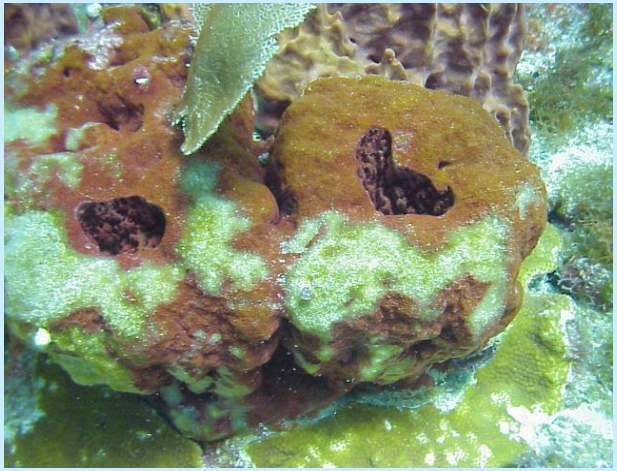
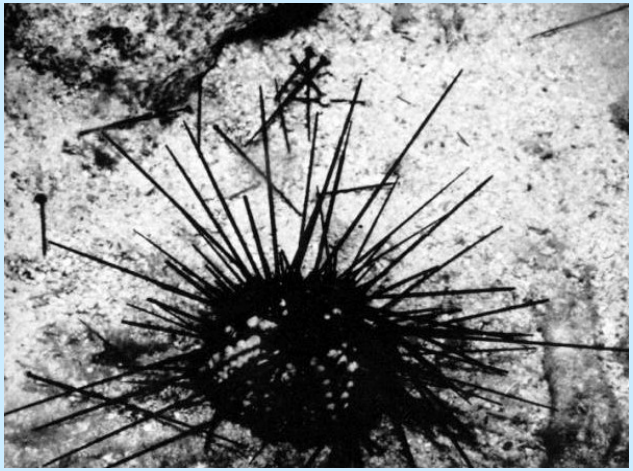
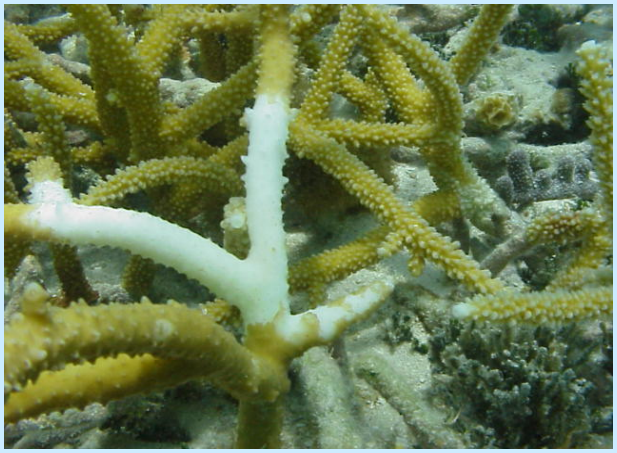
CRES-NOAA
DISEASES OF CORAL REEF ORGANISMS

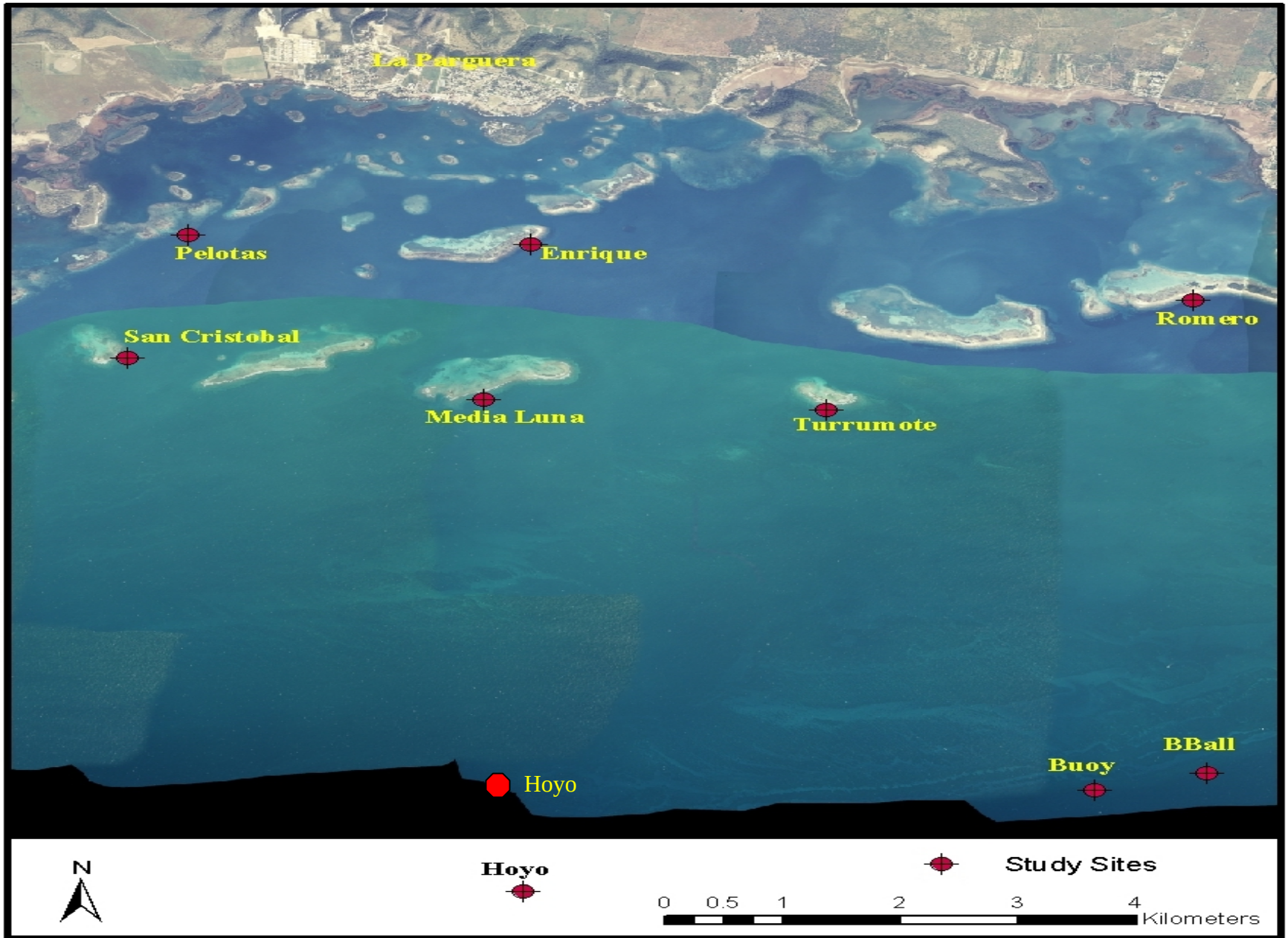


Ernesto Weil, Garriet Smith, and Diego Gil-Agudelo

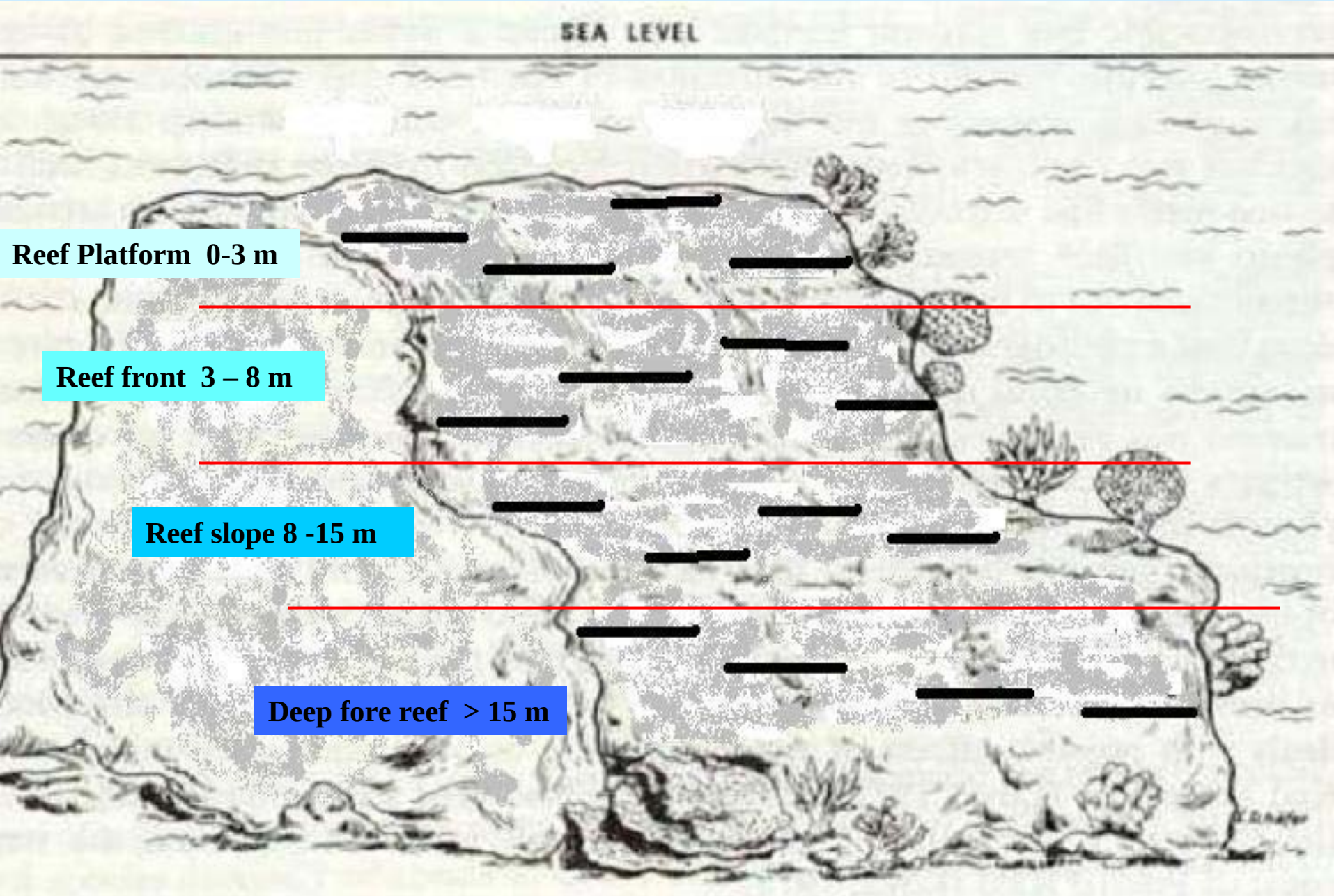
Goals - Objectives

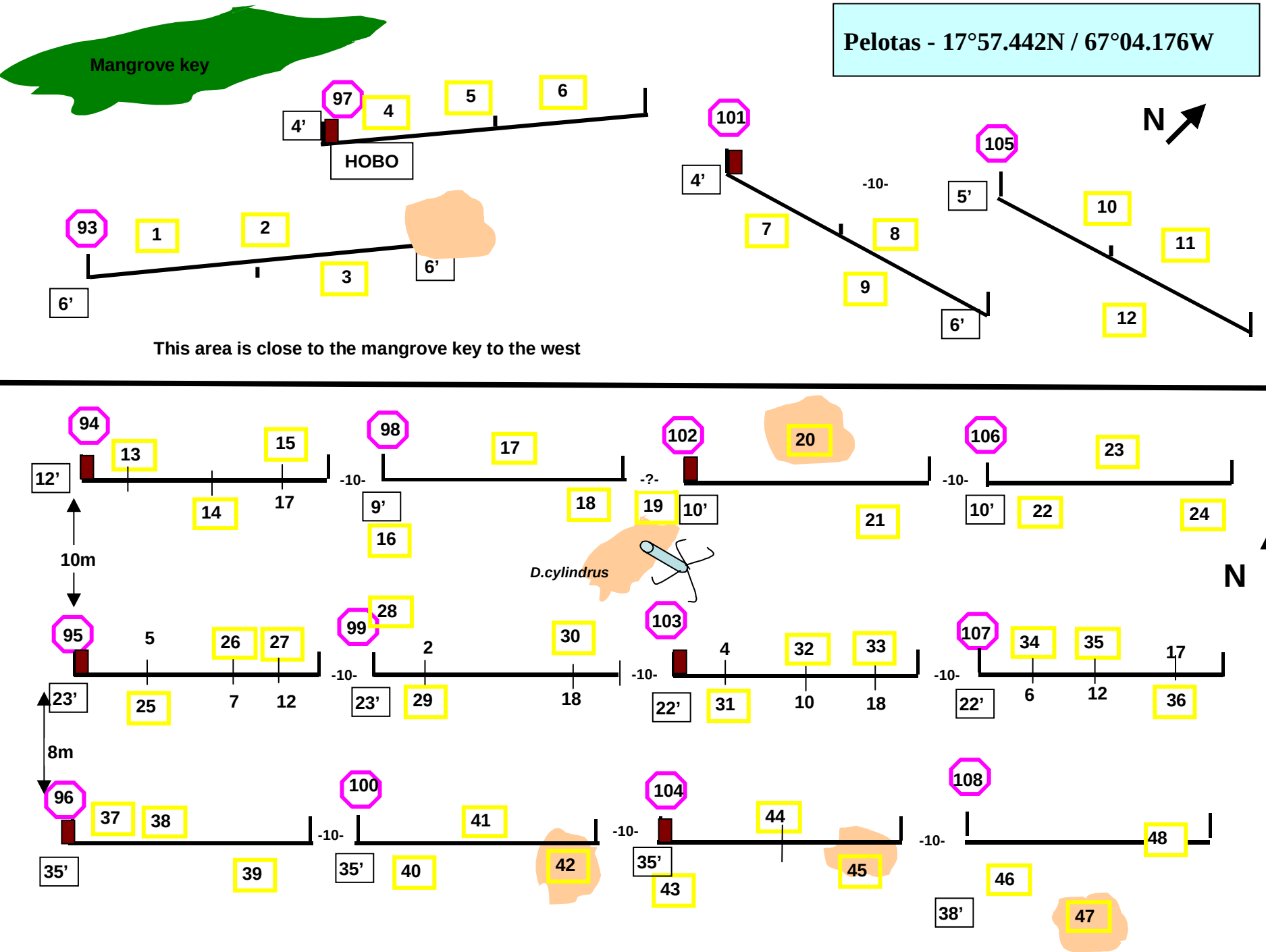
- **Spatial and temporal variability of disease incidence (community) and prevalence (populations) in 9 reefs off La Parguera.**
- **Assessment of the impact of major chronic diseases and sudden, short epizootic events on coral populations and the reef community structure.**
- **Assess correlation with environmental /anthropogenic factors.**
- **Identification of pathogens and characterization of the etiology - Identification of vectors and reservoirs**
- **Potential remedies and managing perspectives**

