

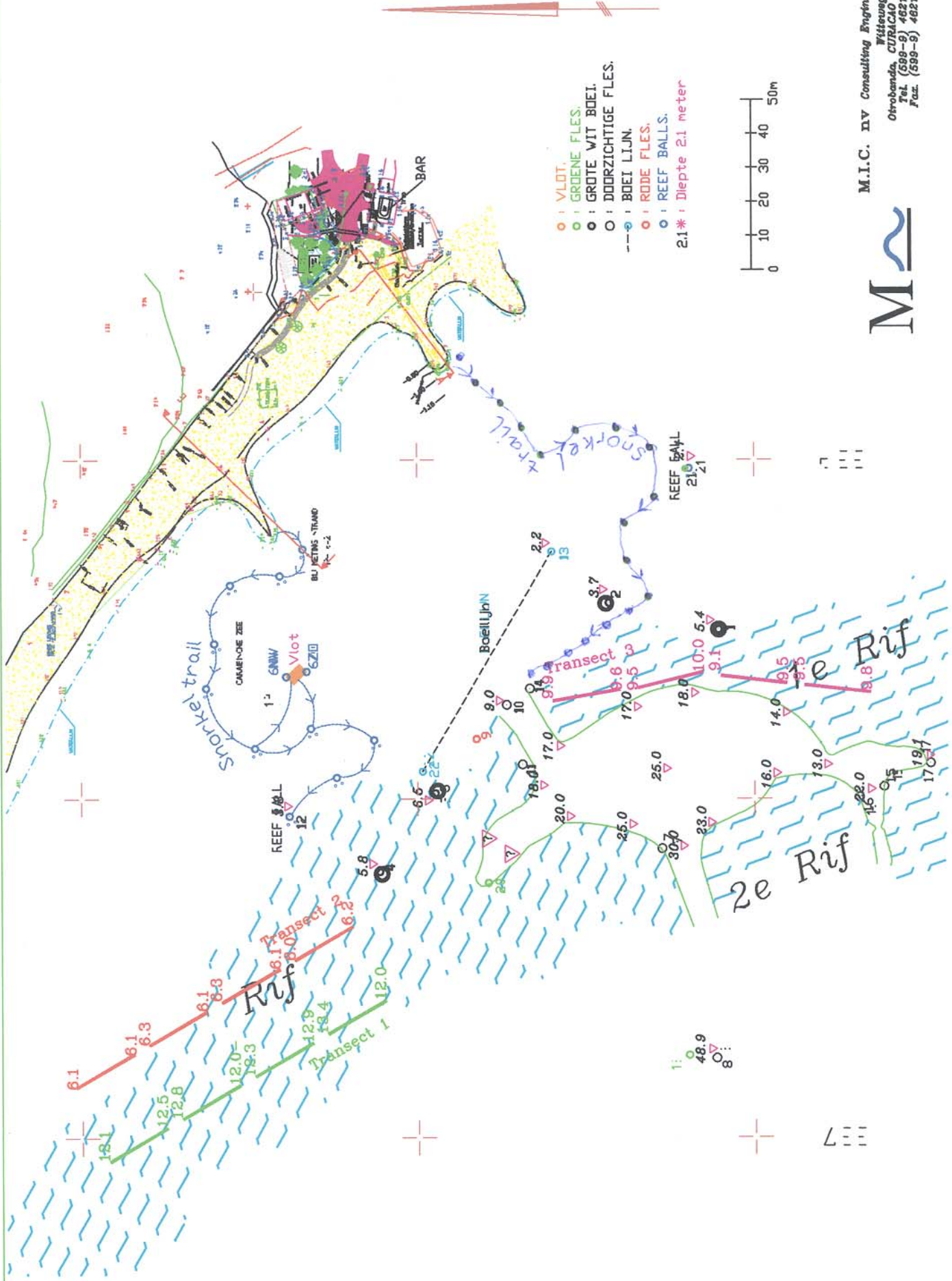
PORTOMAREA MARINE MONITORING

CORAL AND FISH/INVERTEBRATE SURVEY

by

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January 2003



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PORTOMAREA MARINE MONITORING

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PORTOMAREA MARINE MONITORING

FISH/INVERTEBRATE AND CORAL SURVEY OVERVIEW

Survey dates: January 6 - 22, 2003.

Data observed and recorded by: Marjo van den Bulck

During 2003 there will be two monitoring periods in stead of the quarterly periods in 2002. These periods will be in January and in July.

This was advised by Mr. Paul Hoetjes after reviewing the data collected in 2002. Mr. Paul Hoetjes is the senior scientist of the Netherlands Antilles Coral Reef Initiative (NACRI) and the Ministry of Health and Social Development in the Department of Environment and Nature (MINA).

WATER TEMPERATURE & VISIBILITY

Cloud cover was moderate on most days during this monitoring period.

Water temperature was 26C during this monitoring period.

Visibility varied from 15m to 20m. Average visibility 17,5m.

This period there was hardly any current.

TRANSECTS

Three (3) transect lines 95m long were set up for the coral line and fish/invertebrate belt surveys. Each line was divided into four 20m sections with 5m intervals, in accordance with accepted monitoring practices. Transect numbers 1 and 2 are on the west side of the bay at depths of 12m and 6m respectively. Transect 3 is on the east side of the bay at 10m.

Coral monitoring was carried out over each 20m section with sampling points at .5m intervals.

Fish/invertebrate monitoring was done over a contiguous 5m-wide 'belt' along 20m sections of the above described transect lines.

Detailed transect setup information can be found in the PortoMarea Marine Monitoring Manual.

For the first time since we started monitoring all the rebar's we used to mark our Transects were still there.

CORAL MONITORING

Health

The overall general condition of the reef reflects the damage sustained in 1999 from Hurricane Lenny. Large boulder corals were overturned, and the corals subsequently died off.

Transects 1 and 2, on the west side of the bay exhibit some regeneration, e.g. new maze and mustard hill corals have begun to grow on the old dead coral boulders.

Transect 2 is basically a shallow patch reef, and the high percentage of sand cover reflects between coral patches.

Damage

Signs of recent damage, e.g. broken hard corals, were recorded along Transect 1. It is assumed that this damage is attributable to divers and fishermen anchoring.

FISH/INVERTEBRATE SURVEY

There are fluctuations in the Fish/Invertebrate population on the transects. For details check page 22 of this Survey report.

REEF BALL CLUSTERS

There are 2 snorkel trails laid out, consisting of 10 reef ball clusters on the west side of the bay at depths ranging from 1.2 to 3.8m, and 12 clusters on the east side of the bay at depths from 1.5 to 4.3m.

On April 6, 2002, 6 additional reef ball clusters (approximately 100 balls) were placed on the east side of the bay along the top edge of the inner reef, at an average depth of 4.3m. This brings the total number of clusters to 18.

Most of the Reef Balls show new coral growth. Especially on the west side of the bay new coral growth is clearly visible.

CORAL PLUGS

On February 8, 2002, six (6) varied coral plugs, incorporating a new transplant method, were planted on Cluster 12L. Twenty-four (24) Staghorn coral plugs were planted on Cluster 12L on March 23, 2002. These new plugs have been included in the report.

Compared to the observations in the July 2002 survey period a number of plugs then considered dead where in fact still alive: 10R-23LP Finger coral, 10R-9P Finger coral, 10R-17P Leaf (lettuce), 10R-18LP Mustard Hill, 12L-2P Pencil.

One pencil coral plug, 12L-2P, overlooked in the number of original plugs has been added to the data.

One black sea rod plug, overlooked in the October 2002 survey has been added to the data.

The broken off staghorn pieces that were found at Cluster 10R are still alive and placed in a Reef ball.

FISH/INVERTEBRATE SURVEY - OBSERVATIONS

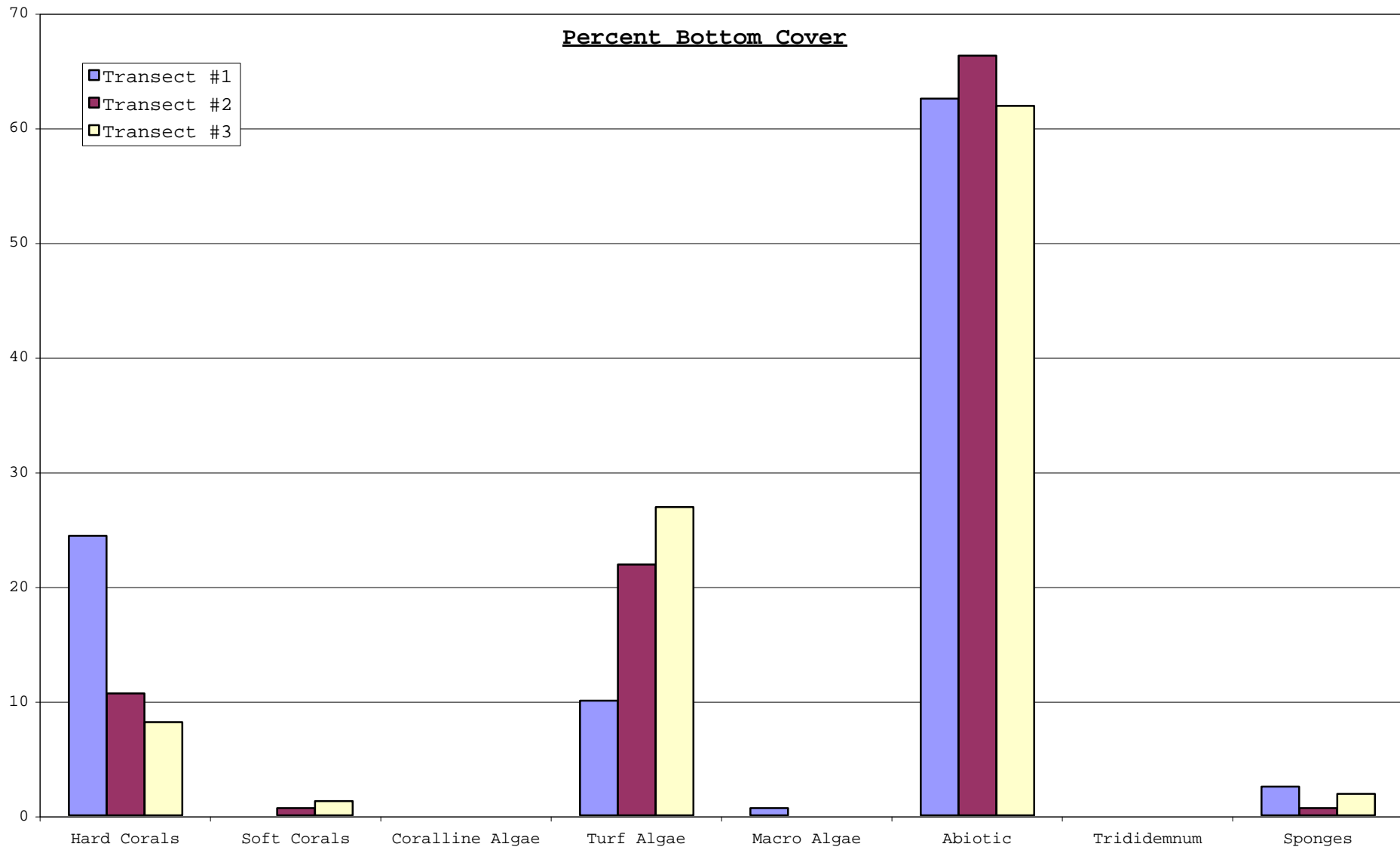
Compared to the July survey period more Invertebrates and fish were found on the Reef Ball Cluster on the west side of the Bay.

