrow	- / B2	1
Point 1:	Genero Uca Chasmagnathus granulata	50 70 70	708 708	0 <i>0</i> 77	.0£	30
Point 2:	Genero Uca Chasmagnathus granulata	10	9 0 7 7	09 84	50 50 50	30 e
Point 3:	Genero Uca Chasmagnathus granulata Ucides cordatus	50 5 50 -	225	50 50 5	90 11	N Q Q N N
			} 			
	Species	р. - н	Point 2	m	Station	ਰ g
CI UUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU	Genero Uca Chasmagnathus granulata Ucides cordatus	20,8 206,0	16,4 23,2	19,2 17,2 0,4	00', 777	જનન

Rio Cacerebu st.2 13th \ november \ 1992 Station Date

		Sau Sau	Sampling stat	station		
	Species	-1		n	4	ŝ
		.dauN	of burrow	/ m2		
- r		0	20	20	00	52
	Ucides cordatus	n	9 9	ວ ເ	74	9 V
		99	20	30	16	e e
FOLDE 2:	Chasmagnathus granulata Ucides cordatus	aşv9 ~1	9 N H	n c N	0 N M	0 N N
	Genero Uca	20	30	101	0	20
Point 3:	Chasmagnathus granulata Ucides cordatus	76 76	50 70 70	0	ក រា 4	л Н
		80	20	00	0	9.7
	juatius granula cordatus	10	en	0.7	n	* * *
	Genero Uca	00	14	20	10	19
Point 5:	Chasmagnathus granulata Ucides cordatus	16 4	10	4 0 4	vo •4	9 7 9
	Species		Point	*	Station	
		1 2	4	ហ		1
	Genero Uca Chasmagnathus granulata Ucides cordatus	25,0 25,2 10,4 20,8 4,4 3,0	22,0 15,2 14,2 8,8 2,8 2,4	н 19 19 19 19 19 19 19 19 19 19 19 19 19	ONM NH	ത്ത പ