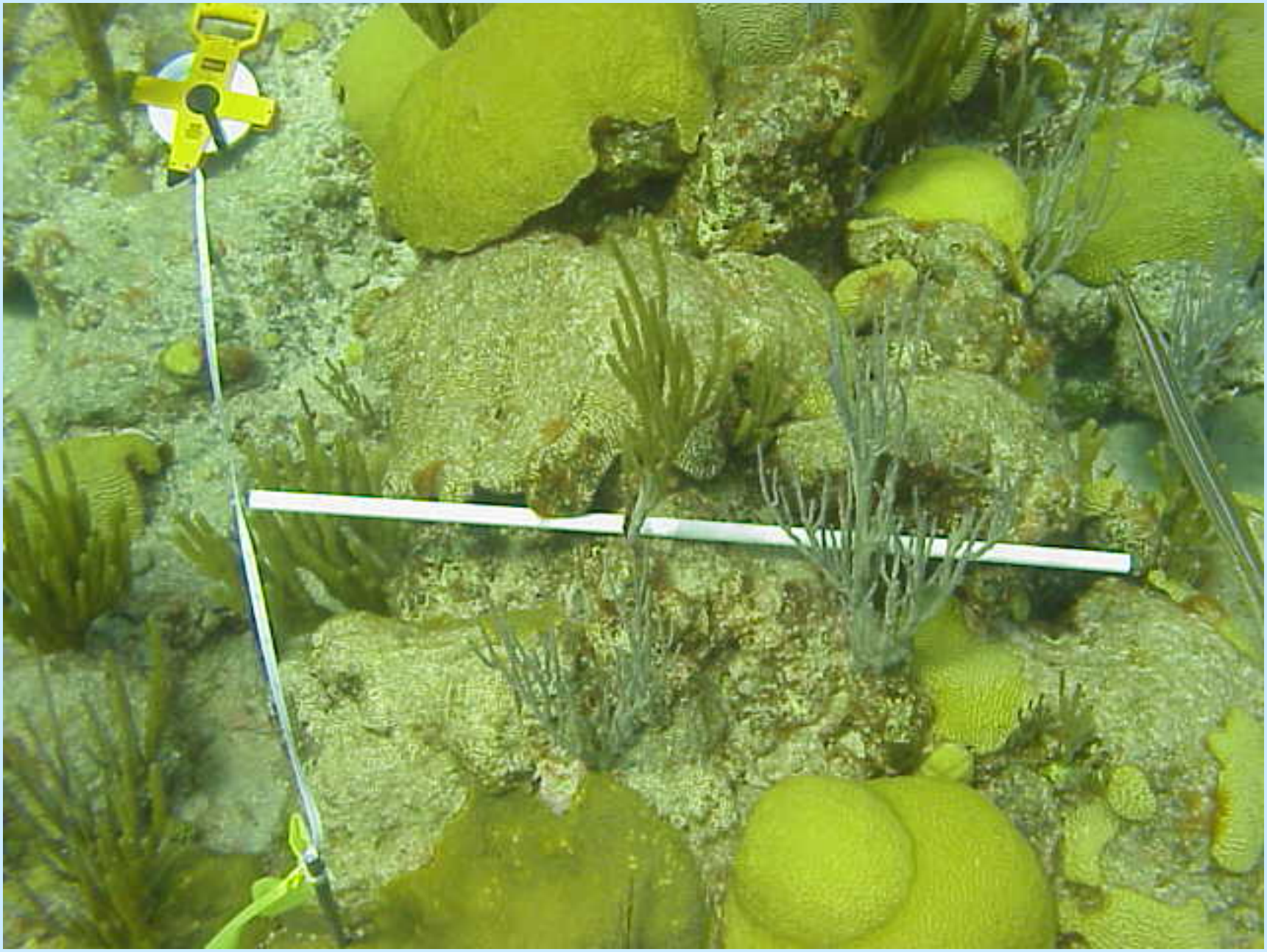
Experimental Design



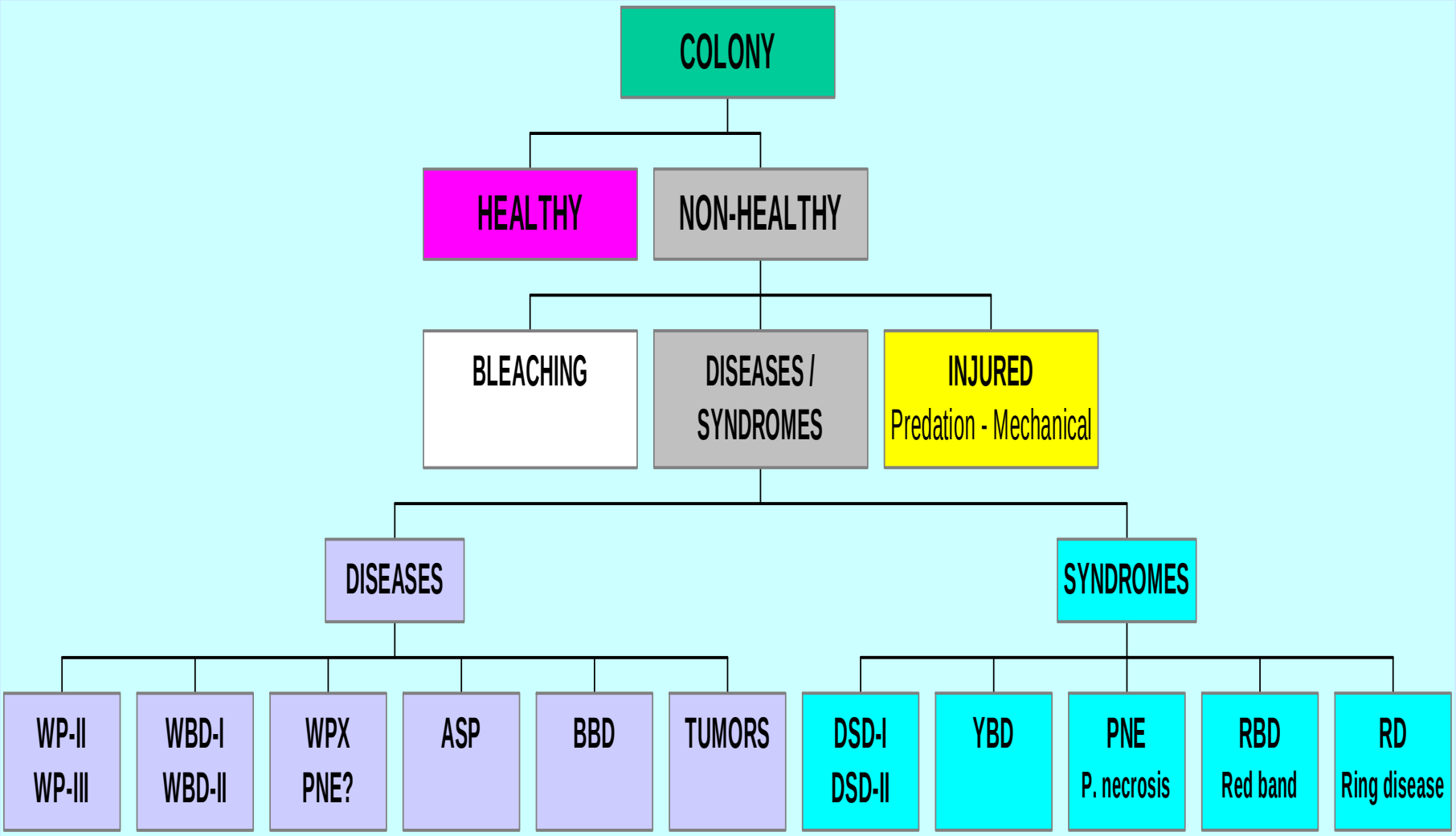
SAMPLING DESIGN



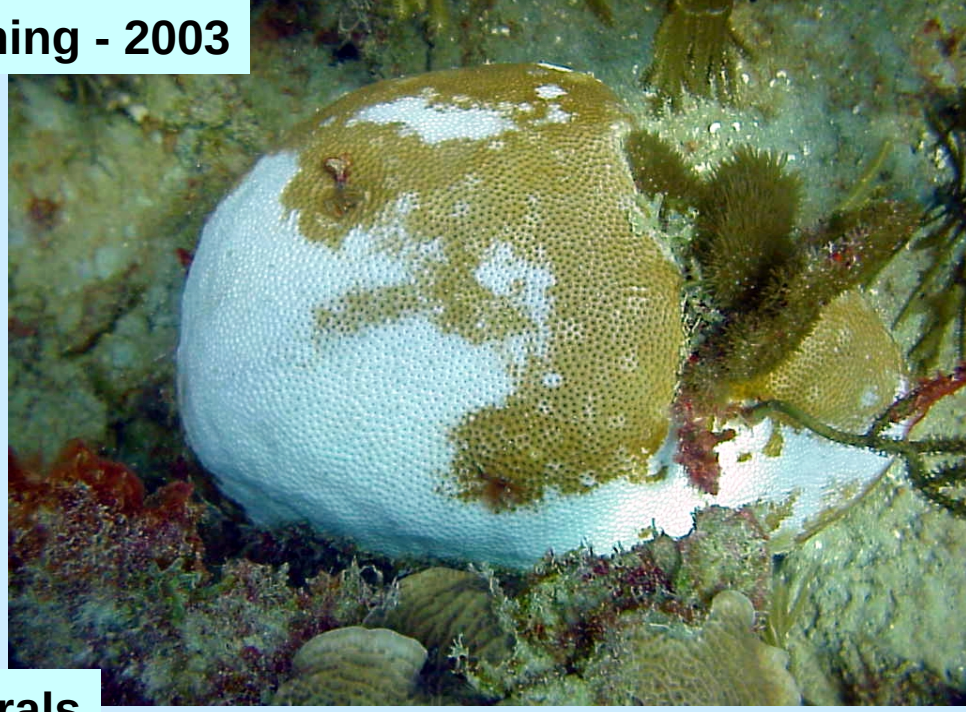

Pelotas - 17°57.442N / 67°04.176W
Mangrove key
97
4'
4
5
6
HOBO
93
1
2
3
6'
6'
101
4'
7
8
9
6'
-10-
105
5'
10
11
12
N
This area is close to the mangrove key to the west
94
12'
13
14
15
17
98
-10-
9'
16
17
18
102
-?-
19
10'
20
21
106
-10-
10'
22
23
24
10m
D.cylindrus
N
95
23'
5
25
26
7
27
12
99
-10-
23'
28
2
29
30
18
103
-10-
22'
4
31
32
10
33
18
107
-10-
22'
34
6
35
12
17
36
8m
96
35'
37
38
39
100
-10-
35'
40
41
42
104
-10-
35'
43
44
45
108
-10-
38'
46
47
48