PORTOMAREA MARINE MONITORING
CORAL LINE TRANSECT SUMMARY

Date : January 15, 2003
Observer: Marjo van den Bulck

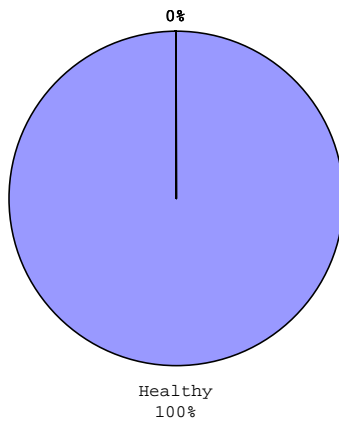
Transect No.	Depth	Hard Corals						Soft Corals	Coralline Algae	Turf Algae	Macro-Algae	Abiotic (Sand)	Trididem-num	Sponges	Total
		Total	Healthy	(Prt)Dead	Sick	Broken	Bleached								
1	12m														
	0-20m	13	13	0	0	0	0	0	5	1	19	0	2	40	
	25-45m	12	12	0	0	0	0	0	2	0	25	0	1	40	
	50-70m	7	7	0	0	0	0	0	4	0	29	0	0	40	
	75-95m	7	7	0	0	0	0	0	5	0	27	0	1	40	
	Mean	10	10	0	0	0	0	0	4	0	25	0	1	40	
	% cover	24	100	0	0	0	0	0	10	1	63	0	3	100	
	standard deviation	3.20	3.20	0.00	0.00	0.00	0.00	0.00	1.41	0.50	4.32	0.00	0.82	0.00	
Transect No.	Depth	Hard Corals						Soft Corals	Coralline Algae	Turf Algae	Macro-Algae	Abiotic (Sand)	Trididem-num	Sponges	Total
		Total	Healthy	(Prt)Dead	Sick	Broken	Bleached								
2	6m														
	0-20m	3	3	0	0	0	0	0	9	0	28	0	0	40	
	25-45m	1	1	0	0	0	0	0	18	0	21	0	0	40	
	50-70m	11	11	0	0	0	0	0	4	0	25	0	0	40	
	75-95m	2	2	0	0	0	0	1	4	0	32	0	1	40	
	Mean	4	4	0	0	0	0	0	9	0	27	0	0	40	
	% cover	11	100	0	0	0	0	1	22	0	66	0	1	100	
	standard deviation	4.57	4.57	0.00	0.00	0.00	0.00	0.50	6.60	0.00	4.65	0.00	0.50	0.00	
Transect No.	Depth	Hard Corals						Soft Corals	Coralline Algae	Turf Algae	Macro-Algae	Abiotic (Sand)	Trididem-num	Sponges	Total
		Total	Healthy	(Prt)Dead	Sick	Broken	Bleached								
3	10m														
	0-20m	9	8	1	0	0	0	1	8	0	21	0	1	40	
	25-45m	1	1	0	0	0	0	1	11	0	25	0	2	40	
	50-70m	1	1	0	0	0	0	0	13	0	26	0	0	40	
	75-95m	2	2	0	0	0	0	0	11	0	27	0	0	40	
	Mean	3	3	0	0	0	0	1	11	0	25	0	1	40	
	% cover	8	92	8	0	0	0	1	27	0	62	0	2	100	
	standard deviation	3.86	3.37	0.50	0.00	0.00	0.00	0.58	2.06	0.00	2.63	0.00	0.96	0.00	

PORTOMAREA MARINE MONITORING
CORAL LINE TRANSECT SUMMARY

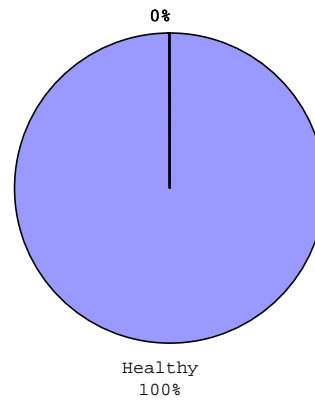


PORTOMAREA MARINE MONITORING
CORAL LINE TRANSECTS - CORAL HEALTH CHART

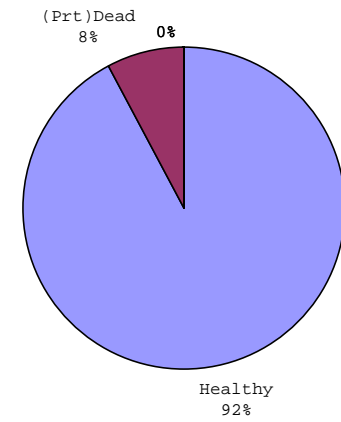
Transect 1, Depth 12m



Transect 2, Depth 6m



Transect 3, Depth 10m



PORTOMAREA MARINE MONITORING

CORAL LINE TRANSECT

Transect No: 1, Depth 12m, Section 0-20m
Date: Jan. 6, 2003

Visibility: 15 m
Temperature: 26C

Observer: Marjo van den Bulck

M	HARD CORALS								CONDITION/REMARKS	SOFT CORALS						
	Branching	Mound	Star	Brain	Finger	Leaf	Fire Coral	Other Coral		Coarctarians	Sponges	Trididemnum	Coralline A	Macro Algae	Algae	Abiotics
0.5																SD
1																SD
1.5			Boulder						Healthy							
2															TA	
2.5																RC
3																RC
3.5																RC
4			Boulder						Healthy							
4.5			Boulder						Healthy							
5			Boulder						Healthy							
5.5																RC
6																RC
6.5																SD
7																SD
7.5																RB
8		Mustard hill							Healthy							
8.5								Flower	Healthy							
9						Lettuce			Healthy							
9.5																RC
10																RC
10.5													MA			
11																SD
11.5																SD
12																RC
12.5						Lettuce			Healthy							
13								Flower	Healthy							
13.5			Boulder						Healthy							
14																RC
14.5			Boulder						Healthy							
15									Branching tube		YE					
15.5									Branching tube		YE					
16						Lettuce			Healthy							
16.5																TA
17									TA							MA
17.5																RC
18			Great						Healthy							
18.5																SD
19																BA
19.5																RC
20																BA
Total	0	1	7	0	0	3	0	2	0	13	0	0	0	0	2	19
	0	2	15	4	3	9	1	5	0	39	0	0	0	0	4	100

Substrate Codes:

PD	(Partially) Dead	RC	Rock	YA	Y Algae	BRO	Brown
H	Healthy	RB	Rubble	TA	Turf Algae	YE	Yellow
S	Sick	SD	Sand	BA	Blue Green Algae	PU	Purple
BL	Bleached	MA	Macro Algae	CA	Coralline Algae		
				TR	Trididemnum		

PORTOMAREA MARINE MONITORING

CORAL LINE TRANSECT

Transect No: 1, Depth: 12m, Section 25-45m Visibility: 15 m Observer: Marjo van den Bulck
 Date: Jan. 6, 2003 Temperature: 26C

M	HARD CORALS								CONDITION/REMARKS	SOFT CORALS/OTHER							
	Branching	Mound	Star	Brain	Finger	Leaf	Fire Coral	Other Coral		Gorgonians	Sponges	Trididemnum	Coralline A	Macro Algae	Algae	Abiotics	
0.5									BA							RC	
1																SD	
1.5																SD	
2																SD	
2.5																SD	
3																RC	
3.5				Brain					Healthy								
4																RC	
4.5																RC	
5						Lettuce			Healthy								
5.5																RC	
6				Brain					Healthy								
6.5															YA		
7					Finger				Healthy								
7.5									Tube Sponge		PU						
8																RC	
8.5					Finger				Healthy								
9																RC	
9.5																RC	
10																SD	
10.5																RB	
11															YA		
11.5								Flower	Healthy								
12																RC	
12.5																RC	
13																RB	
13.5																RB	
14																SD	
14.5		Mustard hill							Healthy								
15																RC	
15.5						Lettuce			Healthy								
16																RC	
16.5																SD	
17																RB	
17.5				Boulder					Healthy								
18				Boulder					Healthy								
18.5				Brain					Healthy								
19																RC	
19.5								Flower	Healthy								
20																RC	
Total	0	1	2	3	2	2	0	2		0	12	0	0	0	0	2	25

Substrate Codes:

PD	(Partially) Dead	RC	Rock	YA	Y Algae	BRO	Brown
H	Healthy	RB	Rubble	TA	Turf Algae	YE	Yellow
S	Sick	SD	Sand	BA	Blue Green Algae	PU	Purple
BL	Bleached	MA	Macro Algae	CA	Coralline Algae		
				TR	Trididemnum		

PORTOMAREA MARINE MONITORING

CORAL LINE TRANSECT

Transect No: 1, Depth 12m, Section 50-70m Visibility: 10 m Observer: Marjo van den Bulck
 Date: Jan. 7, 2003 Temperature: 26C

M	HARD CORALS								CONDITION/REMARKS	SOFT CORALS/OTHER								
	Branching	Mound	Star	Brain	Finger	Leaf	Fire Coral	Other Coral		Gorgonians	Sponges	Trididemnum	Coralline A	Macro Algae	Algae	Abiotics		
0.5							Fire		Healthy							RB		
1																		
1.5			Boulder						Healthy									
2																RB		
2.5																YA		
3																RB		
3.5			Boulder						Healthy									
4								Flower	Healthy									
4.5																RB		
5						Lettuce			Healthy									
5.5																RC		
6																RB		
6.5																RC		
7																SD		
7.5																SD		
8																SD		
8.5																SD		
9																SD		
9.5																SD		
10				Brain					Healthy									
10.5																RC		
11			Boulder						Healthy									
11.5																RC		
12																RC		
12.5																RC		
13									BA							MA		
13.5									BA							MA		
14																RC		
14.5																YA		
15																RB		
15.5																SD		
16																RB		
16.5																SD		
17																SD		
17.5																SD		
18																SD		
18.5																SD		
19																SD		
19.5																SD		
20																SD		
Total	0	0	3	1	0	1	1	1	1	0	7	0	0	0	0	0	4	29

Substrate Codes:

PD	(Partially) Dead	RC	Rock	YA	Y Algae	BRO	Brown
H	Healthy	RB	Rubble	TA	Turf Algae	YE	Yellow
S	Sick	SD	Sand	BA	Blue Green Algae	PU	Purple
BL	Bleached	MA	Macro Algae	CA	Coralline Algae		
				TR	Trididemnum		

PORTOMAREA MARINE MONITORING

CORAL LINE TRANSECT

Transect No: 1, Depth 12m, Section 75-95m

Visibility: 10 m

Observer: Marjo van den Bulck

Date: Jan. 7, 2003

Temperature: 26C

M	HARD CORALS								CONDITION/REMARKS	SOFT CORALS/OTHER							
	Branching	Mound	Star	Brain	Finger	Leaf	Fire Coral	Other Coral		Gorgonians	Sponges	Trididemnum	Coralline A	Macro Algae	Algae	Abiotics	
0.5																SD	
1																SD	
1.5																SD	
2																RC	
2.5																RB	
3																RC	
3.5															BA		
4			Boulder						Healthy								
4.5			Smooth						Healthy								
5																SD	
5.5																RC	
6						Lettuce			Healthy								
6.5																RC	
7																RB	
7.5																RB	
8									Brown Sponge		BRO						
8.5																SD	
9																SD	
9.5						Lettuce			Healthy								
10														YA			
10.5																RC	
11																RB	
11.5																RC	
12																RC	
12.5														YA			
13						Lettuce			Healthy								
13.5					Finger				Healthy								
14																RB	
14.5														BA			
15									YA							RC	
15.5																SD	
16																SD	
16.5																SD	
17			Boulder						Healthy								
17.5														YA			
18																RC	
18.5																RB	
19																SD	
19.5																SD	
20																SD	
Total	0	0	3	0	1	3	0	0	0	0	7	0	0	0	0	5	27

Substrate Codes:

PD	(Partially) Dead	RC	Rock	YA	Y Algae	BRO	Brown
H	Healthy	RB	Rubble	TA	Turf Algae	YE	Yellow
S	Sick	SD	Sand	BA	Blue Green Algae	PU	Purple
BL	Bleached	MA	Macro Algae	CA	Coralline Algae		
				TR	Trididemnum		

PORTOMAREA MARINE MONITORING

CORAL LINE TRANSECT

Transect No: 2, Depth 6m, Section 0-20m Visibility: 20 m Observer: Marjo van den Bulck
 Date: Jan. 10, 2003 Temperature: 26C

M	HARD CORALS								CONDITION/REMARKS	SOFT CORALS/OTHER							
	Branching	Mound	Star	Brain	Finger	Leaf	Fire Coral	Other Coral		Gorgonians	Sponges	Trididemnum	Coralline A	Macro Algae	Algae	Abiotics	
0.5														YA			
1														TA			
1.5															RB		
2															RB		
2.5				Brain					Healthy								
3								Starlet	Healthy, Lesser Starlet								
3.5														TA			
4															RC		
4.5									YA					MA			
5														YA			
5.5															RB		
6															RB		
6.5															RB		
7															SD		
7.5															SD		
8															RB		
8.5														YA			
9															RB		
9.5															RB		
10															SD		
10.5									YA					MA			
11															RC		
11.5															RC		
12															RB		
12.5															RB		
13															RC		
13.5														YA			
14			Smooth						Healthy								
14.5															SD		
15															RB		
15.5															RB		
16															RB		
16.5															SD		
17															RB		
17.5															SD		
18															SD		
18.5														YA			
19															RB		
19.5															RB		
20															RB		
Total	0	0	1	1	0	0	0	0	1	0	3	0	0	0	9	28	
	0	4	6	4	0	0	2	1	0	17	0	0	0	1	1	0	0
										1	1	0	0	0	35	106	GRAND TOTAL

Substrate Codes:

PD	(Partially) Dead	RC	Rock	YA	Y Algae	BRO	Brown
H	Healthy	RB	Rubble	TA	Turf Algae	YE	Yellow
S	Sick	SD	Sand	BA	Blue Green Algae	PU	Purple
BL	Bleached	MA	Macro Algae	CA	Coralline Algae		
				TR	Trididemnum		