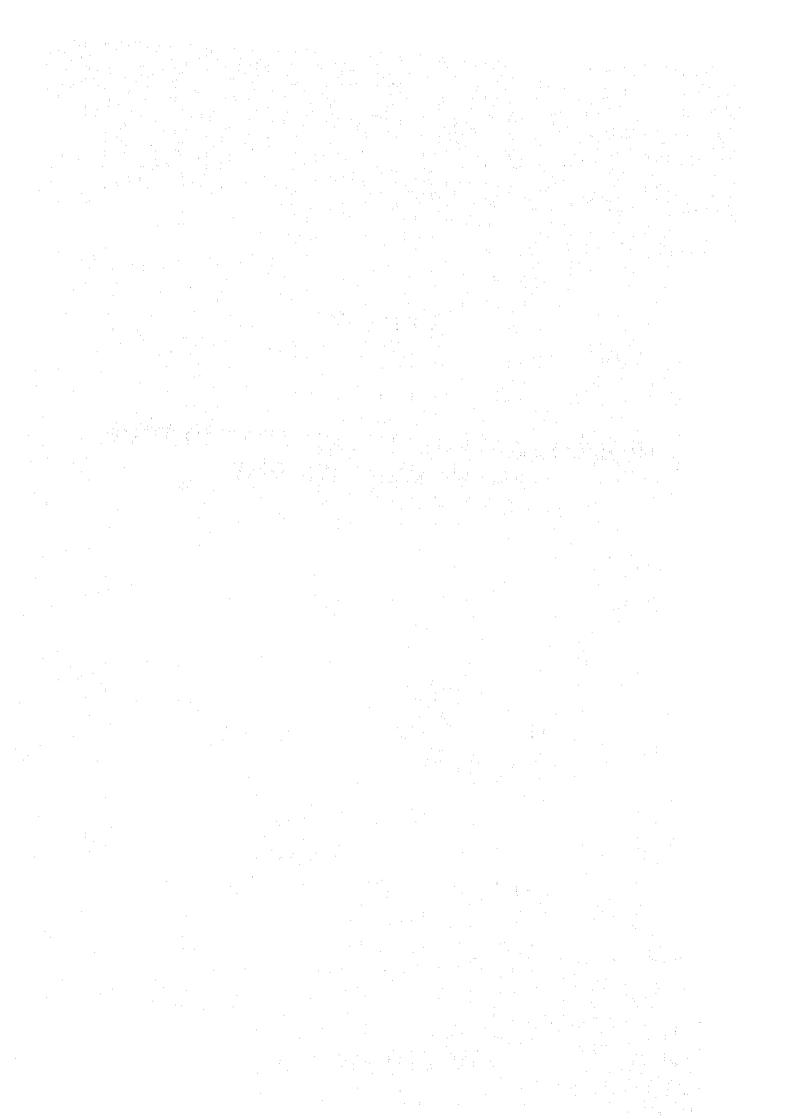
Table Crab community survey

Rio Cacerebu st.3 13th \ november \ 1992 Station Date

	Species	Sa 1	Sampling 1 2	station	ron 3	4	ŝ
		Numb.	of buz	purrow /	112		
Point 1:	Genero Uca Chasmagnathus granulata Ucides cordatus Goniopsis cruentata	나 0044	0,6,6,8 N H		0 41	юч 0.84	040H
Point 2:	gnat sis		940		540	2004	00000
Point 3:	Genero Uca Chasmagnathus granulata Ucides cordatus Goniopsis cruentata	1000	0104		04m	0490	4 4 10 90
Point 4:	Genero Uca Chasmagnathus granulata Ucides cordatus Goniopsis cruentata		0 m . N		50	0.044	l o v n
Point S:	Genero Uca Chasmagnathus granulata Ucides cordatus Goniopsis cruentata	O Ø M M 	0004		0096	144 144 144	P P P P
	Species	1	Point 3	4	<u>ه</u>	Station	- m -
	Genero Uca Chasmagnathus granulata Ucides cordatus Goniopsis cruentata	24,0 18,0 11,2 12,2 3,2 2,4 3,0 0,6	24 24 24 24 24 24 24 24 24 24 24 24 24 2	2000 2000 2004 2004 2004 2004 2004 2004	0 8 0 0 7 7 0 0 7 7 0		

PART V

NUMERICAL POLLUTION SIMULATION ON GUANABARA BAY



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1	
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1.00	Diffusion Model
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1 Ig. 5.5 X1	the object rivers of IDB/OECF program in 2010)
Fig. 5.3-9(2)	Calculated Water Quality in Case $4-2(T-P)(40\%$ Reducing T-P load from
1 lg. 5.5-7(2)	the object rivers of IDB/OECF program in 2010) $\dots \dots
Fig. 5.3-9(3)	Calculated Water Quality in Case 4–2(DO)(40% Reducing T-P load from
r_{1g} , $J.J-g(J)$	the object rivers of IDB/OECF program in 2010) $\dots \dots
Fig. 5.3-10(1)	
11g. 3.3-10(1)	the object rivers of IDB/OECF program in 2010)
Fig. 5.3-10(2)	
rig. $3.3 \approx 10(2)$	the object rivers of IDB/OECF program in 2010)
Fig. 5.3-10(3)	
rig. 5.5-10(5)	the object rivers of IDB/OECF program in 2010)
Fig. 5.3-11(1)	
$\operatorname{Ing.} J := \operatorname{Ing.} (1)$	Block C in 2010)(BOD)
Fig. 53, 11(2)	Calculated Water Quality in Case 5–1(Dredging the Sediment in
Fig. $3.3 - 11(2)$	Block C in 2010)(DO)
Eig 5 2 11(2)	Calculated Water Quality in Case 5–1(Dredging the Sediment in
rig. 5.5 - ri(5)	Block C in 2010)(T-P)
Ela 52 12(1)	Calculated Water Quality in Case 5-2(Dredging the Sediment in
rig. $3.3 - 12(1)$	
Eta 52 12(2)	Block D in 2010)(BOD)
rig. $3.3-12(2)$	
Eta 5.2 12(2)	Block D in 2010)(DO)
rig. 5.5~12(5)	Calculated Water Quality in Case 5-2(Dredging the Sediment in
Eta 52 12(1)	Block D in 2010)(T-P)
rig. $3.3 - 13(1)$	Calculated Water Quality in Case 5-3(Dredging the Sediment in
E:- 5.2 12(2)	Block E1 in 2010)(BOD)
Fig. $5.3 - 15(2)$	Calculated Water Quality in Case 5-3(Dredging the Sediment in
E' 60 10/0	Block E1 in 2010)(DO)
rig. 5.3–13(3)	Calculated Water Quality in Case 5-3(Dredging the Sediment in
	Block E1 in 2010)(T-P)
rig. 5.3-14(1)	Calculated Water Quality in Case 5-4(Dredging the Sediment in
	Block E2 in 2010)(BOD)
rig. 5.5–14(2)	Calculated Water Quality in Case 5-4(Dredging the Sediment in
Pt. 60 140	Block E2 in 2010)(DO)
rig. 5.3-14(3)	Calculated Water Quality in Case 5-4(Dredging the Sediment in
	Block E2 in 2010)(T-P) 5-67