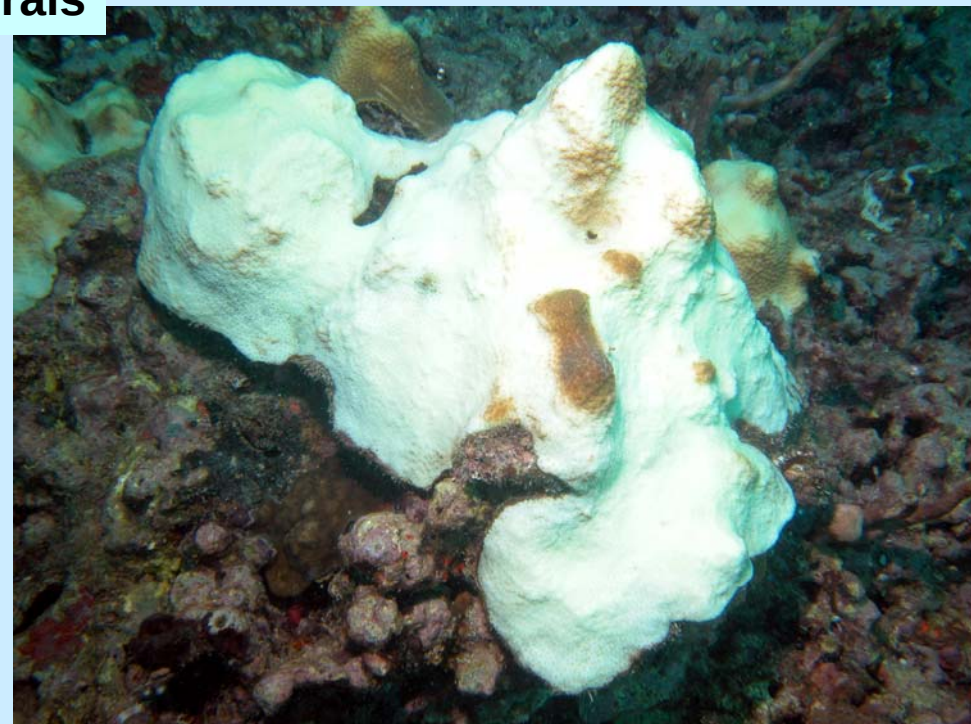
CARICOMP DISEASE SURVEY

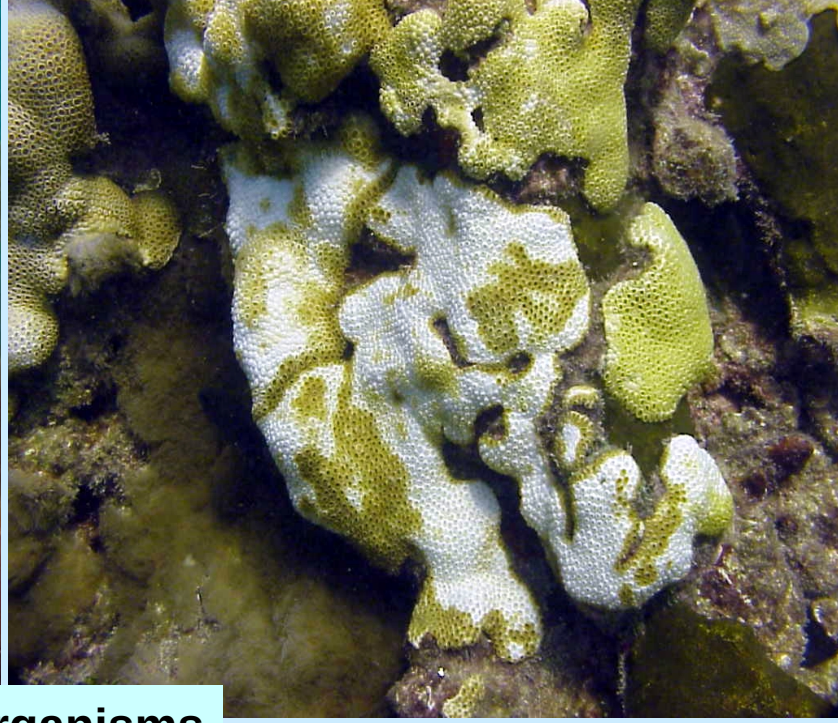


Bleaching - 2003

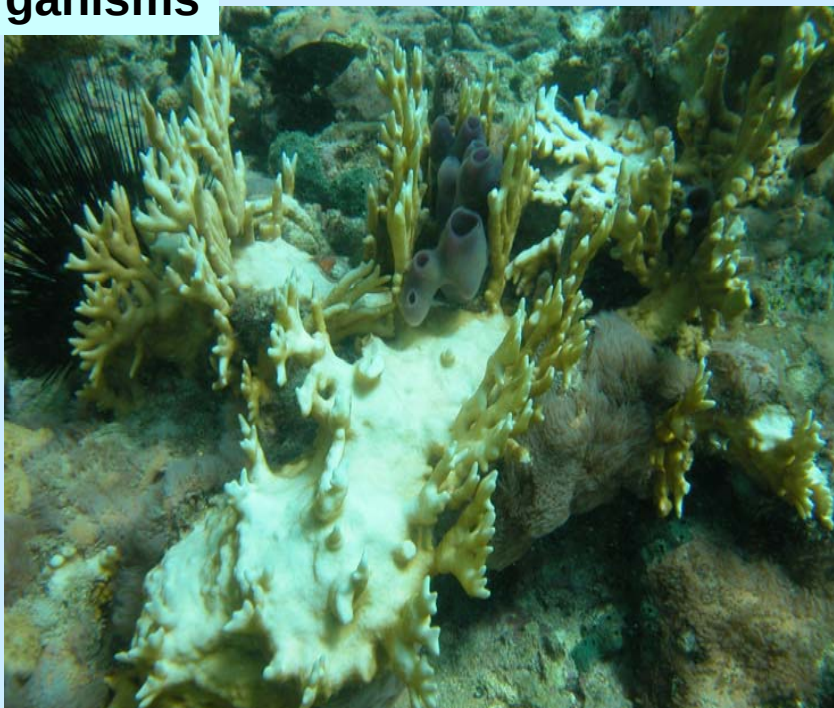


Corals

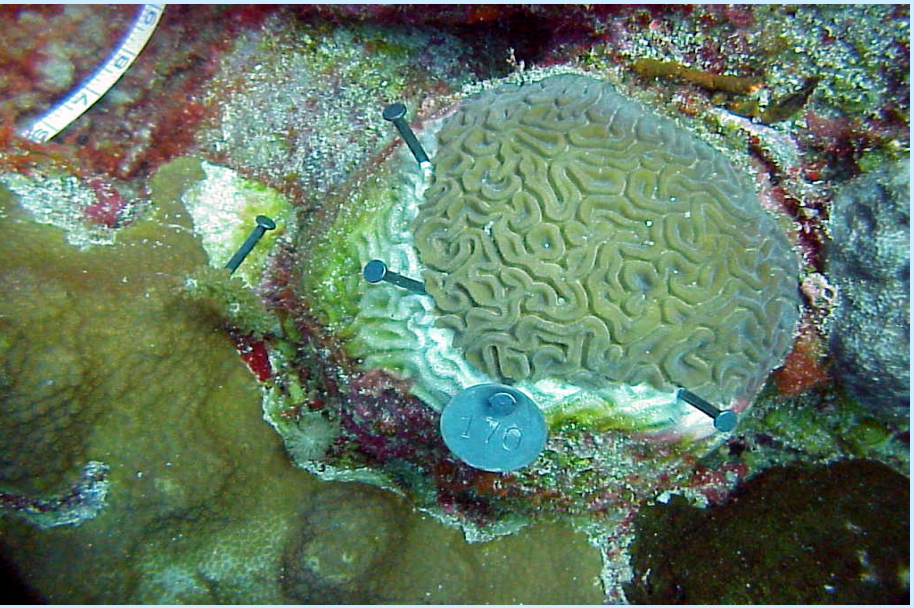


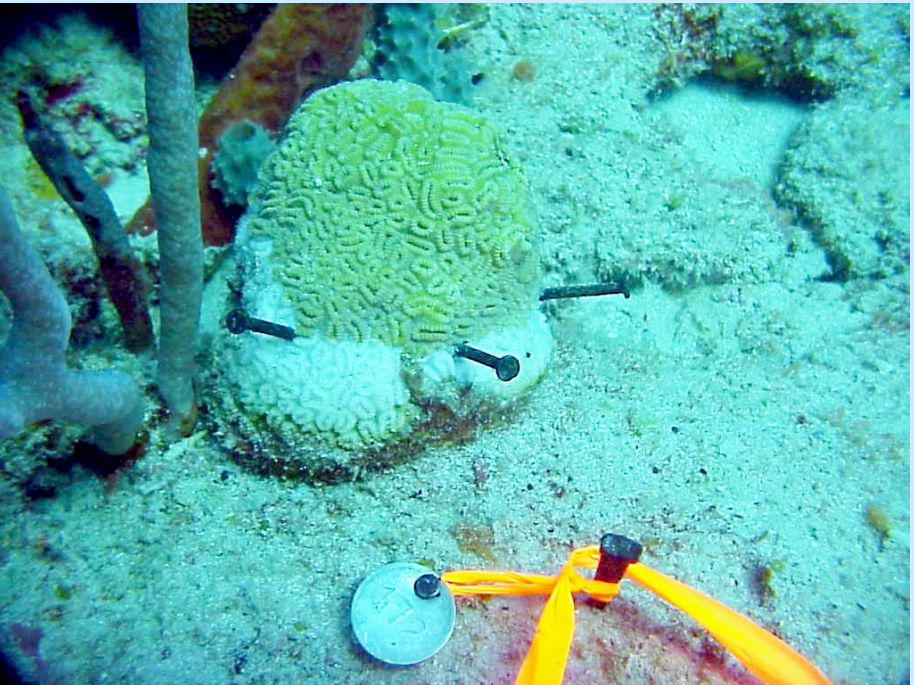


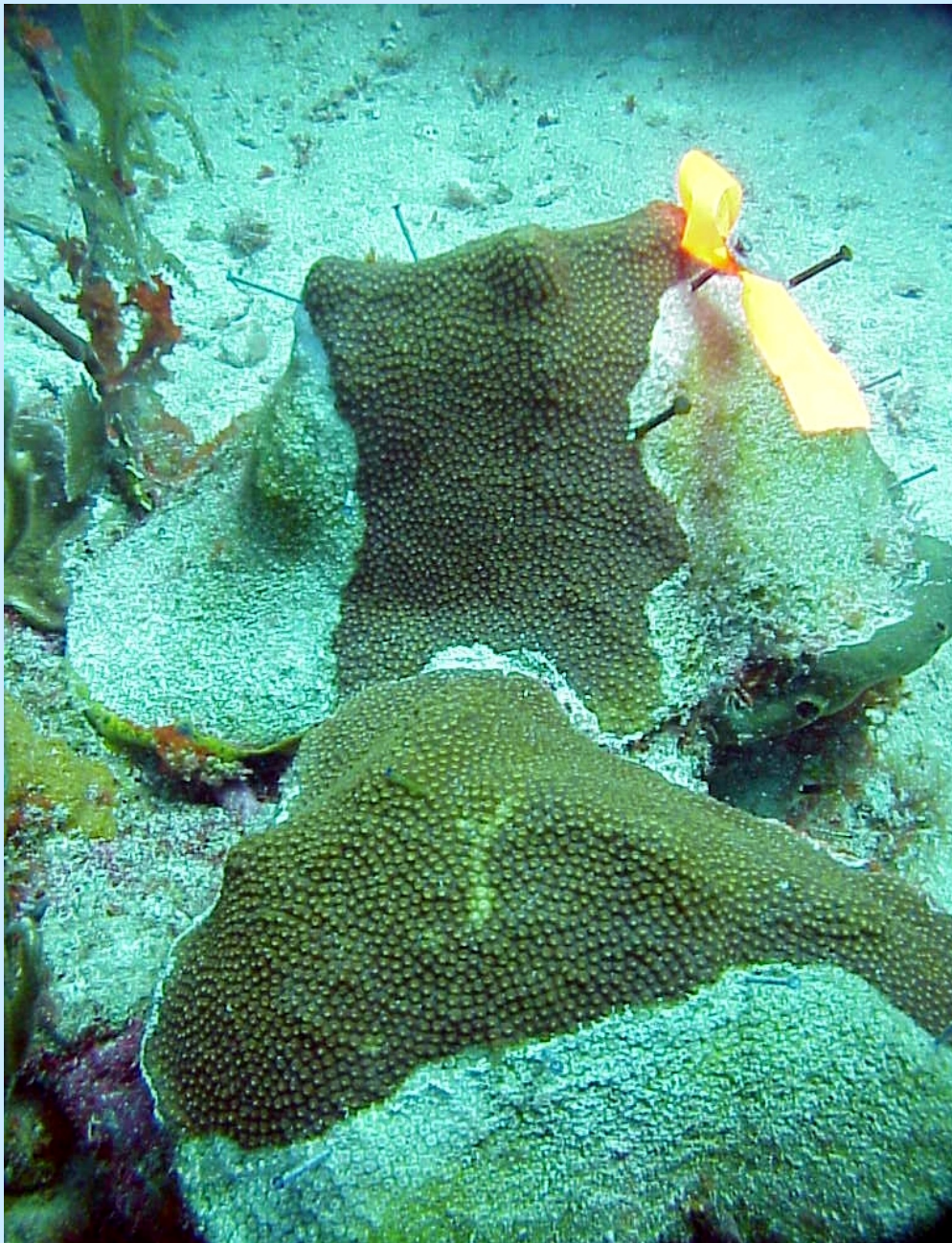
Other organisms

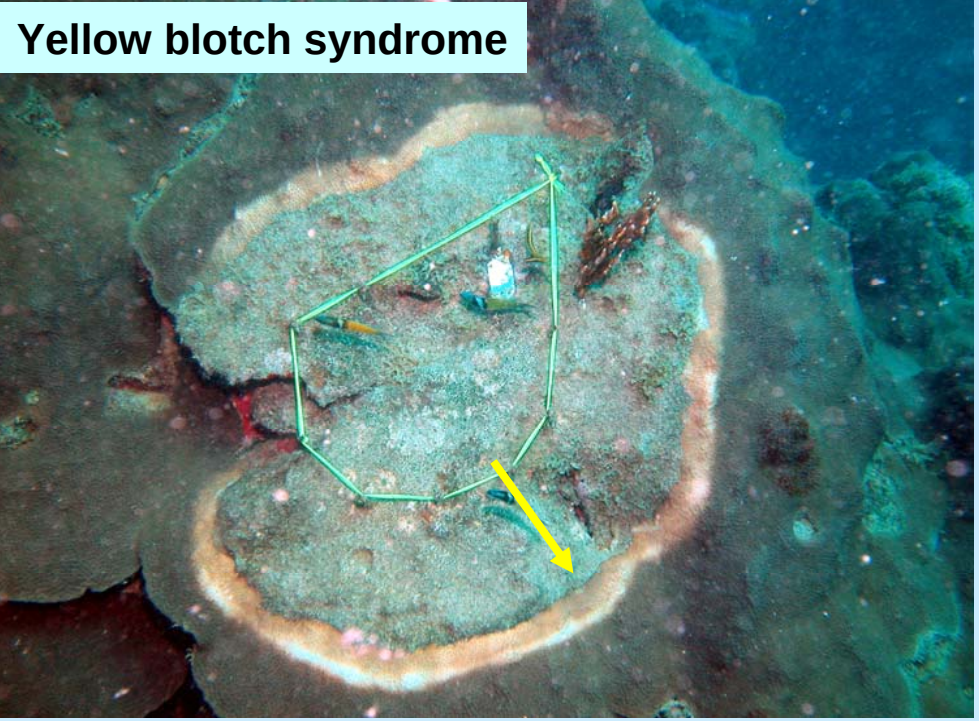


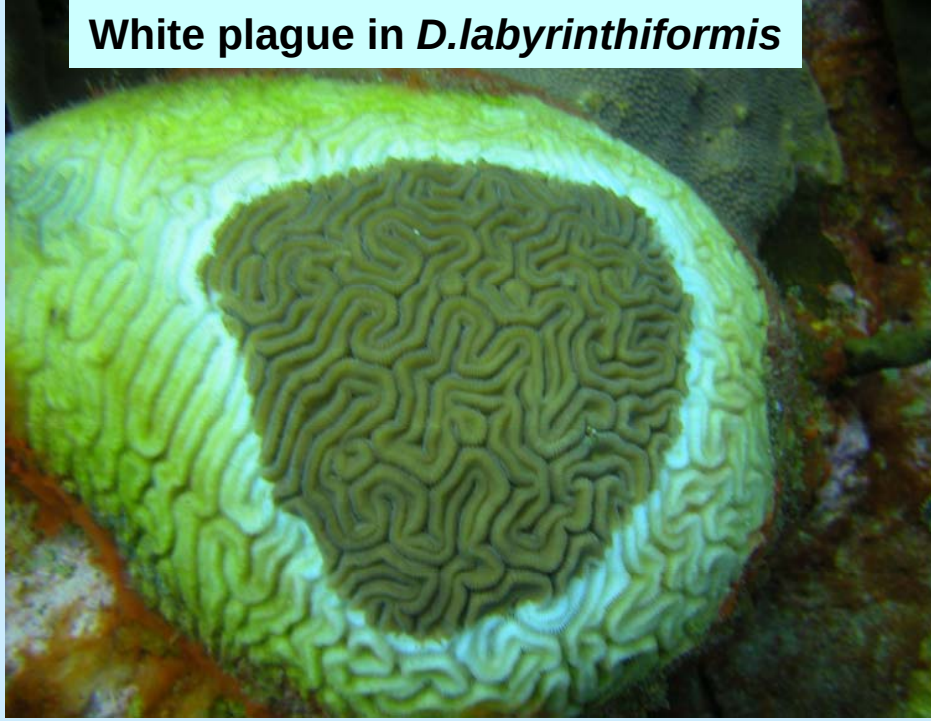
Tagged colonies infected with WP-II