PORTOMAREA MARINE MONITORING

CORAL LINE TRANSECT

Transect No: 2, Depth 6m, Section 25-45m
Date: Jan. 10, 2003

Visibility: 20 m
Temperature: 26C

Observer: Marjo van den Bulck

M	HARD CORALS								CONDITION/REMARKS	SOFT CORALS/OTHER							
	Branching	Mound	Star	Brain	Finger	Leaf	Fire Coral	Other Coral		Gorgonians	Sponges	Trididemnum	Coralline A	Macro Algae	Algae	Abiotics	
0.5		Mustard							Healthy								
1																RB	
1.5																TA	
2																TA	
2.5																YA	
3																TA	
3.5																RB	
4																YA	
4.5									YA							MA	
5																SD	
5.5																YA/TA	
6																YA	
6.5																YA	
7																YA	
7.5																YA	
8									YA							MA	
8.5																RB	
9																RB	
9.5																RB	
10																RB	
10.5																RB	
11																YA	
11.5																RB	
12																SD	
12.5																RB	
13																RB	
13.5																RB	
14																RC	
14.5																YA	
15																TA	
15.5																RB	
16																SD	
16.5																TA	
17																TA	
17.5																TA	
18																RB	
18.5																RB	
19																RB	
19.5																RB	
20																RB	
Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	18	21

Substrate Codes:

PD (Partially) Dead	RC Rock	YA Y Algae	BRO Brown
H Healthy	RB Rubble	TA Turf Algae	YE Yellow
S Sick	SD Sand	BA Blue Green Algae	PU Purple
BL Bleached	MA Macro Algae	CA Coralline Algae	
		TR Trididemnum	

PORTOMAREA MARINE MONITORING

CORAL LINE TRANSECT

Transect No: 2, Depth 6m, Section 50-70m Visibility: 20 m Observer: Marjo van den Bulck
 Date: Jan. 10, 2003 Temperature: 26C

M	HARD CORALS							CONDITION/REMARKS	SOFT CORALS/OTHER							
	Mound	Star	Brain	Finger	Leaf	Fire Coral	Other Coral		Gorgonians	Sponges	Trididemnum	Coralline A	Macro Algae	Algae	Abiotics	
0.5															RB	
1															SD	
1.5	Mustard							Healthy								
2															SD	
2.5															RC	
3															RB	
3.5															RB	
4		Boulder						Healthy								
4.5															RB	
5															RC	
5.5															RC	
6		Boulder						Healthy								
6.5						Fire		Healthy								
7															RC	
7.5		Boulder						Healthy								
8		Boulder						Healthy								
8.5	Mustard							Healthy								
9															SD	
9.5															RB	
10															RC	
10.5															RB	
11			Brain					Healthy								
11.5															RB	
12															RC	
12.5															SD	
13															SD	
13.5															RB	
14															RB	
14.5															RB	
15	Mustard							Healthy								
15.5															TA	
16															TA	
16.5															SD	
17		Boulder						Healthy								
17.5															TA	
18															TA	
18.5															RB	
19															SD	
19.5						Fire		Healthy								
20															SD	
Total	0	3	5	1	0	0	2	0	0	11	0	0	0	0	4	25

Substrate Codes:

PD	(Partially) Dead	RC	Rock	YA	Y Algae	BRO	Brown
H	Healthy	RB	Rubble	TA	Turf Algae	YE	Yellow
S	Sick	SD	Sand	BA	Blue Green Algae	PU	Purple
BL	Bleached	MA	Macro Algae	CA	Coralline Algae		
				TR	Trididemnum		

PORTOMAREA MARINE MONITORING

CORAL LINE TRANSECT

Transect No: 2, Depth 6m, Section 75-95m Visibility: 20 m Observer: Marjo van den Bulck
 Date: Jan. 10, 2003 Temperature: 26C

M	HARD CORALS								CONDITION/REMARKS	SOFT CORALS/OTHER							
	Branching	Mound	Star	Brain	Finger	Leaf	Fire Coral	Other Coral		Gorgonians	Sponges	Trididemnum	Coralline A	Macro Algae	Algae	Abiotics	
0.5																SD	
1																RB	
1.5				Brain					Healthy								
2																RB	
2.5																SD	
3														YA			
3.5																RC	
4																RC	
4.5																RC	
5									Purple Sea Rod	PU							
5.5																RC	
6																RC	
6.5										SPO							
7				Brain					Healthy								
7.5																RC	
8																RB	
8.5																SD	
9																SD	
9.5														TA			
10																RB	
10.5																RB	
11																RC	
11.5																SD	
12														YA			
12.5																SD	
13																SD	
13.5																SD	
14																RC	
14.5																SD	
15																SD	
15.5																RC	
16																RB	
16.5																RB	
17																RC	
17.5																RC	
18														YA			
18.5																RB	
19																RB	
19.5																RB	
20																RC	
Total	0	0	0	2	0	0	0	0			1	1	0	0	0	4	32

Substrate Codes:

PD	(Partially) Dead	RC	Rock	YA	Y Algae	BRO	Brown
H	Healthy	RB	Rubble	TA	Turf Algae	YE	Yellow
S	Sick	SD	Sand	BA	Blue Green Algae	PU	Purple
BL	Bleached	MA	Macro Algae	CA	Coralline Algae		
				TR	Trididemnum		

PORTOMAREA MARINE MONITORING

CORAL LINE TRANSECT

Transect No: 3, Depth 10m, Section 0-20m

Visibility: 25 m

Observer: Marjo van den Bulck

Date: Jan. 8, 2003

Temperature: 26C

M	HARD CORALS								CONDITION/REMARKS	SOFT CORALS/OTHER							
	Branching	Mound	Star	Brain	Finger	Leaf	Fire Coral	Other Coral		Gorgonians	Sponges	Trididemnum	Coralline A	Macro Algae	Algae	Albiotics	
0.5																SD	
1															TA		
1.5									TA						MA		
2																RC	
2.5								Pencil	Dead, 10%								
3																RC	
3.5																RC	
4															BA		
4.5																RB	
5																RB	
5.5																RB	
6									TA						MA		
6.5																SD	
7																RC	
7.5																RC	
8																SD	
8.5																SD	
9						Lettuce			Healthy								
9.5			Boulder						Healthy								
10																RC	
10.5			Boulder						Healthy								
11			Boulder						Healthy								
11.5						Lettuce			Healthy								
12																RC	
12.5				Brain					Healthy								
13				Brain					Healthy								
13.5																SD	
14																SD	
14.5																SD	
15															BA		
15.5									Purple Sea Rod	PU							
16									TA						MA		
16.5																RB	
17																RC	
17.5									Brown Sponge		BRO						
18			Boulder						Healthy								
18.5																SD	
19															BA		
19.5															TA		
20																SD	
Total	0	0	4	2	0	2	0	2	1	1	8	0	0	0	8	21	
	0	1	6	2	0	2	0	2	1	12	0	0	0	0	43	99 GRAND TOTAL	

Substrate Codes:

PD	(Partially) Dead	RC	Rock	YA	Y Algae	BRO	Brown
H	Healthy	RB	Rubble	TA	Turf Algae	YE	Yellow
S	Sick	SD	Sand	BA	Blue Green Algae	PU	Purple
BL	Bleached	MA	Macro Algae	CA	Coralline Algae		
				TR	Trididemnum		

PORTOMAREA MARINE MONITORING

CORAL LINE TRANSECT

Transect No: 3, Depth 10m, Section 25-45m
Date: Jan. 8, 2003

Visibility: 25 m
Temperature: 26C

Observer: Marjo van den Bulck

M	HARD CORALS								CONDITION/REMARKS	SOFT CORALS/OTHER							
	Branching	Mound	Star	Brain	Finger	Leaf	Fire Coral	Other Coral		Gorgonians	Sponges	Trididemnum	Coralline A	Macro Algae	Algae	Abiotics	
0.5																SD	
1									TA							MA	
1.5																SD	
2																SD	
2.5																BA	
3																TA	
3.5																TA	
4																SD	
4.5																SD	
5																SD	
5.5																SD	
6			Boulder						Healthy								
6.5																RC	
7																SD	
7.5																SD	
8									TA							MA	
8.5																SD	
9																SD	
9.5																SD	
10																SD	
10.5									TA							MA	
11																TA	
11.5																TA	
12									White Sea Rod	WH							
12.5									Encrusting Sponge		SP						
13									Brown Sponge		BRO						
13.5																SD	
14																TA	
14.5																SD	
15																RB	
15.5																RB	
16																RB	
16.5																RB	
17																RB	
17.5																RC	
18																BA	
18.5																BA	
19																SD	
19.5																SD	
20																RB	
Total	0	0	1	0	0	0	0	0		0	0	1	0	0	0	11	25

Substrate Codes:

PD	(Partially) Dead	RC	Rock	YA	Y Algae	BRO	Brown
H	Healthy	RB	Rubble	TA	Turf Algae	YE	Yellow
S	Sick	SD	Sand	BA	Blue Green Algae	PU	Purple
BL	Bleached	MA	Macro Algae	CA	Coralline Algae	WH	White
				TR	Trididemnum		

PORTOMAREA MARINE MONITORING

CORAL LINE TRANSECT

Transect No: 3, Depth 10m, Section 50-70m Visibility: 25 m Observer: Marjo van den Bulck
 Date: Jan. 8, 2003 Temperature: 26C

M	HARD CORALS								CONDITION/REMARKS	SOFT CORALS/OTHER							
	Branching	Mound	Star	Brain	Finger	Leaf	Fire Coral	Other Coral		Gorgonians	Sponges	Trididemnum	Coralline A	Macro Algae	Algae	Abiotics	
0.5																SD	
1																RC	
1.5																SD	
2									TA						MA		
2.5									TA						MA		
3																SD	
3.5																SD	
4															TA		
4.5																SD	
5															TA		
5.5															TA		
6															TA		
6.5																SD	
7																SD	
7.5															TA		
8															BA		
8.5																SD	
9																RB	
9.5																SD	
10															TA		
10.5																RB	
11																SD	
11.5															TA		
12															TA		
12.5																RC	
13															TA		
13.5																RC	
14																RB	
14.5			Smooth						Healthy								
15																RC	
15.5																SD	
16																RC	
16.5															BA		
17																RC	
17.5																SD	
18																SD	
18.5																RC	
19																RC	
19.5																RB	
20																RB	
Total	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	13	26

Substrate Codes:

PD	(Partially) Dead	RC	Rock	YA	Y Algae	BRO	Brown
H	Healthy	RB	Rubble	TA	Turf Algae	YE	Yellow
S	Sick	SD	Sand	BA	Blue Green Algae	PU	Purple
BL	Bleached	MA	Macro Algae	CA	Coralline Algae		
				TR	Trididemnum		

PORTOMAREA MARINE MONITORING

CORAL LINE TRANSECT

Transect No: 3, Depth 10m, Section 75-95m Visibility: 20 m Observer: Marjo van den Bulck
 Date: Jan. 10, 2003 Temperature: 26C

M	HARD CORALS								CONDITION/REMARKS	SOFT CORALS/OTHER								
	Branching	Mound	Star	Brain	Finger	Leaf	Fire Coral	Other Coral		Gorgonians	Sponges	Trididemnum	Coralline A	Macro Algae	Algae	Abiotics		
0.5																SD		
1																RC		
1.5															TA			
2									BA						MA			
2.5																RC		
3															TA			
3.5																SD		
4		Mustard							Healthy									
4.5								Maze	Healthy									
5															TA			
5.5																SD		
6																RB		
6.5																RC		
7																RC		
7.5															YA			
8																SD		
8.5																RB		
9																RB		
9.5																RB		
10															TA			
10.5																RB		
11																SD		
11.5															YA			
12															YA			
12.5																RB		
13																RB		
13.5																RB		
14															BA			
14.5																RC		
15																RC		
15.5															YA			
16															BA			
16.5																RC		
17																RC		
17.5																RC		
18																RB		
18.5																RB		
19																RB		
19.5																SD		
20																RC		
Total	0	1	0	0	0	0	0	0	1	0	2	0	0	0	0	0	11	27

Substrate Codes:

PD	(Partially) Dead	RC	Rock	YA	Y Algae	BRO	Brown
H	Healthy	RB	Rubble	TA	Turf Algae	YE	Yellow
S	Sick	SD	Sand	BA	Blue Green Algae	PU	Purple
BL	Bleached	MA	Macro Algae	CA	Coralline Algae		
				TR	Trididemnum		