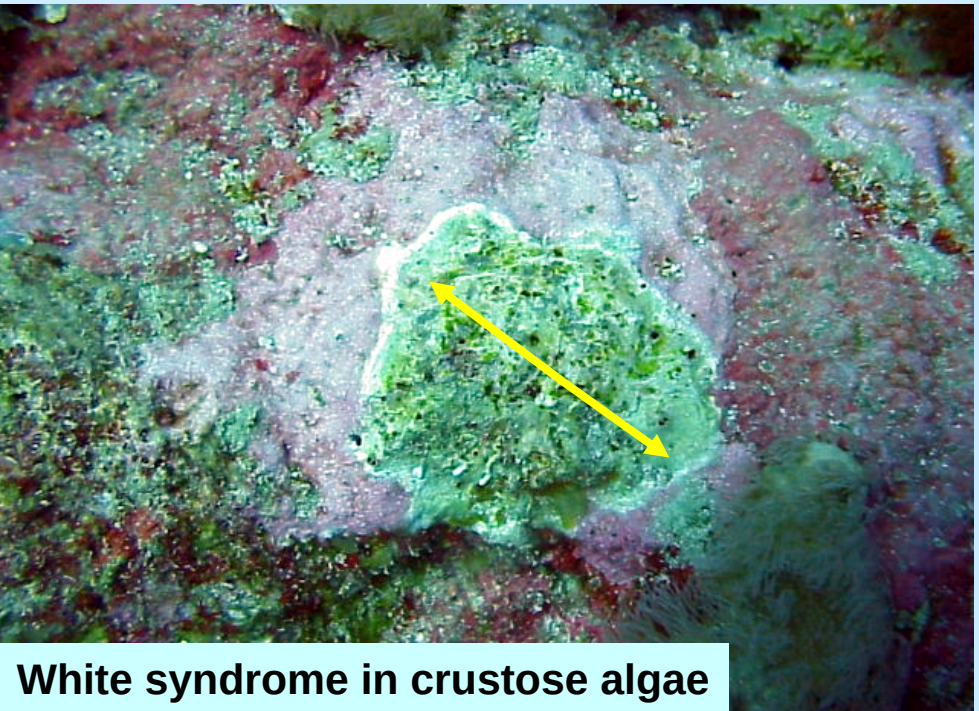


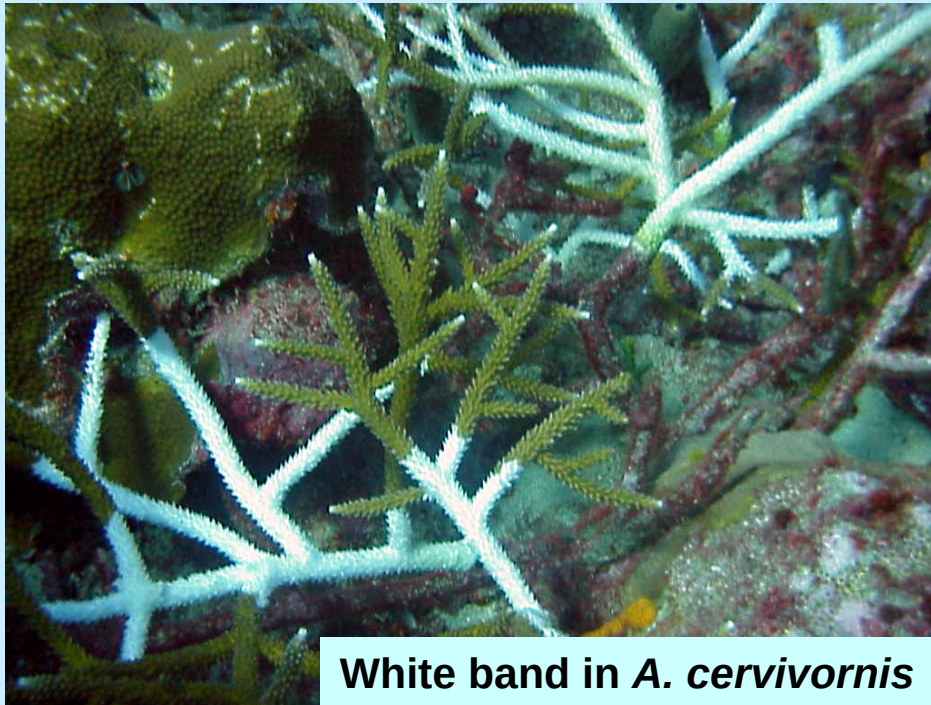





Yellow blotch syndrome

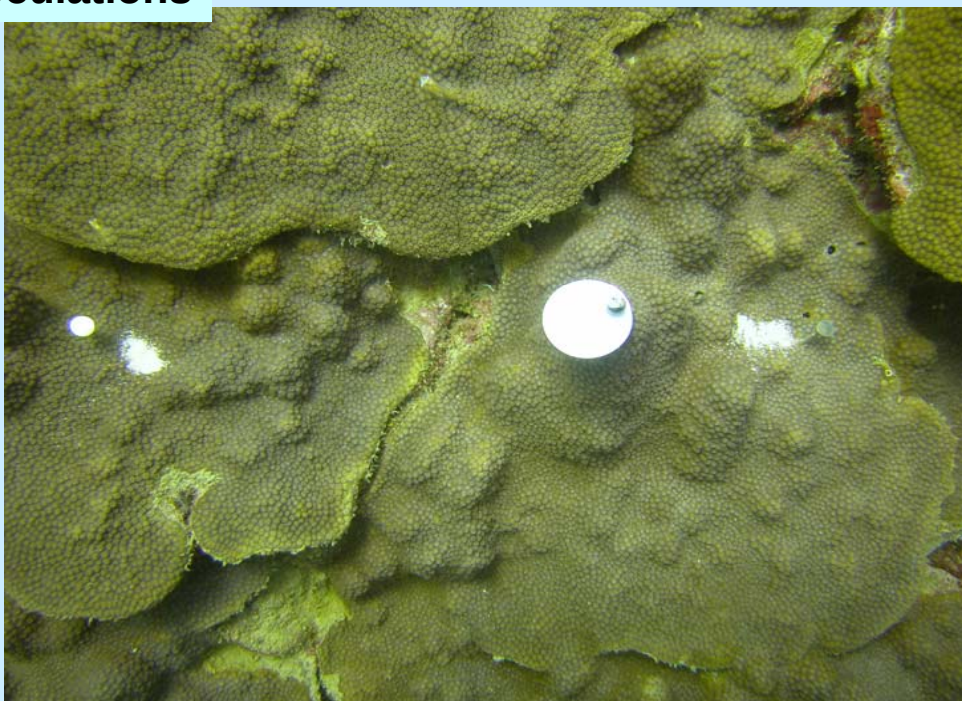

White plague in *D.labyrinthiformis*


White syndrome in crustose algae

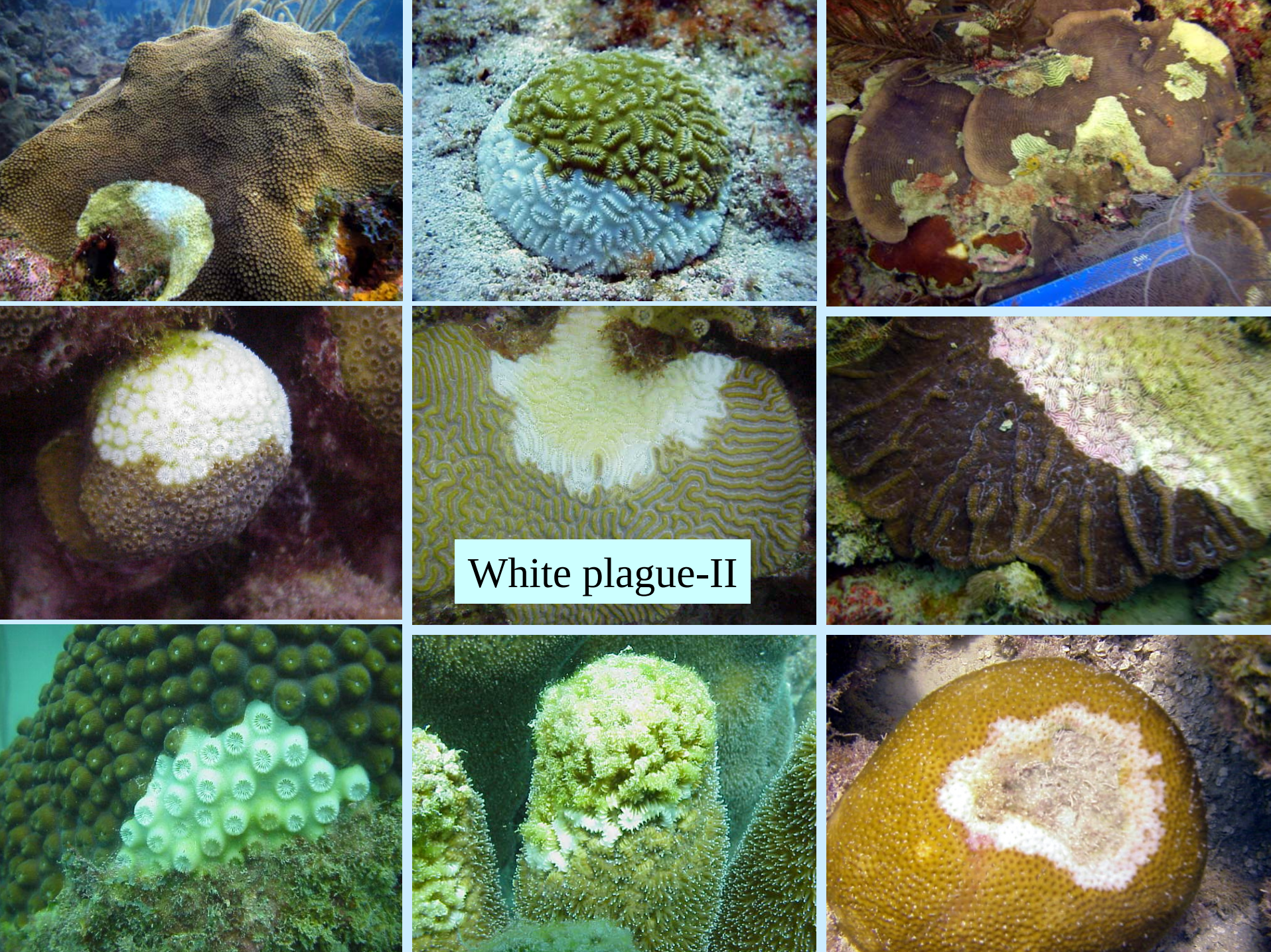

White band in *A. cervivornis*

BBD
Ten days after tagging

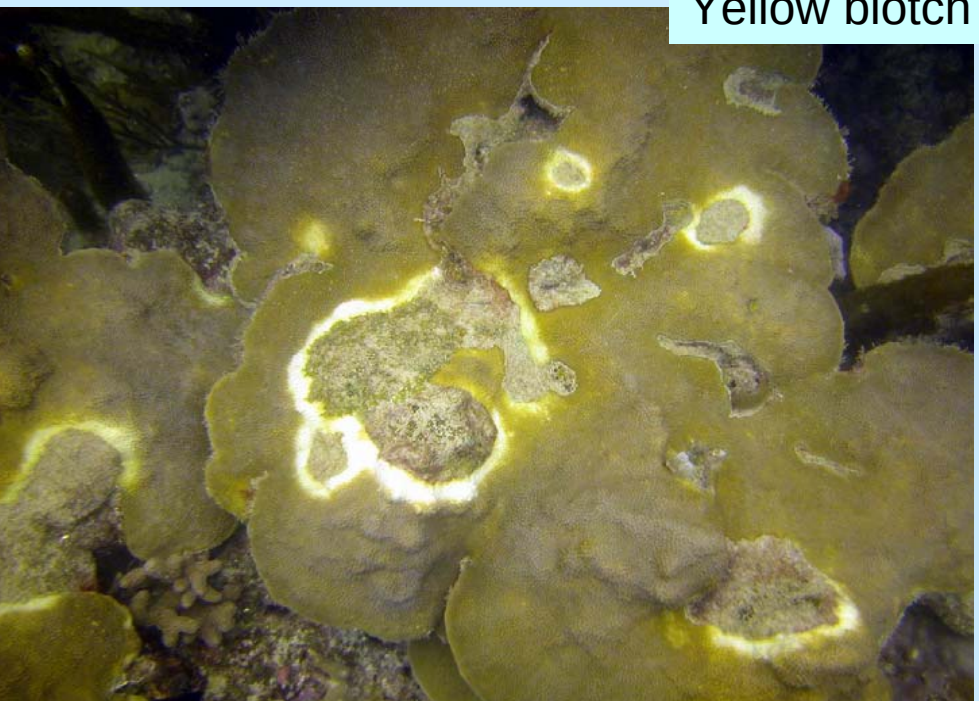
Disease inoculations

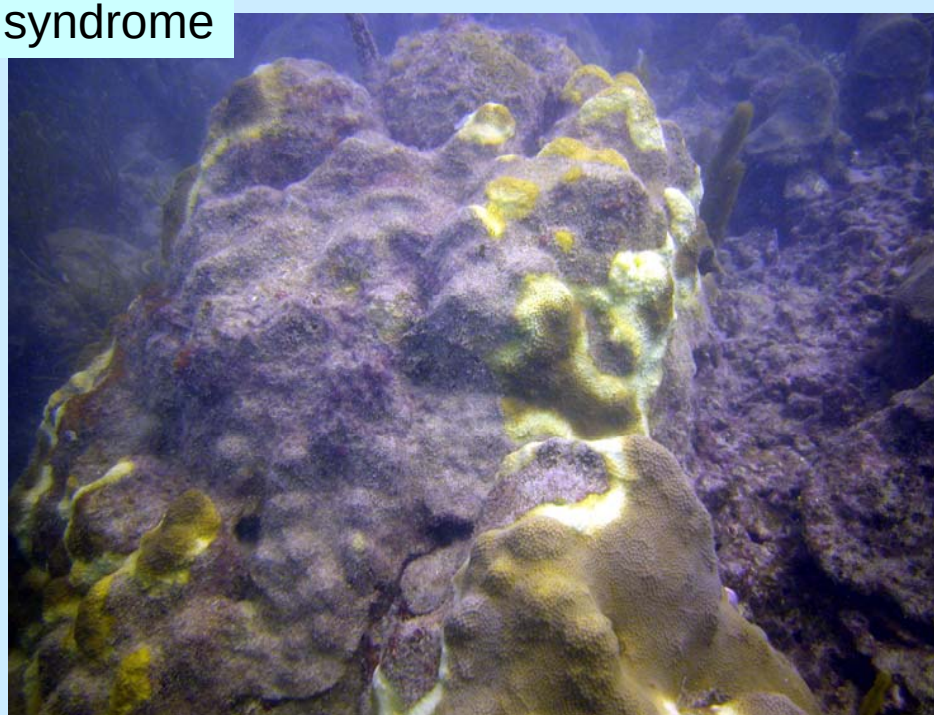


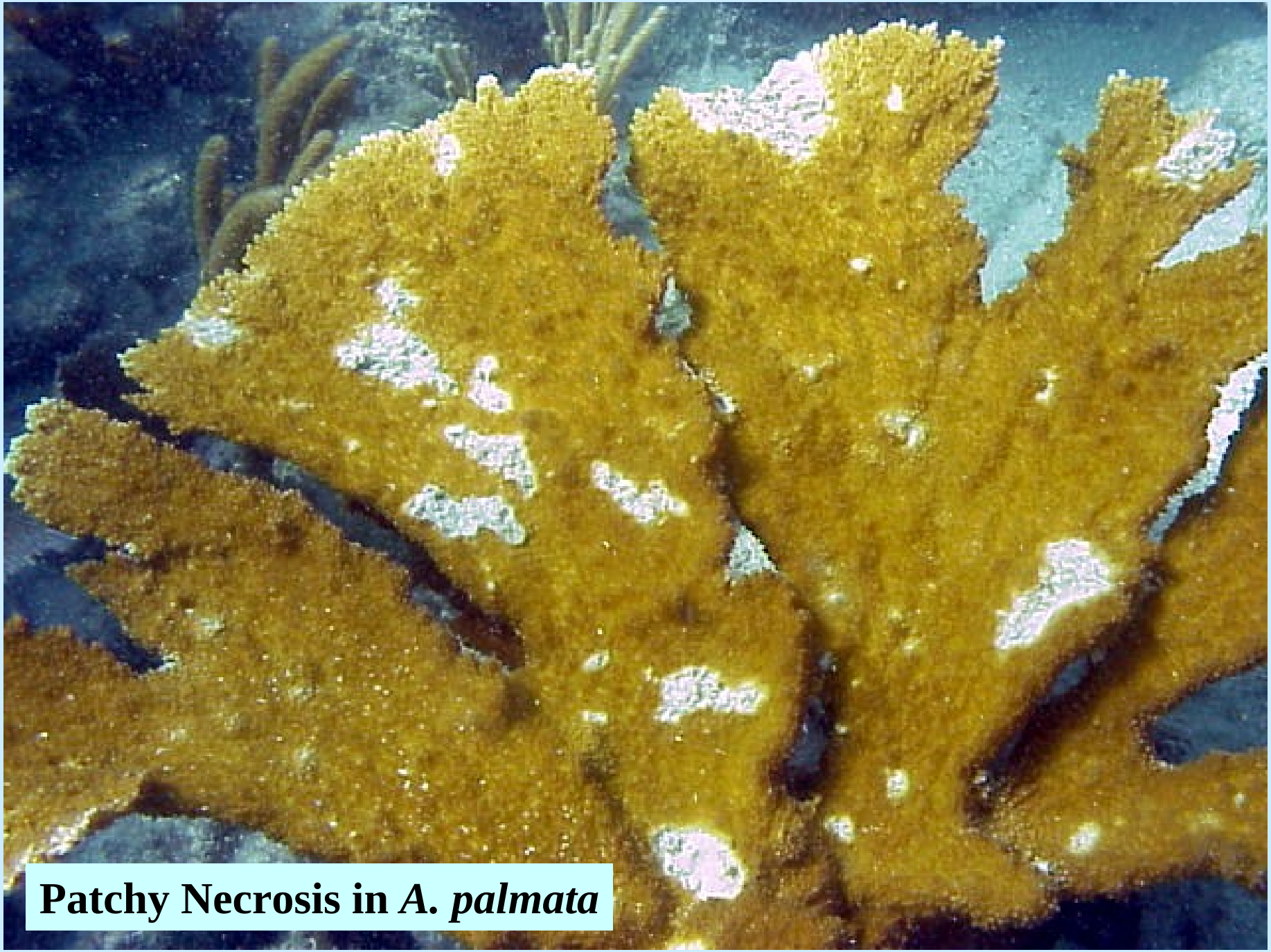
ASPERGILLOSIS


White plague-II

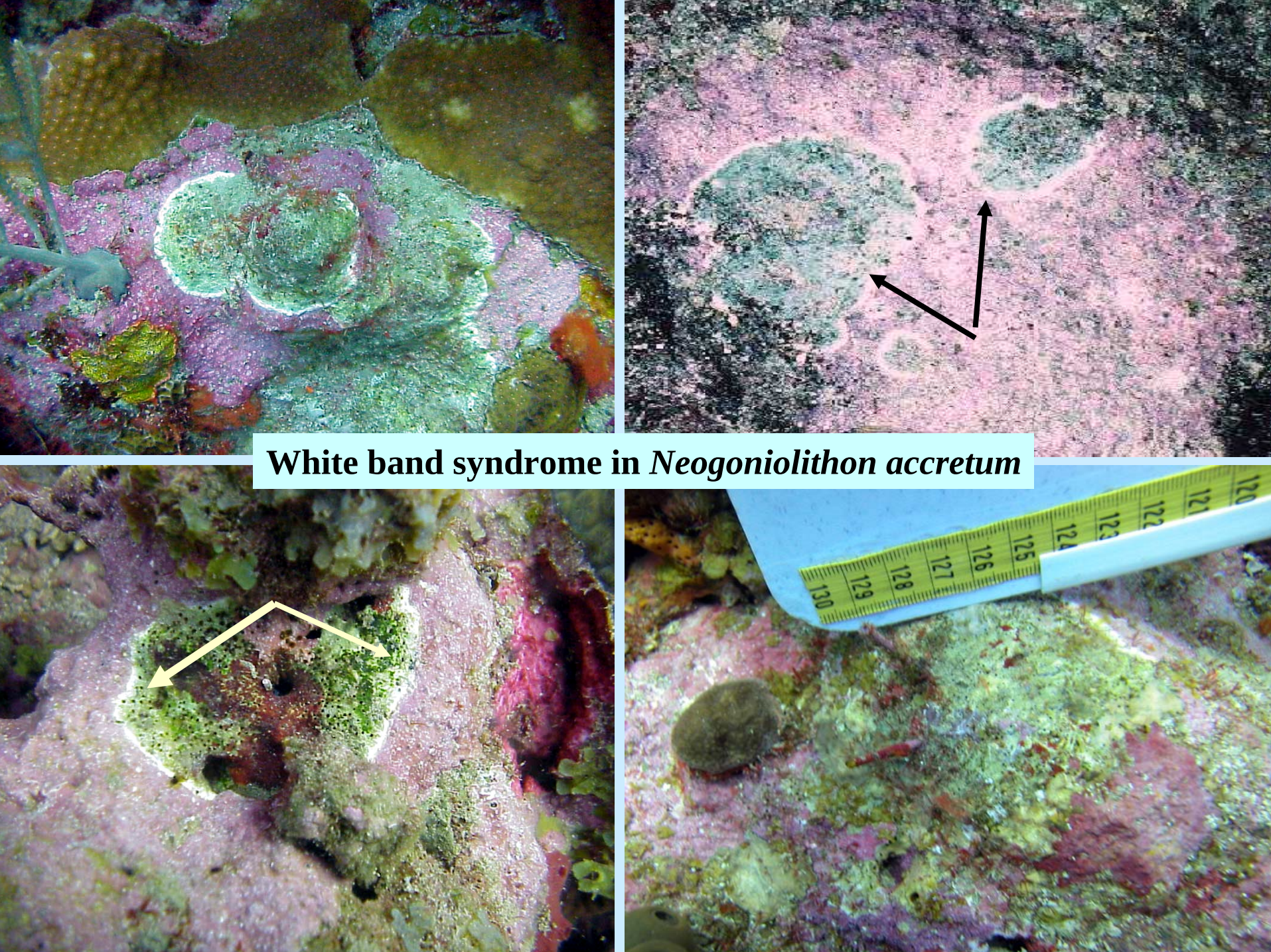
Yellow blotch syndrome

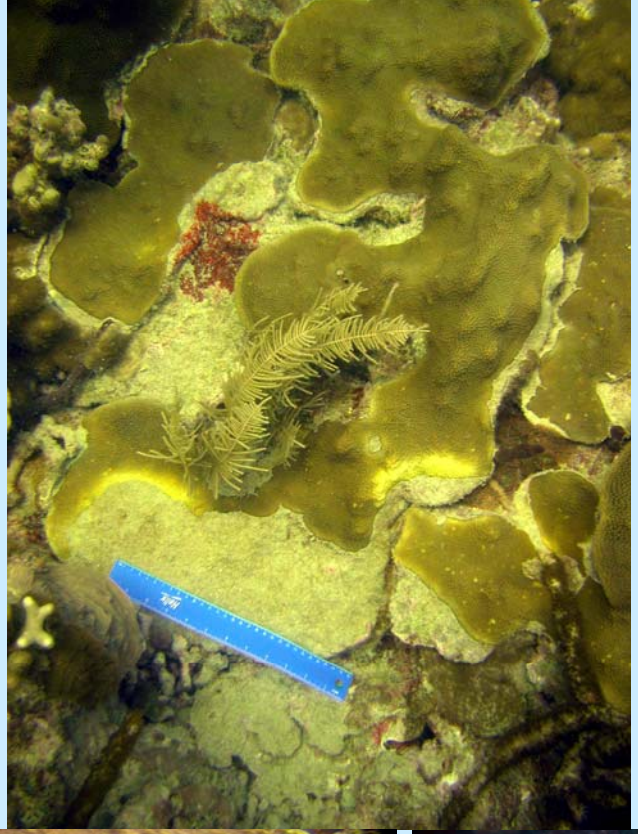


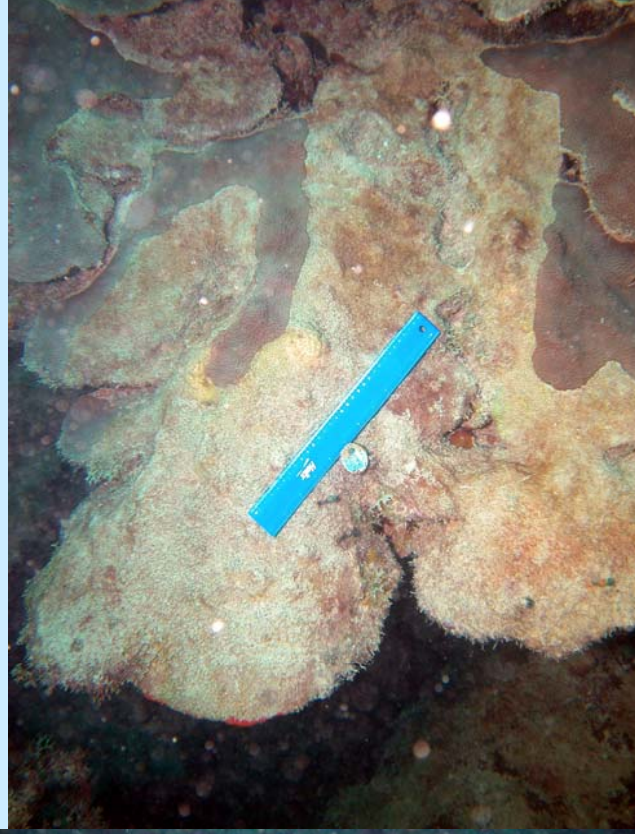


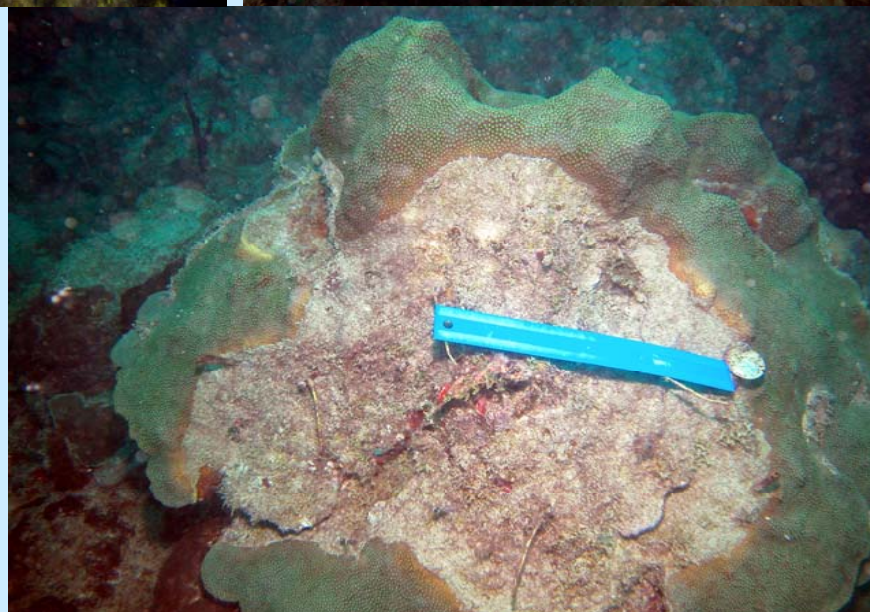


Patchy Necrosis in *A. palmata*

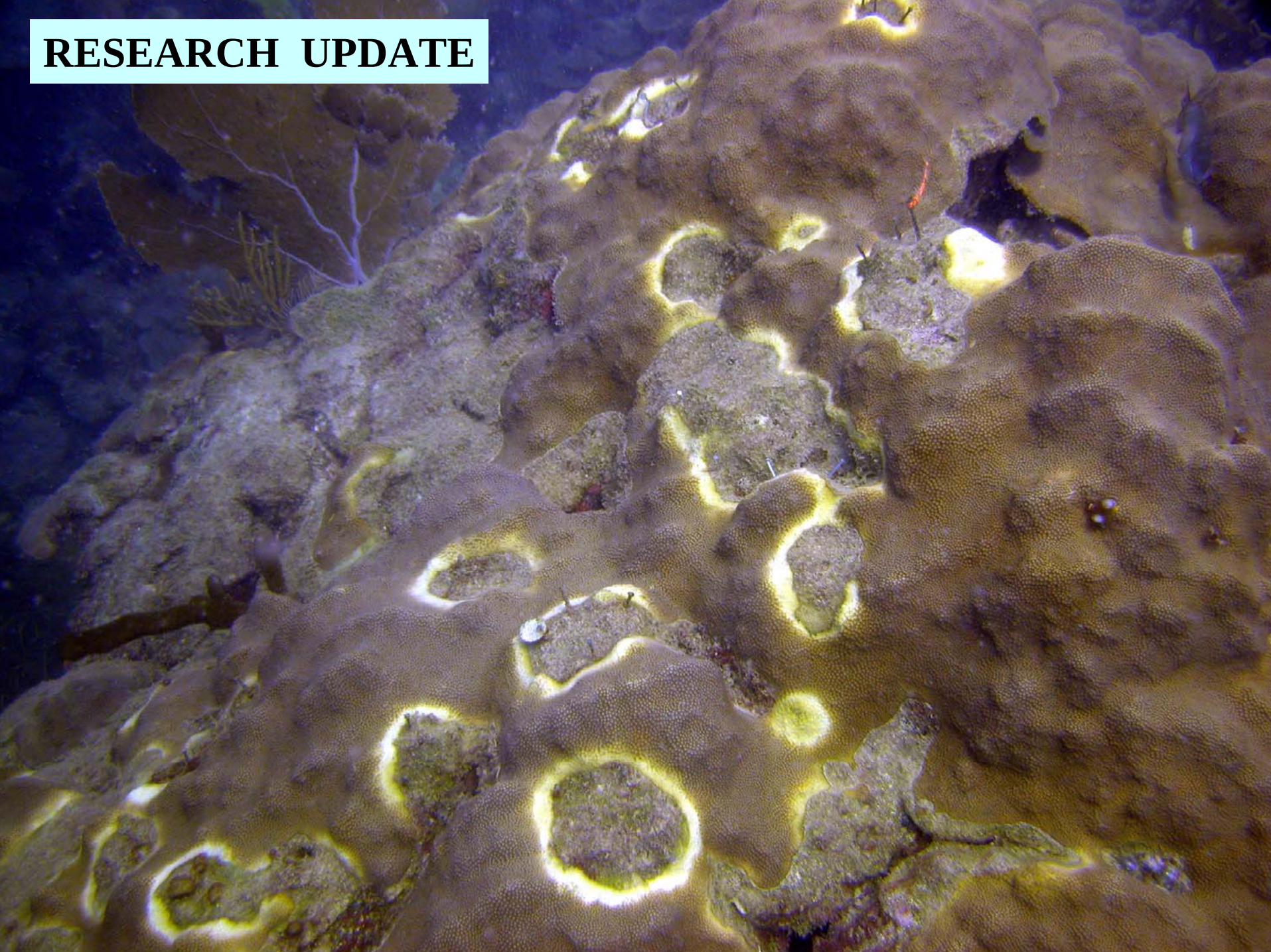

White band syndrome in *Neogoniolithon accretum*

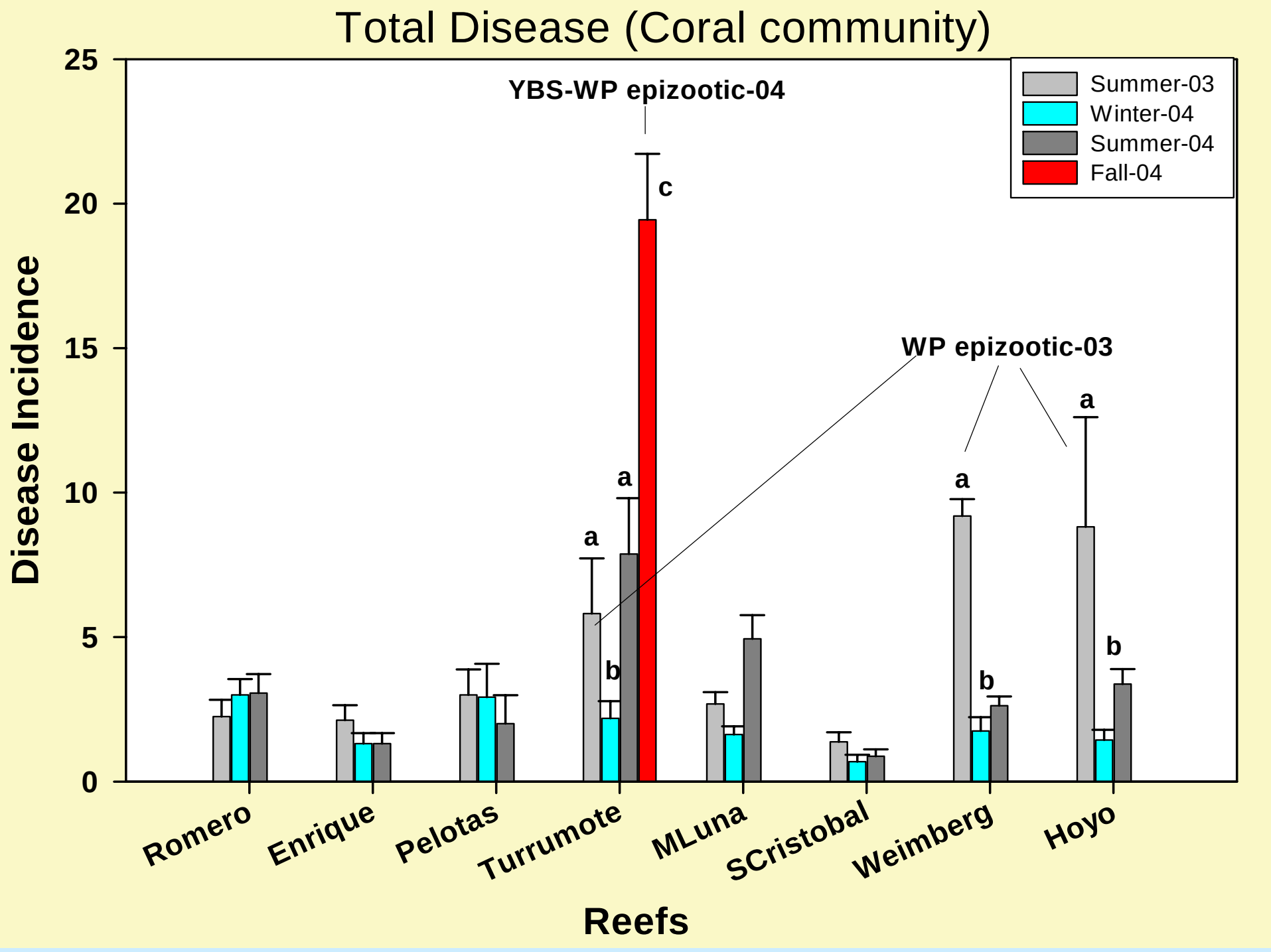