PORTOMAREA MARINE MONITORING

ATLANTIC BELT TRANSECT SUMMARY: FISH and INVERTEBRATES

January 2003

Data collected by: Marjo van den Bulck

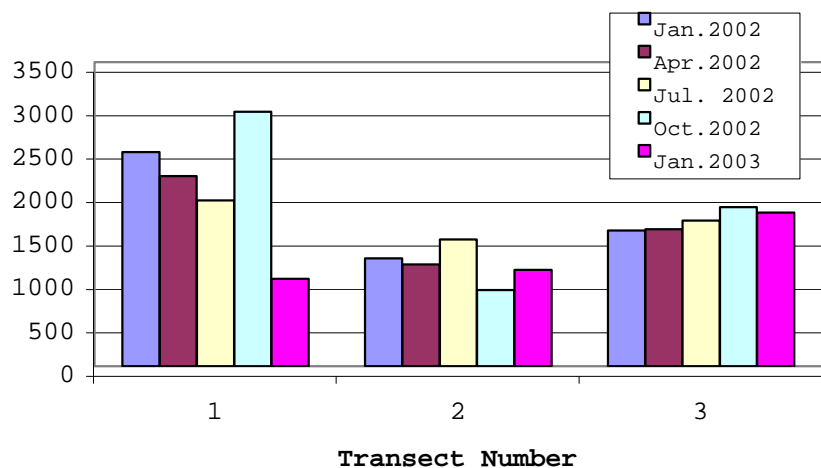
PORTOMARI Atlantic Belt Transects		West side of Bay		East side	Total	Mean	St.Dev.
Fish		Transect 1 Depth:12m	Transect 2 Depth: 6m	Transect 3 Depth:10m			
ANGELFISH	Cherubfish	1	9	1	11	3.67	4.62
	French Angelfish						
	Queen Angelfish						
	Rock Beauty	1	1	3	5	1.67	1.15
BASSLET	Fairy Basslet	8		2	10	5.00	4.24
BLENNY	Redlip Blenny		1		1	1.00	
BOXFISH	Honeycomb Cowfish	1			1	1.00	
	Smooth Trunkfish		1		1	1.00	
	Spotted Trunkfish						
BUTTERFLYFISH	Banded Butterflyfish	1	4		5	2.50	2.12
	Poureye Butterflyfish	3	5	5	13	4.33	1.15
CHROMIS	Blue Chromis	30	27	79	136	45.33	29.19
	Brown Chromis	395	102	894	1391	463.67	400.44
	Sunshinefish						
DAMSELFISH	Bicolor Damselfish	176	541	398	1115	371.67	183.92
	Cocoa Damselfish		63	2	65	32.50	43.13
	Dusky Damselfish		22	17	39	19.50	3.54
	Sergeant Major	1		7	8	4.00	4.24
	Threespot Damselfish	48	7	19	74	24.67	21.08
	Yellowtail Damselfish			11	11	11.00	
DRUM	Spotted Drum	1			1	1.00	
EEL	Goldentail Moray			2	2	2.00	
	Spotted Moray	1			1	1.00	
FILEFISH	Orangespotted Filefish	2	1		3	1.50	0.71
FLOUNDER	Peacock Flounder						
GOATFISH	Spotted Goatfish						
	Yellow Goatfish	26	7	8	41	13.67	10.69
GOBY	Bridled Goby	59	30	75	164	54.67	22.81
	Neon Goby		3	4	7	3.50	0.71
	Peppermint Goby	9	29	26	64	21.33	10.79
	Coney	2	3	10	15	5.00	4.36
GROUPE	Graysby						
	Rock Hind						
	Tiger Grouper		1		1	1.00	
GRUNT	Bluestriped Grunt						
	French Grunt	7	10	7	24	8.00	1.73
	Striped Grunt	38	1	27	66	22.00	19.00
HAMLET	Barred Hamlet	1		1	2	1.00	
	Black Hamlet						
	Butter Hamlet		1	1	2	1.00	
	Yellowtail Hamlet	2	2	7	11	3.67	2.89
HOGFISH	Spanish Hogfish	2	1	1	4	1.33	0.58
JACK	Bar Jack	1	1	4	6	2.00	1.73
PARROTFISH	Blue Parrotfish						
	Princess Parrotfish	37	15	16	68	22.67	12.42
	Queen Parrotfish	8	2	4	14	4.67	3.06
	Redband Parrotfish	12	6	6	24	8.00	3.46
	Stoplight Parrotfish	13	5	9	27	9.00	4.00
	Striped Parrotfish		7	7	14	7.00	
PUFFER	Balloonfish						
	Sharpnose Puffer	5	3	8	16	5.33	2.52
SCORPIONFISH	Spotted Scorpionfish		1	1	2	1.00	
SEABASS	Creolefish	1			1	1.00	
	Harlequin Bass	5	8	8	21	7.00	1.73
SNAPPER	Mahogany Snapper						
	Schoolmaster			1	1	1.00	
	Yellowtail Snapper	1			1	1.00	
SQUIRRELFISH	Blackbar Soldierfish	7	3	14	24	8.00	5.57
	Squirrelfish	6	4	15	25	8.33	5.86
SURGEONFISH	Blue Tang	4	3	4	11	3.67	0.58
	Doctorfish						
	Ocean Surgeon						
WRASSE	Bluehead Wrasse	52	130	29	211	70.33	52.94
	Clown Wrasse		8	1	9	4.50	4.95
	Creole Wrasse	16			16	16.00	
	Puddingwife						
	Slippery Dick		6		6	6.00	
	Yellowhead Wrasse	20	40	28	88	29.33	10.07
OTHERS	Cornetfish						
	Hawkfish, Redspotted						
	Lizardfish						
	Sand Diver	2		1	3	1.50	0.71
	Soapfish, Greater						
	Trumpetfish	4	4	3	11	3.67	0.58
TOTAL		1007	1109	1767	3883	1294.33	
Invertebrates		Transect 1 Depth:12m	Transect 2 Depth: 6m	Transect 3 Depth:10m	Total	Mean	St.Dev.
ANEMONE	Carpet Anemone						
	Corkscrew Anemone	1	4	11	16	5.33	5.13
	Giant Anemone	2	24	13	39	13.00	11.00
	Knobby Anemone	34	27	15	76	25.33	9.61
TUBE WORMS	Christmas tree Worms	265	563	258	1086	362.00	174.11
	Ghost Feather Duster	11			11	11.00	
	Magnificent Feather Duster	2	3	3	8	2.67	0.58
	Split Crown Feather Duster	17	20	21	58	19.33	2.08
	Star Horseshoe Worm	1	1	2	4	1.33	0.58
	Variogated Feather Duster	10	6	18	34	11.33	6.11
CRUSTACEANS	Banded Coral Shrimp			1	1	1.00	
	Heremite Crab	1			1	1.00	
	Pederson Cleaner Shrimp	14	4	4	22	7.33	5.77
	Yellowline Arrow Crab						
MOLLUSKS	Amber Pen Shell			3	3	3.00	
	Rough File Clam	1	1	1	3	1.00	
	Sea Slug, Lettuce						
	Spiny File Clam						
ECHINODERMS	Queen Conch						
	Pencil Urchin						
	Tigertail Sea Cucumber						
TOTAL		359	656	347	1362.00	454.00	

**PORTOMAREA MARINE MONITORING
FISH AND INVERTEBRATE QUARTERLY COMPARISON**

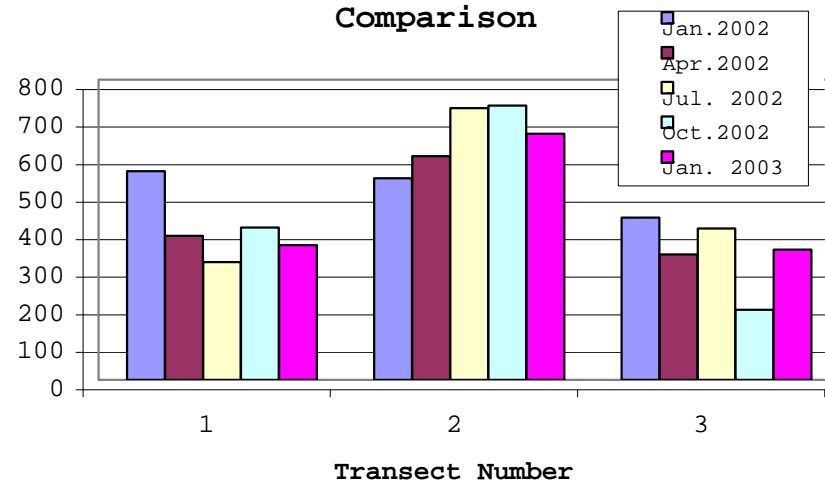
	Transect 1 - Depth 12m				Transect 2 - Depth 6m				Transect 3 - Depth 10m			
	Jan.2002	Apr. 2002	July 2002	Oct. 2002	Jan.2002	Apr. 2002	July 2002	Oct. 2002	Jan. 2002	Apr. 2002	July 2002	Oct. 2002
Fish	2466	2187	1908	2929	1241	1173	1459	877	1562	1576	1677	1830
Invertebrates	556	384	314	406	537	596	724	731	432	334	403	187

	Transect 1 - Depth 12m			Transect 2 - Depth 6m			Transect 3 - Depth 10m		
	Jan.2003		July 2003	Jan.2003		July 2003	Jan. 2003		July 2003
Fish	1007			1109			1767		
Invertebrates	359			656			347		

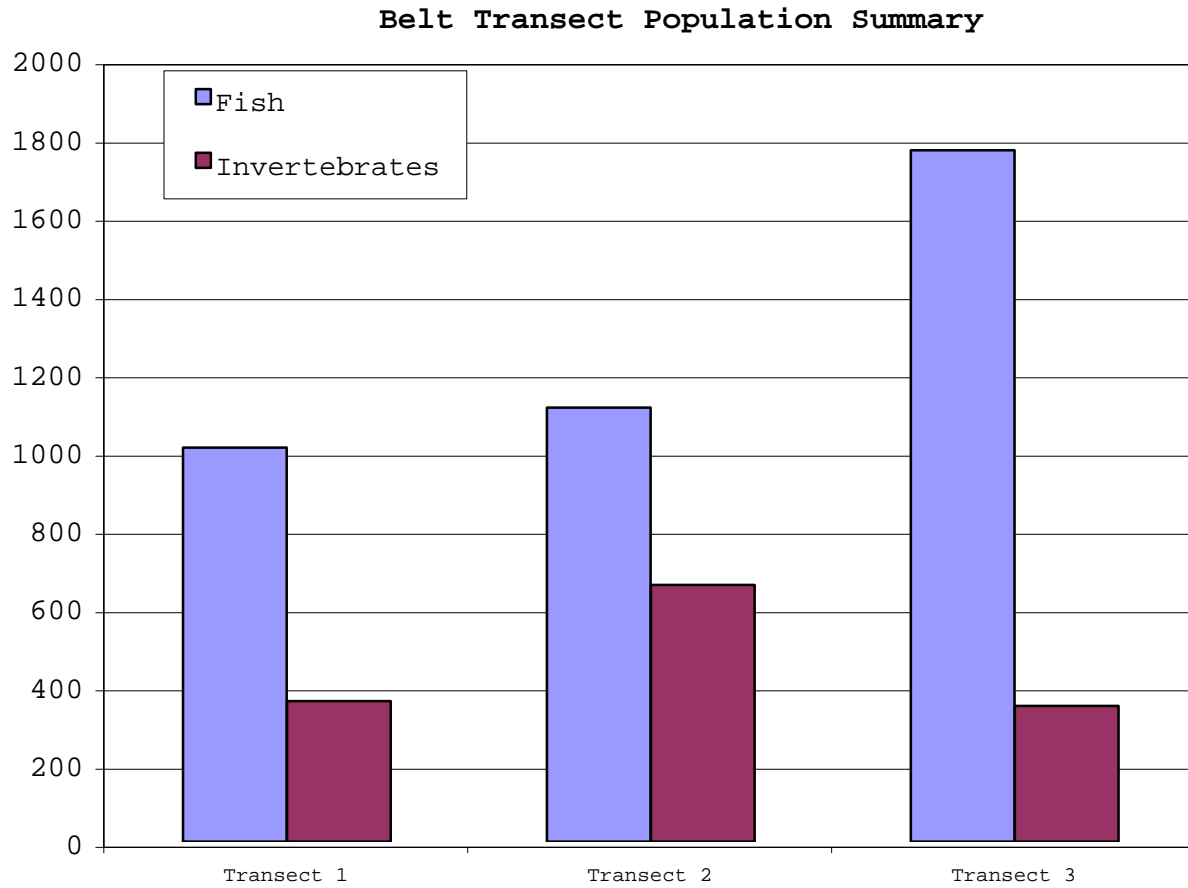
Fish Population Quarterly Comparison



Invertebrate Population Quarterly Comparison



PORTOMAREA MARINE MONITORING
ATLANTIC BELT TRANSECT FISH AND INVERTEBRATE SUMMARY



PORTOMAREA MARINE MONITORING

ATLANTIC BELT TRANSECT: FISH and INVERTEBRATES

Transect #1, Depth: 12m

Date: Jan. 6, 2003 Time: 10:40 a.m.