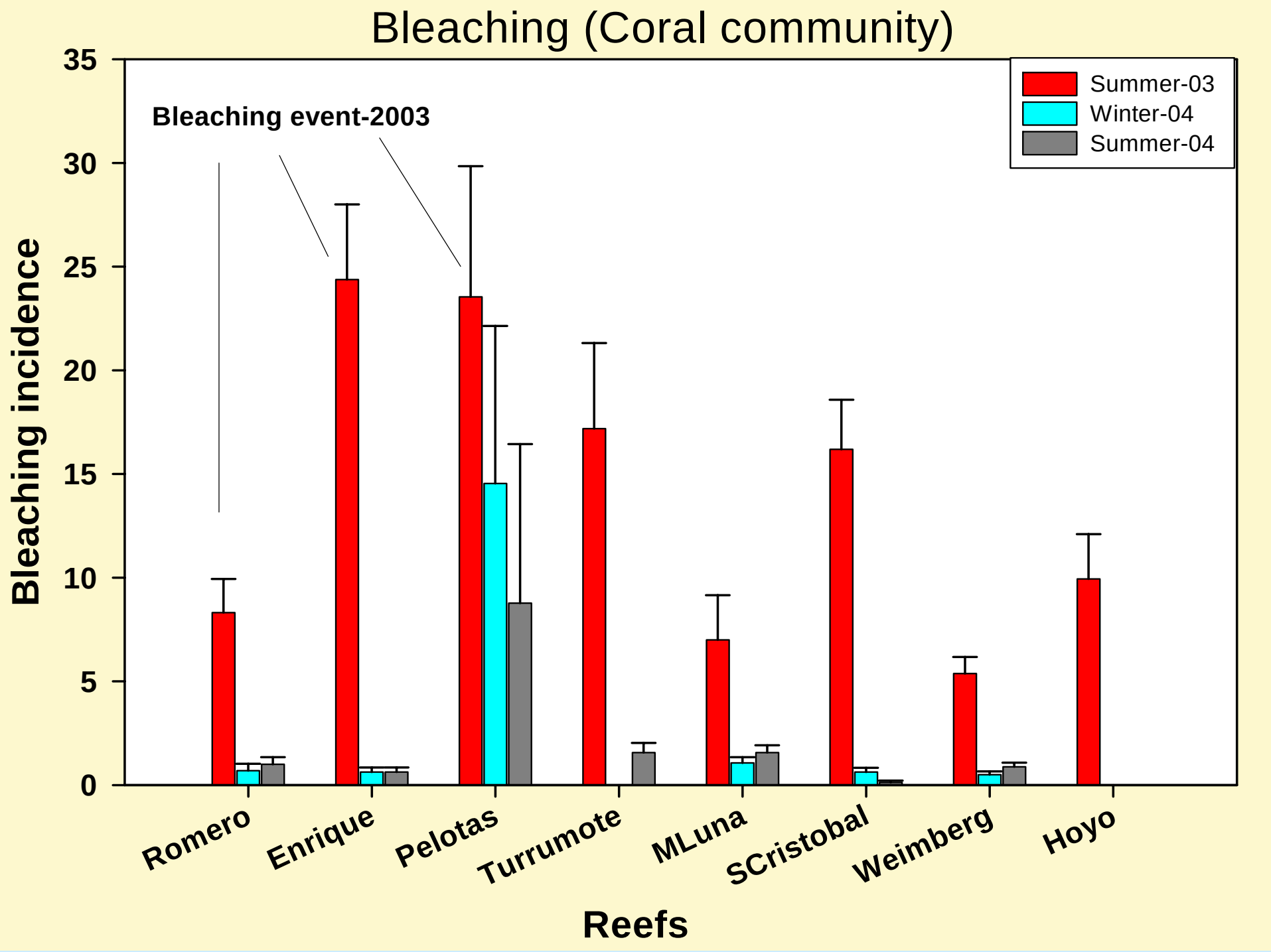


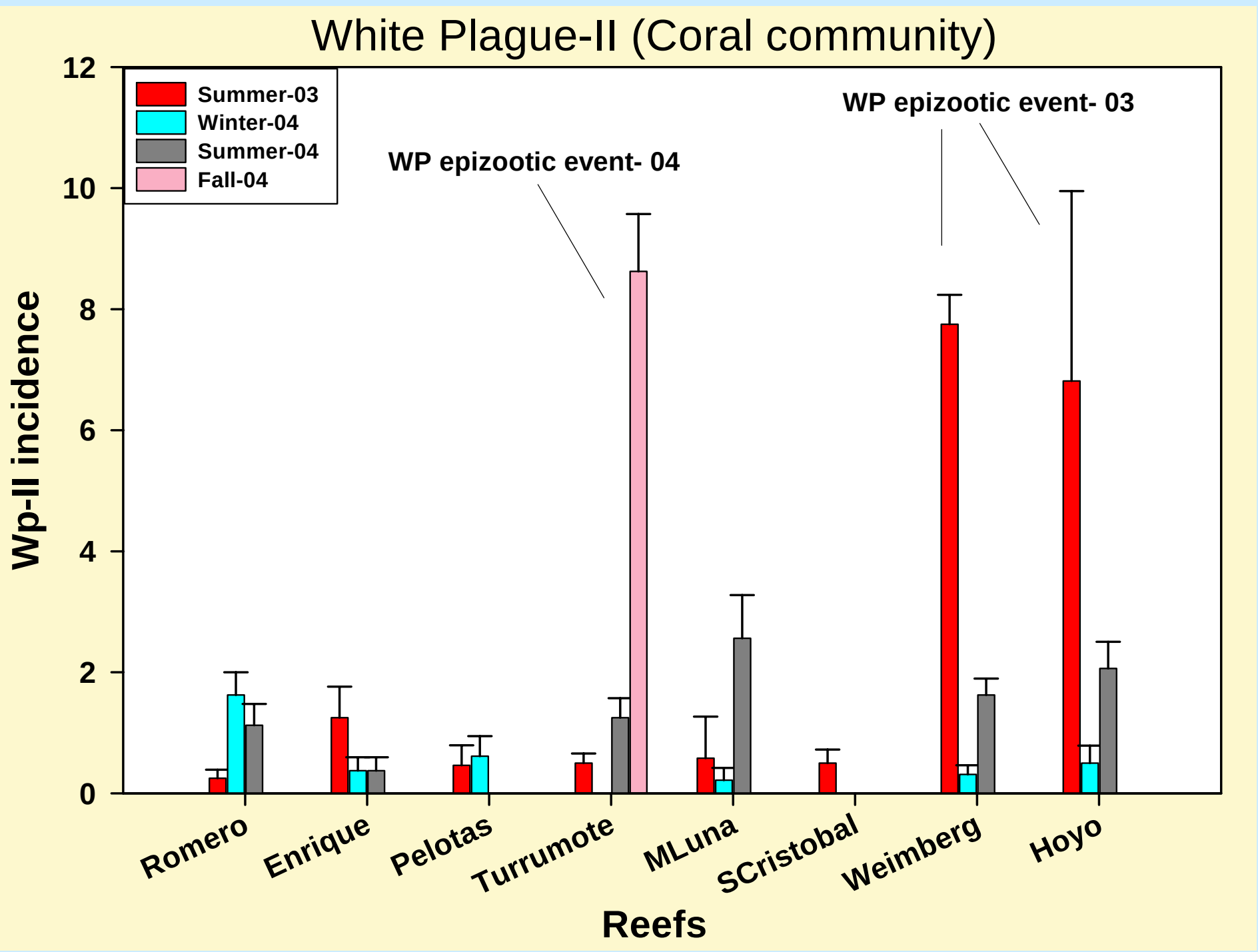


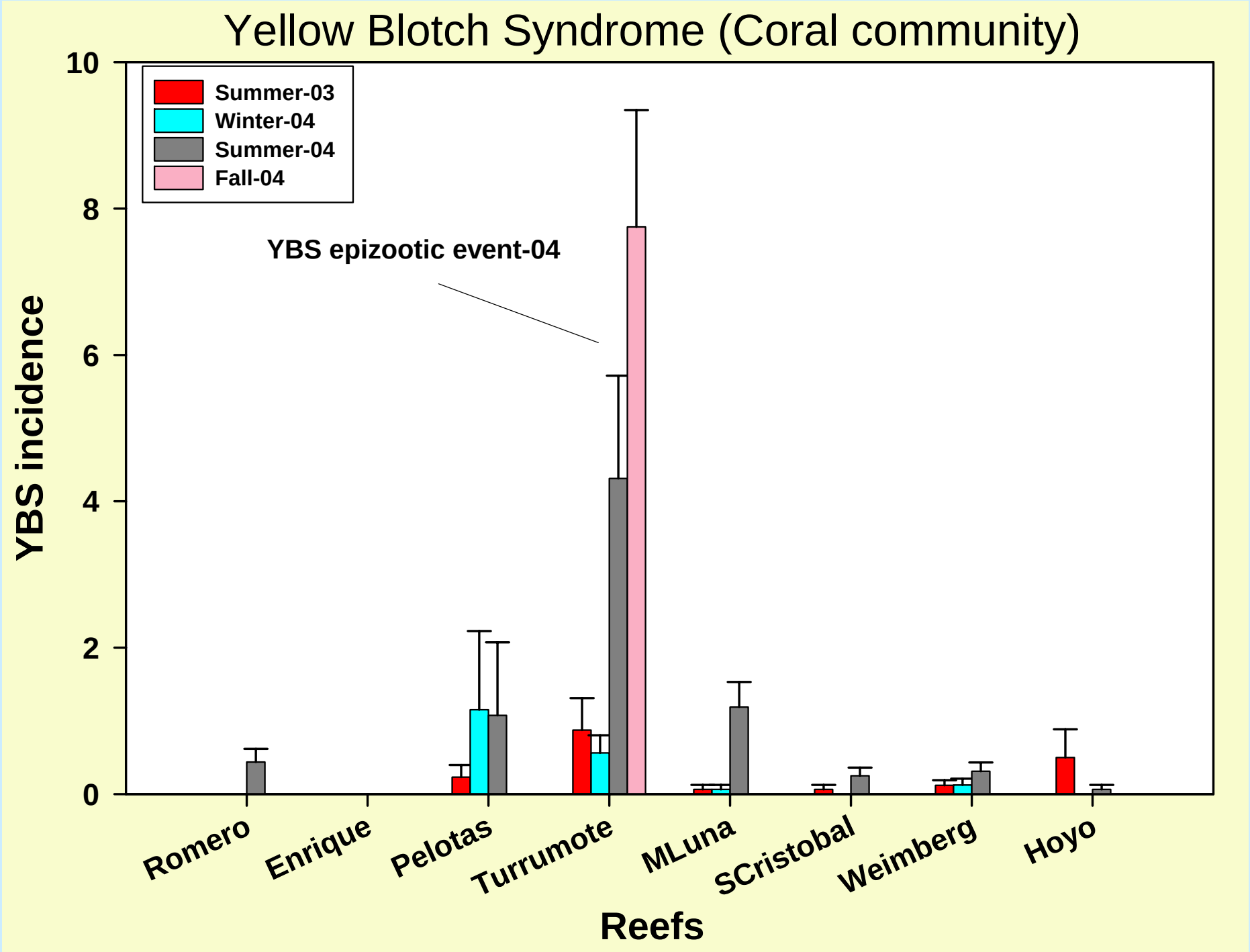
RESEARCH UPDATE

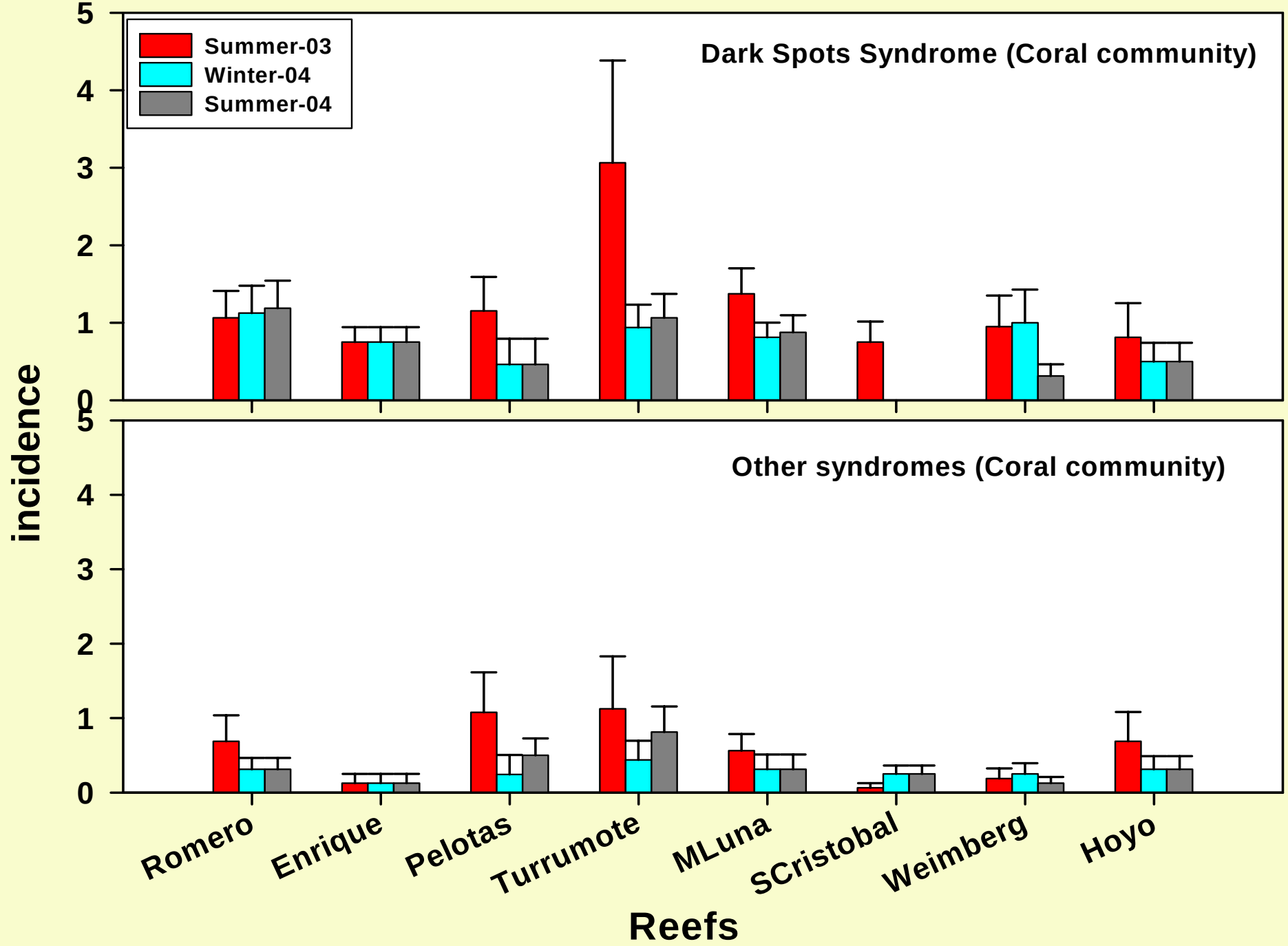


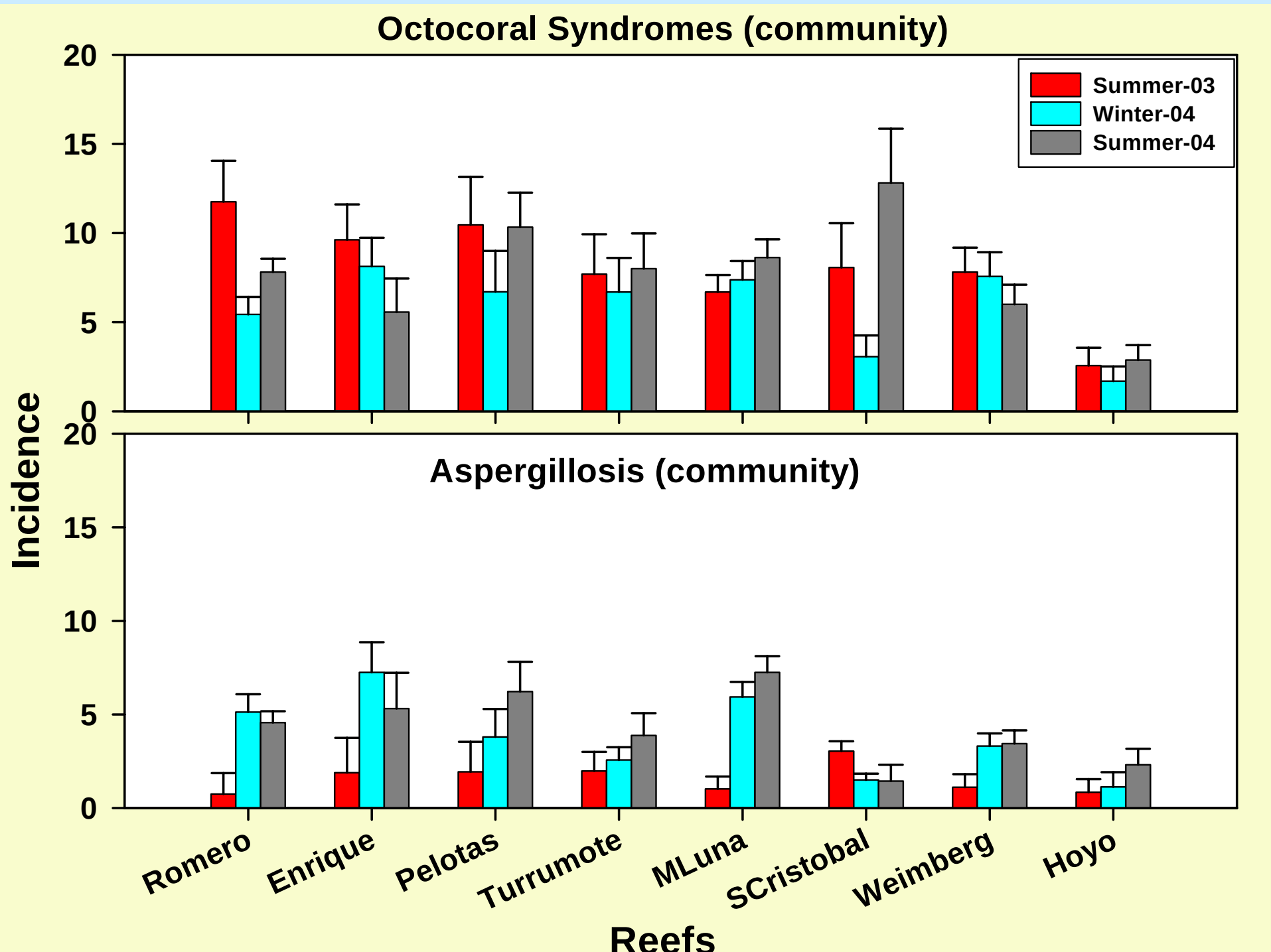

Total Disease (Coral community)
Disease Incidence
Reefs
Summer-03
Winter-04
Summer-04
Fall-04
YBS-WP epizootic-04
WP epizootic-03
a
b
c
Romero
Enrique
Pelotas
Turrumote
MLuna
SCristobal
Weimberg
Hoyo
0
5
10
15
20
25