Data collected by: Marjo van den Bulck

Atlantic Belt Transect: Fish		0-20m	25-45m	50-70m	75-95m	Total	Mean	St.Dev.
ANGELFISH	Cherubfish		1			1	1	
	Queen Angelfish							
	Rock Beauty		1			1	1.00	
BASSLET	Fairy Basslet	1	5		2	8	2.67	2.08
BLENNY								
BOXFISH	Smooth Trunkfish							
	Honeycomb Cowfish		1			1	1.00	
BUTTERFLYFISH	Banded Butterflyfish		1			1	1	
	Foureye Butterflyfish			1	2	3	1.5	0.71
	Longsnout Butterflyfish							
CHROMIS	Blue Chromis	3	12	9	6	30	7.50	3.87
	Brown Chromis	150	75	30	140	395	98.75	56.62
DAMSELFISH	Bicolor	58	30	41	47	176	44.00	11.69
	Sergeant Major		1			1	1	
	Threespot	11	13	15	9	48	12.00	2.58
	Yellowtail							
DRUM	Spotted Drum			1		1	1	
EEL	Green Moray							
	Spotted Moray				1	1	1	
FILEFISH	Orangespotted Filefish			1	1	2	1.00	
FLOUNDER	Peacock Flounder							
GOATFISH	Yellow Goatfish	10	4	10	2	26	6.5	4.12
	Spotted Goatfish							
GOBY	Bridled Goby	20	4	15	20	59	14.75	7.54
	Neon Goby							
	Peppermint Goby	5	1	3		9	3	2.00
GROUPE	Coney	1			1	2	1.00	
	Rock Hind							
GRUNT	Bluestriped Grunt							
	French Grunt	1	3	1	2	7	1.75	0.96
	Striped Grunt	6	28	4		38	12.67	13.32
HAMLET	Barred Hamlet			1		1	1	
	Butter Hamlet							
	Yellowtail Hamlet		1		1	2	1	
HOGFISH	Spanish Hogfish	1	1			2	1.00	
JACK	Bar Jack				1	1	1	
PARROTFISH	Blue Parrotfish							
	Princess Parrotfish	9	17	3	8	37	9.25	5.80
	Queen Parrotfish	1		4	3	8	2.666667	1.53
	Redband Parrotfish	2	3	1	6	12	3.00	2.16
	Stoplight Parrotfish	3	6	3	1	13	3.25	2.06
	Striped Parrotfish							
PUFFER	Balloonfish							
	Sharpnose Puffer	3		1	1	5	1.666667	1.15
SCORPIONFISH	Spotted Scorpionfish							
SEABASS	Creole Fish							
	Harlequin Bass	1	1	1	2	5	1.25	0.50
SNAPPER	Schoolmaster							
	Yellowtail Snapper		1			1	1	
SQUIRRELFISH	Blackbar Soldierfish	2	2	2	1	7	1.75	0.50
	Squirrelfish	3	2	1		6	2	1.00
SURGEONFISH	Blue Tang	2	1	1		4	1.333333	0.58
	Doctorfish							
	Ocean Surgeon							
WRASSE	Bluehead Wrasse	24	19	4	5	52	13	10.03
	Clown Wrasse							
	Creole Wrasse	9	1	6		16	5.333333	4.04
	Slippery Dick							
	Yellowhead Wrasse	5	5	3	7	20	5.00	1.63
OTHERS	Sand Diver	1			1	2	1	
	Soapfish, greater							
	Trumpetfish		2	1	1	4	1.333333	0.58
TOTAL		332	241	163	271	1007	251.75	
Atlantic Belt Transect: Invertebrates		0-20m	25-45m	50-70m	75-100m	Total	Mean	St.Dev.
ANEMONE	Corkscrew Anemone	1				1	1.00	
	Giant Anemone	2				2	2.00	
	Knobby Anemone	14	10	7	3	34	8.5	4.65
TUBE WORMS	Christmas tree Worms	104	45	56	60	265	66.25	25.95
	Ghost Feather Duster	8		1	2	11	3.666667	3.79
	Magnificent Feather Duster				2	2	2.00	
	Split Crown Feather Duster	1	10	1	5	17	4.25	4.27
	Star Horseshoe Worm	1				1	1	
	Variegated Feather Duster	5	1	1	3	10	2.50	1.91
CRUSTACEANS	Pederson Cleaner Shrimp	9	2		3	14	4.666667	3.79
	Spotted Cleaner Shrimp							
	Heremite Crab			1		1	1	
MOLLUSKS	Rough File Clam			1		1	1	
	Queen Conch							
ECHINODERMS	Reef Urchin							
TOTAL		145	68	68	78	359	89.75	

Note: Previous observations (jan and april 2002) of Beaded Anemone are in fact Knobby Anemone.

PORTOMAREA MARINE MONITORING

ATLANTIC BELT TRANSECT: FISH and INVERTEBRATES

Transect #2, Depth: 6m

Date: Jan. 10, 2003 Time: 8:38 a.m.

Data collected by: Marjo van den Bulck

Atlantic Belt Transect: Fish		0-20m	25-45m	50-70m	75-95m	Total	Mean	St.Dev.
ANGELFISH	Cherubfish	1	6	1	1	9	2.25	2.50
	French Angelfish							
	Rock Beauty		1			1	1.00	
BASSLET								
BIGEYE								
BLENNY	Redlip Blenny	1				1	1.00	
BOXFISH	Smooth Trunkfish		1			1	1.00	
	Spotted Trunkfish							
BUTTERFLYFISH	Banded Butterflyfish		4			4	4.00	
	Four-eye Butterflyfish	5				5	5.00	
	Longsnout Butterflyfish							
CARDINALFISH								
CHROMIS	Blue Chromis		2	25		27	13.50	16.26
	Brown Chromis	32			70	102	51.00	26.87
DAMSELFISH	Bicolor Damselfish	102	220	134	85	541	135.25	60.04
	Cocoa Damselfish	55		5	3	63	21.00	29.46
	Dusky Damselfish		2	14	6	22	7.33	6.11
	Sergeant Major							
	Threespot Damselfish			2	5	7	3.50	2.12
Yellowtail Damselfish								
DRUM								
EEL	Goldentail Moray							
	Spotted Moray							
FILEFISH	Orangespotted Filefish			1		1	1.00	
FLOUNDER	Peacock Flounder							
GOATFISH	Spotted Goatfish							
	Yellow Goatfish	4		1	2	7	2.33	1.53
GOBY	Bridled Goby	10	20			30	15.00	7.07
	Neon Goby	1	2			3	1.50	0.71
	Peppermint Goby	5		11	13	29	9.67	4.16
GROUPEL	Coney	2	1			3	1.50	0.71
	Tiger Grouper	1				1	1.00	
GRUNT	Bluestriped Grunt							
	French Grunt	3	1	3	3	10	2.50	1.00
	Striped Grunt				1	1	1.00	
HAMLET	Barred Hamlet							
	Butter Hamlet			1		1	1.00	
	Yellowtail Hamlet	1			1	2	1.00	
HOGFISH	Spanish Hogfish	1				1	1.00	
JACK	Bar Jack		1			1	1.00	
PARROTFISH	Princess Parrotfish	8	2	1	4	15	3.75	3.10
	Queen Parrotfish		2			2	2.00	
	Redband Parrotfish	1	2	1	2	6	1.50	0.58
	Stoplight Parrotfish	2	2		1	5	1.67	0.58
	Striped Parrotfish	2	1		4	7	2.33	1.53
PUFFER	Sharpnose Puffer	1		1	1	3	1.00	
RAY								
SCORPIONFISH	Spotted Scorpionfish			1		1	1.00	
SEABASS	Harlequin Bass	3	3	1	1	8	2.00	1.15
SNAPPER	Schoolmaster							
SQUIRRELFISH	Blackbar Soldier				3	3	3.00	
	Squirrelfish	2		2		4	2.00	
SURGEONFISH	Blue Tang	2		1		3	1.50	0.71
	Ocean Surgeon							
WRASSE	Bluehead Wrasse	48	53	2	27	130	32.50	23.25
	Clown Wrasse	2	5		1	8	2.67	2.08
	Puddingwife							
	Slippery Dick	5		1		6	3.00	2.83
	Yellowhead Wrasse	11	12	6	11	40	10.00	2.71
OTHERS	Redspotted Hawkfish							
	Lizardfish							
	Sand Diver							
	Soapfish, Greater							
	Trumpetfish	1	1		2	4	1.33	0.58
TOTAL		311	338	214	246	1109	277.25	
Atlantic Belt Transect: Invertebrates		0-20m	25-45m	50-70m	75-100m	Total	Mean	St.Dev.
ANEMONE	Carpet Anemone				2	4	2.00	
	Corkscrew Anemone	2				2	2.00	
	Giant Anemone	10	6	2	6	24	6.00	3.27
	Knobby Anemone	4	5	13	5	27	6.75	4.19
TUBE WORMS	Christmas tree Worms	163	25	230	145	563	140.75	85.39
	Ghost Feather Duster							
	Magnificent Feather Duster	2		1		3	1.50	0.71
	Split Crown Feather Duster	5		14	1	20	6.67	6.66
	Star Horseshoe Feather D.	1				1	1.00	
	Variegated Feather Duster	3	1	2		6	2.00	1.00
CRUSTACEANS	Banded Coral Shrimp							
	Pederson Cleaner Shrimp	3		1		4	2.00	1.41
	Yellowline Arrow Crab							
MOLLUSKS	Amber Penshell	1		2		3	1.50	0.71
	Queen Conch							
ECHINODERMS	Rough Fileclam			1		1	1.00	
	Reef Urchin							
	Tigertail Sea Cucumber							
TOTAL		194	37	266	159	656	164.00	

Note: Previous observations (jan and april 2002) of Beaded Anemone are in fact Knobby Anemone.

PORTOMAREA MARINE MONITORING

ATLANTIC BELT TRANSECT: FISH and INVERTEBRATES

Transect #3, Depth: 10m

Date: Jan. 8, 2003 Time: 8:47 a.m.

Data collected and recorded by: Marjo van den Bulck

Atlantic Belt Transect: Fish		0-20m	25-45m	50-70m	75-95m	Total	Mean	St.Dev.
ANGELFISH	Cherubfish		1			1	1.00	
	French Angelfish							
	Rock Beauty	1	2			3	1.50	0.71
BARRACUDA								
BASSLET	Fairy Basslet			2		2	2.00	
BIGEYE								
BLENNY								
BOXFISH	Smooth Trunkfish							
	Spotted Trunkfish							
BUTTERFLYFISH	Four-eye Butterflyfish	1	2	2		5	1.67	0.58
	Banded Butterflyfish							
CHROMIS	Blue Chromis	13	10	50	6	79	19.75	20.37
	Brown Chromis	32	530	300	32	894	223.50	240.24
	Sunshinefish							
DAMSELFISH	Bicolor Damselfish	171	115	55	57	398	99.50	55.19
	Cocoa Damselfish			2		2	2.00	
	Dusky Damselfish	1		4	12	17	5.67	5.69
	Sergeant Major	5	2			7	3.50	2.12
	Threespot Damselfish	15	2	2		19	6.33	7.51
	Yellowtail Damselfish		11			11	11.00	
DRUM								
EEL	Goldentail Moray	1			1	2	1.00	
	Spotted Moray							
FILEFISH	Orangespotted Filefish							
FLOUNDER	Peacock Flounder							
GOATFISH	Spotted Goatfish							
	Yellow Goatfish	8				8	8.00	
GOBY	Bridled Goby	20	20	30	5	75	18.75	10.31
	Neon Goby		3		1	4	2.00	1.41
	Peppermint Goby	8	7	5	6	26	6.50	1.29
			3	3	1	3	10	2.50
GROUPER	Coney							
	Graysby							
	Rock Hind							
	Tiger Grouper							
GRUNT	Bluestriped Grunt							
	French Grunt	2	1	2	2	7	1.75	0.50
	Striped Grunt	27				27	27.00	
HAMLET	Barred Hamlet		1			1	1.00	
	Butter Hamlet			1		1	1.00	
	Yellowtail Hamlet	1	3	2	1	7	1.75	0.96
HOGFISH	Spanish Hogfish			1		1	1.00	
JACK	Bar Jack		3	1		4	2.00	1.41
PARROTFISH	Blue Parrotfish							
	Princess Parrotfish	8	4	2	2	16	4.00	2.83
	Queen Parrotfish	1	1		2	4	1.33	0.58
	Redband Parrotfish	1	2	1	2	6	1.50	0.58
	Stoplight Parrotfish	3	5		1	9	3.00	2.00
	Striped Parrotfish	3	4			7	3.50	0.71
PUFFER	Sharpnose Puffer	2	2	2	2	8	2.00	
RAY								
SCORPIONFISH	Spotted Scorpionfish				1	1	1.00	
SEABASS	Creolefish			1		1	1.00	
	Harlequin Bass	2		1	5	8	2.67	2.08
SNAPPER	Mahogany Snapper							
	Schoolmaster		1			1	1.00	
SQUIRRELFISH	Blackbar Soldierfish	13		1		14	7.00	8.49
	Squirrelfish	4	3	4	4	15	3.75	0.50
SURGEONFISH	Blue Tang		1	1	2	4	1.33	0.58
	Doctorfish							
	Ocean Surgeon							
WRASSE	Bluehead Wrasse	6	6	16	1	29	7.25	6.29
	Clown Wrasse		1			1	1.00	
	Creole Wrasse							
	Puddingwife							
	Slippery Dick							
	Yellowhead Wrasse	7	9	7	5	28	7.00	1.63
OTHERS	Sand Diver				1	1	1.00	
	Trumpetfish	1		1	1	3	1.00	
TOTAL		360	755	497	155	1767	441.75	
Atlantic Belt Transect: Invertebrates		0-20m	25-45m	50-70m	75-100m	Total	Mean	St.Dev.
ANEMONE	Carpet Anemone							
	Corkscrew Anemone	1	1	7	2	11	2.75	2.87
	Giant Anemone	5	4	3	1	13	3.25	1.71
	Knobby Anemone	5	1	7	2	15	3.75	2.75
TUBE WORMS	Christmas tree Worm	97	28	45	88	258	64.50	33.27
	Magnificent Feather Duster			1	2	3	1.50	0.71
	Split Crown Feather Duster	2		3	16	21	7.00	7.81
	Star Horseshoe Worm			2		2	2.00	
	Variagated Feather Duster	1		7	10	18	6.00	4.58
CRUSTACEANS	Banded Coral Shrimp	1				1	1.00	
	Pederson Cleaner Shrimp			3	1	4	2.00	1.41
	Red Snapping Shrimp							
	Yellowline Arrow Crab							
MOLLUSKS	File Clam	1				1	1.00	
ECHINODERMS	Tigertail seacucumber							
TOTAL		113	34	78	122	347	86.75	