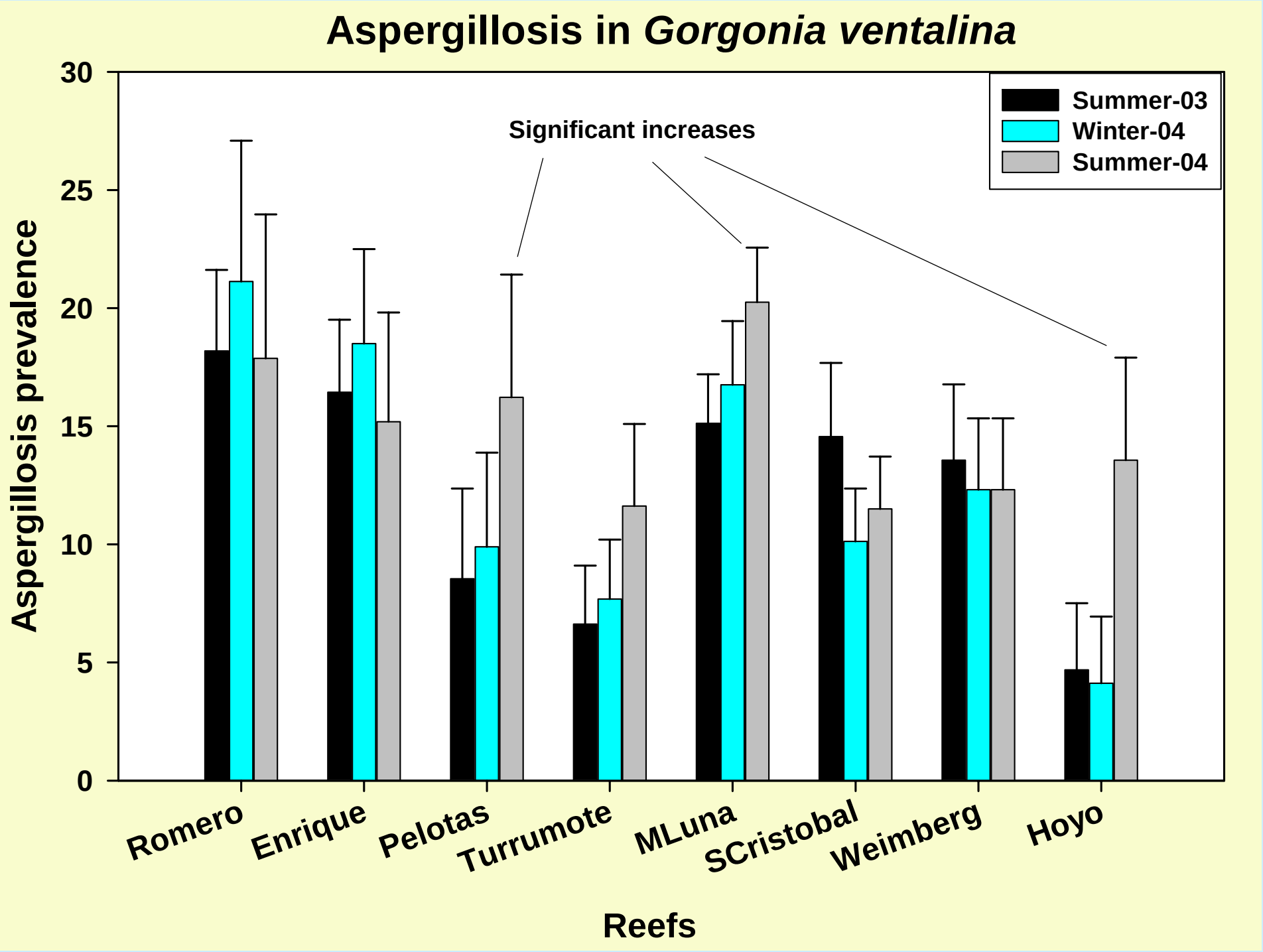

Bleaching (Coral community)
Bleaching event-2003
Summer-03
Winter-04
Summer-04
Bleaching incidence
35
30
25
20
15
10
5
0
Romero
Enrique
Pelotas
Turrumote
MLuna
SCristobal
Weimberg
Hoyo
Reefs


White Plague-II (Coral community)
Summer-03
Winter-04
Summer-04
Fall-04
WP epizootic event- 04
WP epizootic event- 03
Wp-II incidence
0
2
4
6
8
10
12
Romero
Enrique
Pelotas
Turrumote
MLuna
SCristobal
Weimberg
Hoyo