Note: Previous observations (jan and april 2002) of Beaded Anemone are in fact Knobby Anemone.

PORTOMAREA MARINE MONITORING
REEF BALL CORAL PLUG SUMMARY-1a, WEST SIDE OF BAY

Date : January 22 , 2003
Observer: Marjo van den Bulck

CN	B N/T	LP	Coral Species	Plug Orientation		Number of Branches/ Cups	Height cm	Width cm	Coral Growth on Plug Base Y/N	Algae at Base Y/N	Algae at Top Y/N	Remarks
				position	height							
10 R	1 P	5	Leaf coral (lettuce)	NE	T	1	3	4.5	N	Y	N	New coral growth on this ball Two branches and base are dead.
			Leaf coral (lettuce)	NW	M	1	2.5	3.5	Y	N	N	
			Leaf coral (lettuce)	N	M	GONE						
			Sea Rod, black	W	M	2	13	10	N	Y	Y	
			Sea Rod, purple	SE	H	12	12	10	Y	Y	N	
			Staghorn coral	W	T	61	27	39	Y	Y	N	
10 R	2 LP	2	Sea Rod, black	S	M	3	21	13	Y	N	Y	Recovering.
			Star Coral, smooth	SW	H		3.5	4.5	N	N	N	New coral growth on this ball
10R	3 P	3	Maze coral	NW	L	DEAD						New coral growth on this ball
			Sea Rod, purple	W	T	9	14	8	Y	N	N	
			Staghorn coral	NE	T	13	15	17.5	Y	N	N	
			Star coral	NE	H		4	7	Y	N	N	
10 R	4 O	1	Finger coral	W	L	6	16	7	Y	Y	Y	Covered in Algae New coral growth on this ball
10R	5 O	0	Sea Rod, purple	NE	H	DEAD	Covered in Algae					No new coral growth on this ball
			Sea Rod, white	NW	M	DEAD	Covered in Algae					
			Sea Rod, white	SW	H	DEAD	Covered in Algae					
			Staghorn coral	S	M	DEAD	Covered in Algae					
10R	6 LP	0	Sea Rod, purple	NE	M	GONE	Covered in Algae					Rest from a broken off Staghorn lying in this
			Sea Rod, purple	SE	M	GONE	Covered in Algae					
			Sea Rod, white	W	H	DEAD	Covered in Algae					
			Sea Rod, white	NW	M	GONE	Covered in Algae					
10R	7 O	0	No Plugs on this ball									
10R	8 P	7	Leaf coral (lettuce)	NE	H		1	2	Covered in Algae			ALGAE ON THIS BALL
			Sea Rod, black	SE	H	4	19	10.5	Y	Y	N	New coral growth on this ball Hanging in the plug hole, not steady.
			Sea Rod, black	SE	M	7	19	13	Y	Y	N	
			Sea Rod, black	S	M	3	22	8.5	Y	Y	N	
			Sea Rod, white	E	H	54	16	21	Y	N	N	
			Staghorn coral	S	T	GONE						
			Staghorn coral	SW	T	29	14	23	N	N	N	
			Staghorn coral	W	T	29	21	23	Y	N	N	
Subtotal			18 Number of live coral plugs									
Codes:												
CN	Cluster Number	U	Ultra Ball	T	Top of the ball							
B N/T	Ball number/type	P	Pallet Ball	H	Upper third of the ball							
LP	No. of live coral plugs	B	Bay Ball	M	Middle third of the ball							
		LP	LoPro Ball	L	Lower third of the ball							
		O	Oyster Ball									

PORTOMAREA MARINE MONITORING

REEF BALL CORAL PLUG SUMMARY-1b

CN	B N/T	LP	Coral Species	Plug Orientation		Number of Branches/ Cups	Height cm	Width cm	Coral Growth on Plug Base Y/N	Algae at Base Y/N	Algae at Top Y/N	Remarks
				position	height							
10R	9 P	1	Finger coral	N	1-on oyste	5	3.5	8	Y	Y	Y	ALGAE ON THIS BALL
			Finger coral	NW	1-on oyste	GONE	Overgrown by Algae					New coral growth on this ball
			Finger coral	NW	M	GONE	Overgrown by Algae					
			Flower coral	NE	T	DEAD						
			Leaf coral (Lettuce	NE	M	GONE	Algae					
			Sea Rod, Black	NE	M	GONE						
10 R	10 O	1	Finger coral	NE	M	17	6	12	Y	Y	N	New coral growth on this ball
10 R	11 LP	1	Staghorn	N	H	47	30	41	Y	Y	N	New coral growth on this ball
10 R	12 LP	1	Brain coral	NW	T		6.5	8.5	N	Y	Y	New coral growth on this ball
			Flower coral	NE	H	DEAD						
			Flower coral	SE	L	DEAD						
			Mustard hill coral	S	T	GONE	Covered in Algae					
10 R	13 B	4	Leaf coral (Lettuce	N	M		2	5	Y	Y	N	ALGAE ON THIS BALL
			Sea Rod, Black	NW	H	6	18	9.5	N	Y	N	New coral growth on this ball
			Sea Rod, Black	NW	M	8	17	10	Y	Y	N	
			Staghorn	SW	H	40	23	39	Y	N	N	
10 R	14 U	13	Brain coral	N	L		3.5	5	N	N	Y	New coral growth on this ball
			Finger coral	N	M	36	6	11	Y	N	N	
			Leaf coral (Lettuce	E	M	3	4	5.5	Y	N	N	Two Lettuce corals and one Pencil coral
			Leaf coral (Lettuce	NW	L	1	3	3.5	Y	Y	N	
			Leaf coral (Lettuce	NE	M	2	3.5	4	Y	N	N	
			Leaf coral (Lettuce	SE	M	4	3	4	Y	Y	N	
			Leaf coral (Lettuce	SSE	ML	1	0.5	1	N	Y	N	
			Leaf coral (Lettuce	SSE	ML	1	3	5	Y	N	N	
			Leaf coral (Lettuce	SSE	L	1	2.5	4	Y	Y	Y	
			Leaf coral (Lettuce	SE	M	NOT FOUND						
			Leaf coral (Lettuce	SW	ML	1	2	2	N	Y	Y	
			Leaf coral (Lettuce	SW	M	1	3	4	Y	N	N	
			Pencil coral	NE	M		0.5	2	Y	N	N	
			Staghorn	S	H	24	21	28	Y	N	N	
			Staghorn	N	H	GONE						
10R	15 LP	2	Brain coral	SW	T		5	6.5	N	N	N	New coral growth on this ball
			Brain coral	SE	H		3	4.5	N	N	N	
10R	16 B	2	Brain coral	NW	H		2.5	5	N	N	N	New coral growth on this ball
			Flower coral	NE	M	1	2	1.5	N	Y	N	
10R	17 P	1	Leaf coral (lettuce)	E	M	GONE						ALGAE ON THIS BALL
			Mustard Hill coral	NW	H		1.5	2	N	Y	Y	Algae. Dying?
			Pencil coral	NW	T	DEAD						New coral growth on this ball
10R	18 LP	0	Mustard hill coral	NE	H	GONE	Algae					New coral growth on this ball
			Sea Rod, black	W	T	DEAD						
			Sea Rod, purple	NW	M	DEAD						
Subtotal			26 Number of live coral plugs									

PORTOMAREA MARINE MONITORING
REEF BALL CORAL PLUG SUMMARY-1c

CN	B N/T	LP	Coral Species	Plug Orientation		Number of Branches/ Cups	Height cm	Width cm	Coral Growth on Plug Base Y/N	Algae at Base Y/N	Algae at Top Y/N	Remarks
				position	height							
10R	19 O	0										
10R	20 O	0										
10R	21 O	0										
10R	22 LP	0										
10R	23 LP	4	Leaf coral (lettuce)	SE	H	2	2.5	4	Y	Y	N	ALGAE ON THIS BALL New coral growth on this ball
			Mustard hill	N	H	3	1	4	Y	Y	N	
			Sea rod, white	NW	H	10	9	6.5	N	Y	N	
			Sea rod, white	NW	M	9	12	7.5	N	Y	N	
			Finger coral	SW	H	GONE						
10R	24 P	3	Brain coral	NW	T	DEAD						ALGAE ON THIS BALL New coral growth on this ball Sick ?
			Maze coral	SE	M	1	2	5	N	N	N	
			Mustard hill	NE	M	4	1.5	4	Y	Y	Y	
			Sea rod, black	NW	T	GONE						
			Sea rod, black	SW	T	3	16	4	Y	Y	Y	
			Staghorn coral	N	T	GONE						
10R	25 B	1	Mustard hill	NW	M		0.5	4	Y	Y	Y	New coral growth on this ball
10R	26 LP	1	Maze coral	W	T		5.5	8	N	Y	N	No new coral growth on this ball
10R	27 B	1	Sea Rod, black	SW	T	GONE						New coral growth on this ball
			Sea Rod, white	W	T	21	14	11	Y	Y	N	
10R	28 P	4	Finger coral	SW	H	DEAD						ALGAE ON THIS BALL Maze Coral and Flower coral previously as Brain coral New coral growth on this ball
			Finger coral	NE	M	4	5	6	N	Y	Y	
			Flower coral	SE	H	DEAD						
			Leaf coral (lettuce)	SW	M	3	3.5	5	Y	N	N	
			Maze coral	W	M		2.5	4	N	Y	N	
			Sea Rod, black	SE	T	5	19	8	Y	Y	N	
			Staghorn coral	W	H	GONE	token off					
10R	29 O	0	Mustard hill	W	M	DEAD						New coral growth on this ball
10R	30 LP	0										New coral growth on this ball
10R	31 O	0										
Subtotal		14										
Total		58	Number of live coral plugs									

PORTOMAREA MARINE MONITORING
REEF BALL CORAL PLUG SUMMARY - 2
EAST SIDE OF BAY

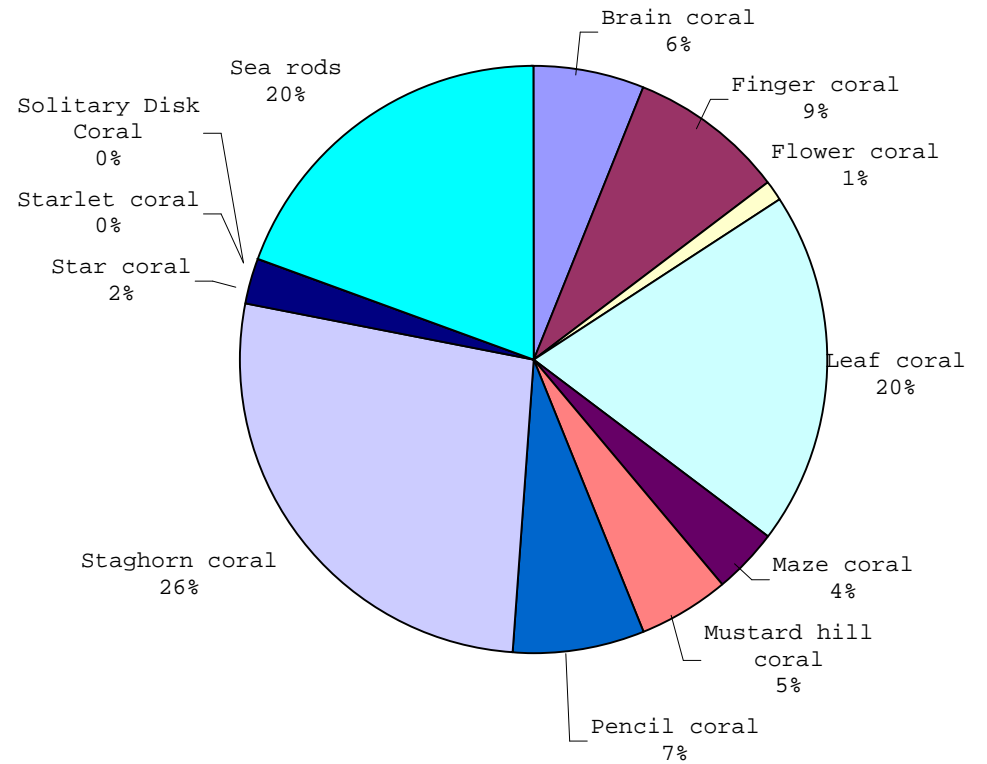
Date : January 16, 2003
Observer: Marjo van den Bulck

CN	B N/T	LP	Coral Species	Plug Orientation		Number of Branches/ Cups	Height cm	Width cm	Coral Growth on Plug Base Y/N	Algae at Base Y/N	Algae at Top Y/N	Remarks
				direction	height							
12L	1P	7	Leaf coral (lettuce)	NW	T	1	6.5	8	N	N	N	New coral growth on this ball.
			Pencil coral	NE	T	12	4.5	7	Y	N	Y	Broken off, small part left.
			Pencil coral	N	H	4	3	5	Y	N	Y	
			Solitary Disk coral	N	L	DEAD						
			Staghorn coral	N	T	7	11	15	Y	N	N	
			Staghorn coral	S	T	21	16	31	Y	N	N	
			Staghorn coral	SW	T	24	15	22	Y	N	N	
			Staghorn coral	NW	H	GONE						
			Staghorn coral	SE	H	11	13	17	Y	N	N	
12L	2P	5	Pencil coral	NE	T	3	5	5	Y	N	Y	New coral growth on this ball.
			Pencil coral	SW	T	ALIVE	0.5	10.5	Y	N	N	Very small surviving piece
			Pencil coral	SE	H	1	2.5	3	N	N	Y	Position WT iso SET
			Staghorn coral	NE	T	DEAD						
			Staghorn coral	W	T	17	10	12	Y	N	N	
			Staghorn coral	NW	T	23	21	21	Y	N	N	
			Staghorn coral	NE	H	GONE						
			Staghorn coral	SE	H	DEAD						
12L	3B	2	Finger coral	NW	T	DEAD						New coral growth on this ball.
			Staghorn coral	SW	T	12	14	22	Y	N	N	
			Staghorn coral	NE	H	21	23	25	Y	N	N	
12L	4B	2	Staghorn coral	NE	H	DEAD						New coral growth on this ball.
			Staghorn coral	SW	T	19	17	21	Y	N	N	
			Staghorn coral	NW	H	25	25	30	Y	N	N	
12L	5P	7	Finger coral	NE	T	12	4	11	N	N	Y	New coral growth on this ball.
			Finger coral	NW	L	7	5	5.5	N	Y	Y	
			Staghorn coral	SE	T	DEAD	Algae					
			Staghorn coral	SW	T	8	12	12	Y	N	N	
			Staghorn coral	NW	T	19	14.5	20	Y	N	M	
			Staghorn coral	N	H	DEAD						
			Staghorn coral	SE	H	DEAD						
			Staghorn coral	NE	H	12	14	18	N	N	N	
			Staghorn coral	SW	H	13	16	19	Y	N	N	
			Staghorn coral	WSW	H	DEAD						
			Staghorn coral	NE	T	21	14	20	Y	N	N	
Total			23 Number of live coral plugs									

PORTOMAREA MARINE MONITORING
REEF BALL CORAL PLUG SPECIES SUMMARY

SPECIES DISTRIBUTION OF CORAL PLUGS ON REEF BALLS AS OF JANUARY 2003

Coral Species	January	Number of Live Plugs	% of Total
Brain coral		5	6.10
Finger coral		7	8.54
Flower coral		1	1.22
Leaf coral		16	19.51
Maze coral		3	3.66
Mustard hill coral		4	4.88
Pencil coral		6	7.32
Staghorn coral		22	26.83
Star coral		2	2.44
Starlet coral		0	0.00
Solitary Disk Coral		0	0.00
Sea rods		16	19.51
	black	10	
	purple	2	
	white	4	
TOTAL		82	100

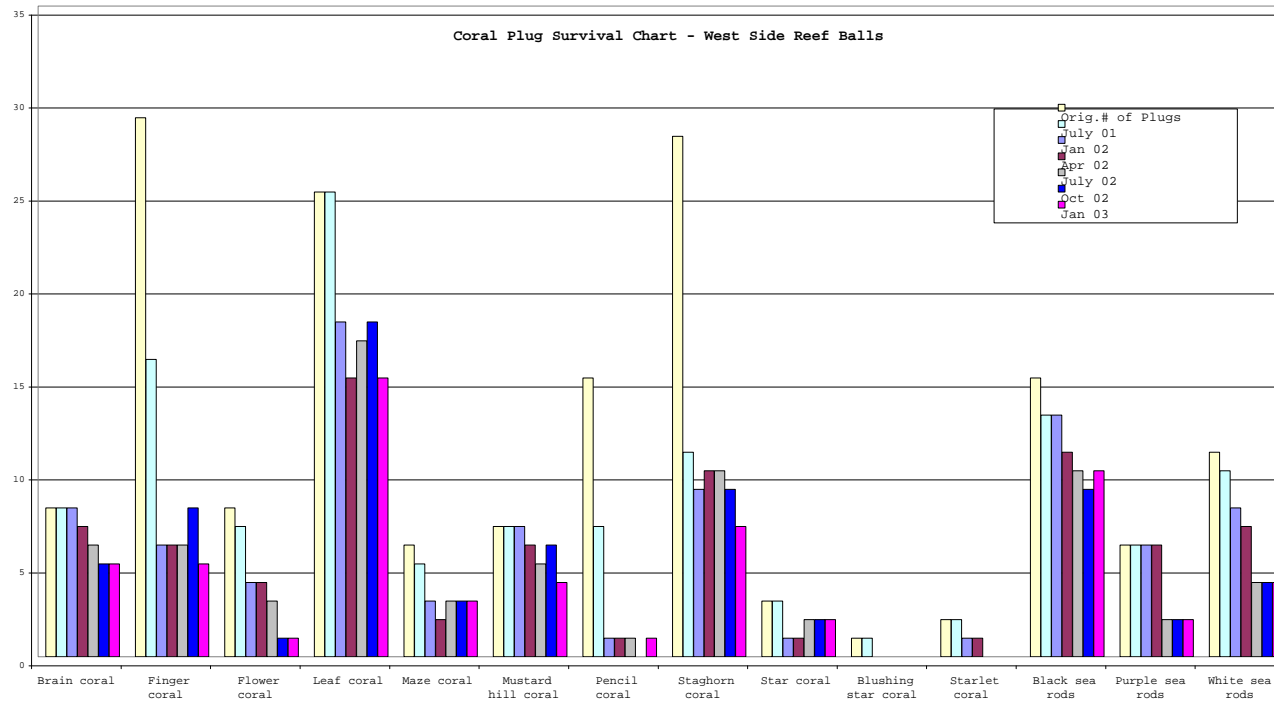


PORTOMAREA MARINE MONITORING

Coral Plug Survival Summary
West Side Reef Balls

July 2001 Monitoring (per M.Kuennen)				January 2002 Monitoring		April 2002 Monitoring		July 2002 Monitoring		October 2002 Monitoring		January 2003 Monitoring		July 2003 Monitoring	
Coral Species	Orig.# of Plugs	Number of Live Plugs	Mortality 90 days	Number of Live Plugs	Mortality 9 months	Number of Live Plugs	Mortality 12 months	Number of Live Plugs	Mortality 15 months	Number of Live Plugs	Mortality 18 months	Number of Live Plugs	Mortality 21 months	Number of Live Plugs	Mortality 27 months
Brain coral*	8	8	0%	8	0%	7	13%	6	25%	5	38%	5	38%		
Finger coral	29	16	45%	6	79%	6	79%	6	79%	8	72%	5	83%		
Flower coral	8	7	13%	4	50%	4	50%	3	63%	1	88%	1	88%		
Leaf coral	25	25	0%	18	28%	15	40%	17	32%	18	28%	15	40%		
Maze coral	6	5	17%	3	50%	2	67%	3	50%	3	50%	3	50%		
Mustard hill coral*	7	7	0%	7	0%	6	14%	5	29%	6	14%	4	43%		
Pencil coral	15	7	53%	1	93%	1	93%	1	93%	0	100%	1	93%		
Staghorn coral	28	11	61%	9	68%	10	64%	10	64%	9	68%	7	75%		
Star coral	3	3	0%	1	67%	1	67%	2	33%	2	33%	2	33%		
Blushing star coral	1	1	0%	0	100%	0	100%	0	100%	0	100%	0	100%		
Starlet coral	2	2	0%	1	50%	1	50%	0	100%	0	100%	0	100%		
Sea rods black	15	13	13%	13	13%	11	27%	10	33%	9	40%	10	33%		
Sea rods purple	6	6	0%	6	0%	6	0%	2	67%	2	67%	2	67%		
Sea rods white	11	10	9%	8	27%	7	36%	4	64%	4	64%	4	64%		
			Mean		Mean		Mean		Mean		Mean		Mean		Mean
TOTALS	164	121	26%	85	48%	77	53%	69	58%	67	59%	59	64%	0	

* Number of original plugs adjusted to correspond to Jan/02 survey

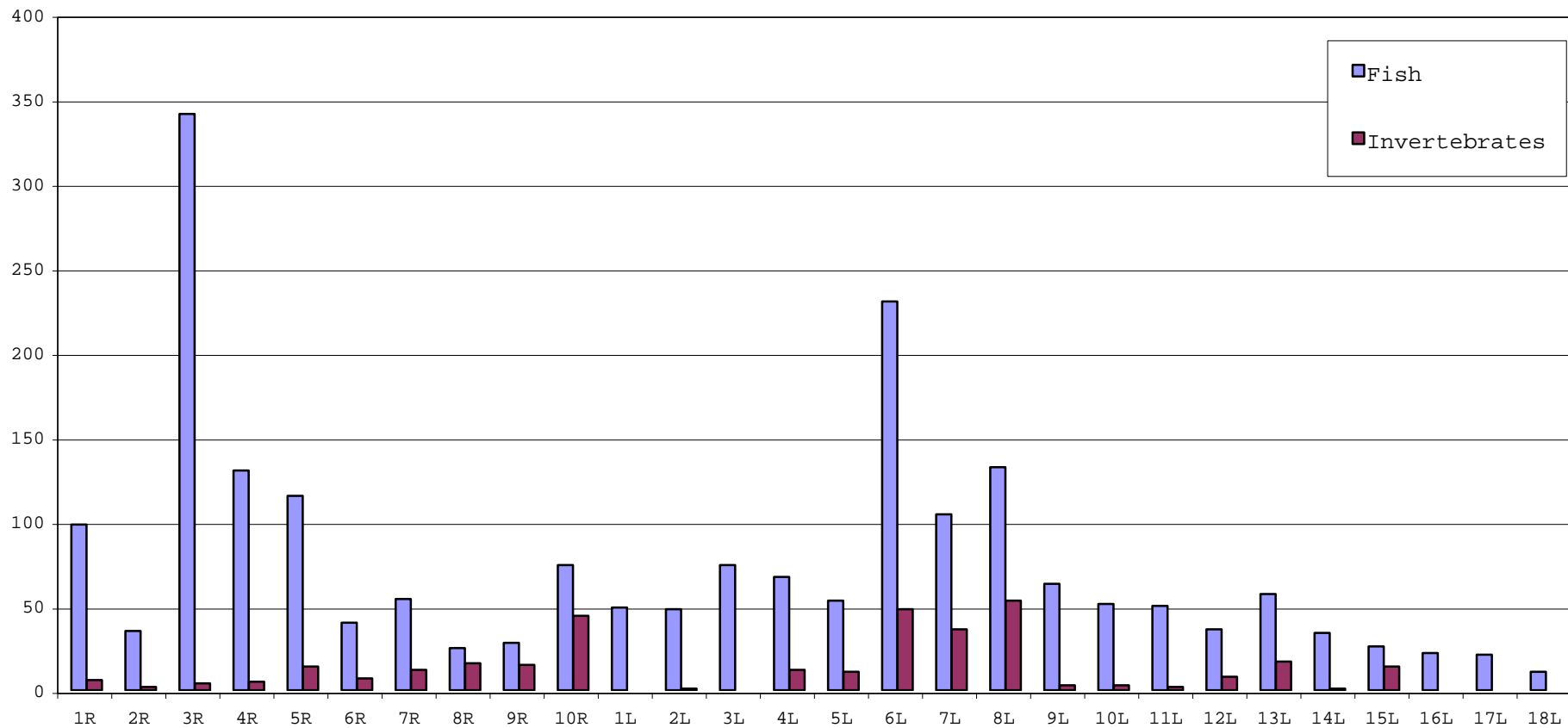


Coral plug mortality chart 1

**PORTOMAREA MARINE MONITORING
REEF BALL CLUSTERS
FISH AND INVERTEBRATE POPULATION SUMMARY**

Cluster No.	No.of Fish	% of Total	No.of Invertebrates	% of Total
1R	98	4.74	6	0.60
2R	35	1.69	2	0.60
3R	341	16.49	4	1.20
4R	130	6.29	5	1.50
5R	115	5.56	14	4.19
6R	40	1.93	7	2.10
7R	54	2.61	12	3.59
8R	25	1.21	16	4.79
9R	28	1.35	15	4.49
10R	74	3.58	44	13.17
1L	49	2.37	0	0.00
2L	48	2.32	1	0.30
3L	74	3.58	0	0.00
4L	67	3.24	12	3.59
5L	53	2.56	11	3.29
6L	230	11.12	48	14.37
7L	104	5.03	36	10.78
8L	132	6.38	53	15.87
9L	63	3.05	3	0.90
10L	51	2.47	3	0.90
11L	50	2.42	2	0.60
12L	36	1.74	8	2.40
13L	57	2.76	17	5.09
14L	34	1.64	1	0.30
15L	26	1.26	14	4.19
16L	22	1.06	0	0.00
17L	21	1.02	0	0.00
18L	11	0.53	0	0.00
TOTAL	2068	100	334	98.80

PORTOMAREA MARINE MONITORING
 FISH AND INVERTEBRATE POPULATION SUMMARY CHART
 REEF BALL CLUSTERS



PORTOMAREA MARINE MONITORING

FISH and INVERTEBRATE SURVEY - REEF BALL CLUSTERS WEST

DATE: January 13, 2003

TIME: 9.00 a.m.

Data collected and recorded by: Marjo van den Bulck

CLUSTER NUMBER	1R	2R	3R	4R	5R	6R	7R	8R	9R	10R			
DEPTH	1.2m	1.4m	1.2m	1.6m	1.8m	2.7m	2.9m	3.6m	3.8m	3.8m			
FISH											Total	Mean	St.Dev.
ANGELFISH	French Angelfish										2	1.00	
BASSLET	Fairy Basslet												
BLENNY	Redlip Blenny										11	2.75	2.06
	Saddled Blenny										1	1.00	
BOXFISH	Spotted Trunkfish												
BUTTERFLYFISH	Banded Butterflyfish										4	1.33	0.58
	Foureye Butterflyfish										3	1.50	0.71
CHROMIS	Blue Chromis												
	Brown Chromis										222	111.00	125.87
DAMSELFISH	Beaugregory										4	4.00	
	Bicolor Damselfish										135	13.50	16.51
	Cocoa Damselfish										2	2.00	
	Dusky Damselfish										32	4.57	4.83
	Sergeant Major										35	8.75	10.18
	Threespot Damselfish										23	2.56	1.94
	Yellowtail Damselfish										4	2.00	1.41
DRUM	Spotted Drum												
EEL	Goldentail Moray												
FILEFISH	Orangespotted Filefish												
GOATFISH	Spotted Goatfish												
	Yellow Goatfish										10	2.00	1.00
GOBY	Bridled Goby										96	9.60	6.00
	Cleaning Goby												
GROUPEL	Coney										4	2.00	
	Graysby												
	Rock Hind										1	1.00	
GRUNT	Bluestriped Grunt										2	1.00	
	French Grunt										62	7.75	17.89
	Striped Grunt										3	3.00	
HAMLET	Barred Hamlet										1	1.00	
HOGFISH	Spanish Hogfish												
JACK	Bar Jack												
PARROTFISH	Blue Parrotfish										1	1.00	
	Princess Parrotfish										1	1.00	
	Queen Parrotfish										14	2.00	1.15
	Redband Parrotfish										3	1.50	0.71
	Stoplight Parrotfish										6	1.50	1.00
	Striped Parrotfish												
PUFFER	Sharpnose Puffer										1	1.00	
SCORPIONFISH	Spotted Scorpionfish										2	1.00	
SEABASS	Harlequin Bass												
SNAPPER	Mahogany Snapper												
	Schoolmaster										1	1.00	
SQUIRELFISH	Blackbar Soldierfish										19	4.75	4.19
	Squirrelfish										5	1.25	0.50
SURGEONFISH	Blue Tang										7	1.40	0.89
	Doctorfish										1	1.00	
WRASSE	Bluehead Wrasse										154	15.40	21.58
	Clown Wrasse										18	3.00	1.67
	Puddingwife										3	1.00	
	Rainbow Wrasse										9	9.00	
	Slippery Dick										32	8.00	7.79
	Yellowhead Wrasse										1	1.00	
OTHERS	Lizardfish, Bluestriped												
	Mojarra, Yellowfin												
	Soapfish, Greater										3	1.00	
	Trumpetfish										2	1.00	
TOTAL	98	35	341	130	115	40	54	25	28	74	940	94	
INVERTEBRATES											Total	Mean	St.Dev.
ANEMONE	Corkscrew Anemone										2	2.00	
	Knobby Anemone										28	4.00	2.83
	Giant Anemone										10	2.50	2.38
CRUSTACEANS	Banded Coral Shrimp												
	Pedersen Cleaner Shrimp										3	1.50	0.71
	Red Snapping Shrimp												
	Yellowline Arrow Crab												
TUBE WORMS	Christmas Tree Worm										19	3.17	1.33
	Split Crown Feather D.										2	2.00	
	Variegated Feather Duster										28	4.00	6.27
MOLLUSKS	Conch										1	1.00	
	Lettuce Sea Slug												
	Amber Penshell										1	1.00	
SPONGES	Lumpy Overgrowing Sponge										30	3.33	1.80
ECHINODERMS	Longspined Sea Urchin										1	1.00	
	Sea Cucumber Three-Rowed												
TOTAL	6	2	4	5	14	7	12	16	15	44	125	12.5	

Note: Previous observations (jan and april 2002) of Beaded Anemone are in fact Knobby Anemone.

PORTOMAREA MARINE MONITORING

FISH and INVERTEBRATE SURVEY - REEF BALL CLUSTERS EAST

DATE: January 14, 2003

Data collected and recorded by: Marjo van den Bulck

TIME: 09:09 a.m.

CLUSTER NUMBER		1L	2L	3L	4L	5L	6L	7L	8L	9L	10L	11L	12L	13L	14L	15L	16L	17L	18L	Total	Mean	St. Dev.	
DEPTH		1.5m	1.5m	1.6m	1.6m	2.1m	2.1m	2.1m	2.4m	2.7m	3.2m	3.4m	4.3m	4.3m	4.3m	4.3m	4.3m	4.3m	4.3m				
	FISH																						
ANGELFISH	French Angelfish				1																1	1.00	
BLENNY	Hairy Blenny	1																			1	1.00	
	Redlip Blenny				2						1										3	1.50	0.71
	Saddled Blenny				1			1													2	1.00	
BOXFISH	Smooth Trunkfish																						
	Spotted Trunkfish																						
BUTTERFLYFISH	Banded Butterflyfish							2	1	1		1									5	1.25	0.50
	Foureye Butterflyfish													2	1						3	1.50	0.71
CHROMIS	Brown Chromis	4	3		14		200	50	40	2											313	44.71	71.10
DAMSELFISH	Beaugregory Damselfish	2	3	1				1													7	1.75	0.96
	Bicolor Damselfish	2	4	5	25	13	6	7		8	8	2	3	11	1						95	7.31	6.41
	Cocoa Damselfish																						
	Dusky Damselfish	6	2	2		4		2	6	2				1							25	3.13	1.96
	Sergeant Major	5				6		3	6	2	5	7	2	3	2	7	13				61	5.08	3.15
	Threespot Damselfish		1	5	5	5	3	3		2	1			1							26	2.89	1.76
	Yellowtail Damselfish									1											1	1.00	
EEL	Chain Moray																						
FILEFISH	Slender Filefish																						
	Orange Spotted Filefish											1		1							2	1.00	
FLOUNDER	Peacock Flounder																						
GOATFISH	Spotted Goatfish																						
	Yellow Goatfish									1		7	2								10	3.33	3.21
GOBY	Bridled Goby		5	3		8		13	15	11	18	8	15	30	27	9	6		7	175	12.50	8.01	
GROUPE	Coney			1	1	1	1		2					2						8	1.33	0.52	
	Graysby		1	3	1															5	1.67	1.15	
	Red Hind																						
GRUNT	Bluestriped Grunt								1												1	1.00	
	French Grunt	2	2	2		2	4	1	52	1			2		1	1	1	1	1	73	5.21	13.49	
	Juvenile Grunt U.I.																						
HAMLET	Butter Hamlet														1						1	1.00	
HOGFISH	Spanish Hogfish																						
JACK	Bar Jack																						
PARROTFISH	Princess Parrotfish			1	1								3								5	1.67	1.15
	Queen Parrotfish					2	1	2	4			1		1		3	3	3			20	2.22	1.09
	Redband Parrotfish						1	1	2												4	1.33	0.58
	Redtail Parrotfish																						
	Stoplight Parrotfish								1												1	2	1.00
	Striped Parrotfish							1													1	1.00	
PUFFER	Sharpnose Puffer										1			3					1	5	1.67	1.15	
SCORPIONFISH	Spotted Scorpionfish						1	1		1										3	1.00		
SEABASS	Harlequin Bass													1							1	1.00	
SNAPPER	Gray Snapper			1								1									2	1.00	
SQUIRRELFISH	Squirrelfish	1		2	1	3	5	3													15	2.50	1.52
SURGEONFISH	Blue Tang	1	2	2	2	3			1		1					1	1				14	1.56	0.73
	Doctorfish			2	2					2	2	4	2						2		16	2.29	0.76
	Ocean Surgeonfish																						
WRASSE	Bluehead Wrasse	17	10	24		4	4	10	1	14	7	6	1			4					103	7.92	6.96
	Clown Wrasse	2	2		4					1	1	1				1					12	1.71	1.11
	Puddingwife	1	1	1	2			1	2	1					2						11	1.38	0.52
	Slippery Dick	5	12	18	4		3	2		8	8	13				4	4				81	7.36	5.05
	Yellowhead Wrasse													1								2	1.00
OTHERS	Mojarra, Yellowfin																						
	Sand Diver																						
	Soapfish, Greater				1		2			3		1				1			1		9	1.50	0.84
	Trumpetfish				1		1		1	1											4	1.00	
TOTAL		49	48	74	67	53	230	104	132	63	51	50	36	57	34	26	22	21	11	1128	62.67		
INVERTEBRATES																				Total	Mean	St. Dev.	
ANEMONE	Corkscrew Anemone				1						2	1	3	4							11	2.2	1.30
	Giant Anemone					2		1		1	1		1	3		2					11	1.6	0.79
	Knobby Anemone				1				4							1					7	1.8	1.50
CRUSTACEANS	Nimble Spray Crab				3	1	23	11													38	9.5	9.98
	Pederson Cleaner Shrimp												2	2							4	2.0	
	Two Claw Shrimp												1								1	1.0	
TUBE WORMS	Christmas Tree Worm				1	1	3	3	28	1			1	8		10					56	6.2	8.81
	Split Crown Fthr.Dstr.																						
	Magnificent Fthr.Dstr.																						
	Variegated Fth.Dstr.											1				1					2	1.0	
MOLLUSKS	Amber Penshell								1												1	1.0	
	Spiny File Clam						1														1	1.0	
SPONGES	Lumpy Overgrowing Sponge															1					1	1.0	
ECHINODERMS	Longspined Sea Urchin		1		7	6	21	20	20	1											76	10.9	9.15
TOTAL			1		12	11	48	36	53	3	3	2	8	17	1	14				209	11.61		

Note: Previous observations (jan and april 2002) of Beaded Anemone are in fact Knobby Anemone.