Reefs

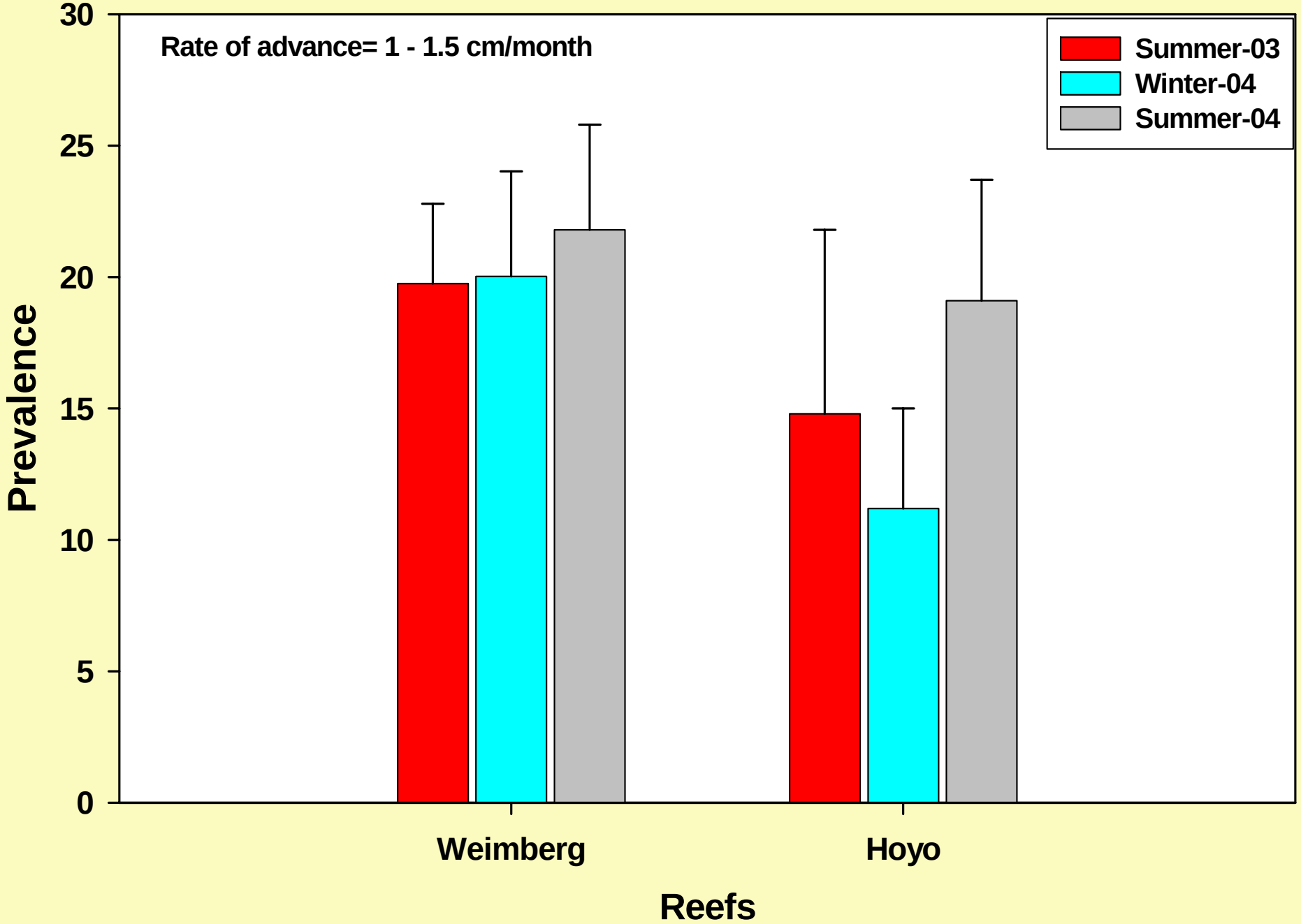

Yellow Blotch Syndrome (Coral community)
Summer-03
Winter-04
Summer-04
Fall-04
YBS epizootic event-04
YBS incidence
0
2
4
6
8
10
Romero
Enrique
Pelotas
Turrumote
MLuna
SCristobal
Weimberg
Hoyo
Reefs


Summer-03
Winter-04
Summer-04
Dark Spots Syndrome (Coral community)
Other syndromes (Coral community)
incidence
0
1
2
3
4
5
Romero
Enrique
Pelotas
Turrumote
MLuna
SCristobal
Weimberg
Hoyo
Reefs

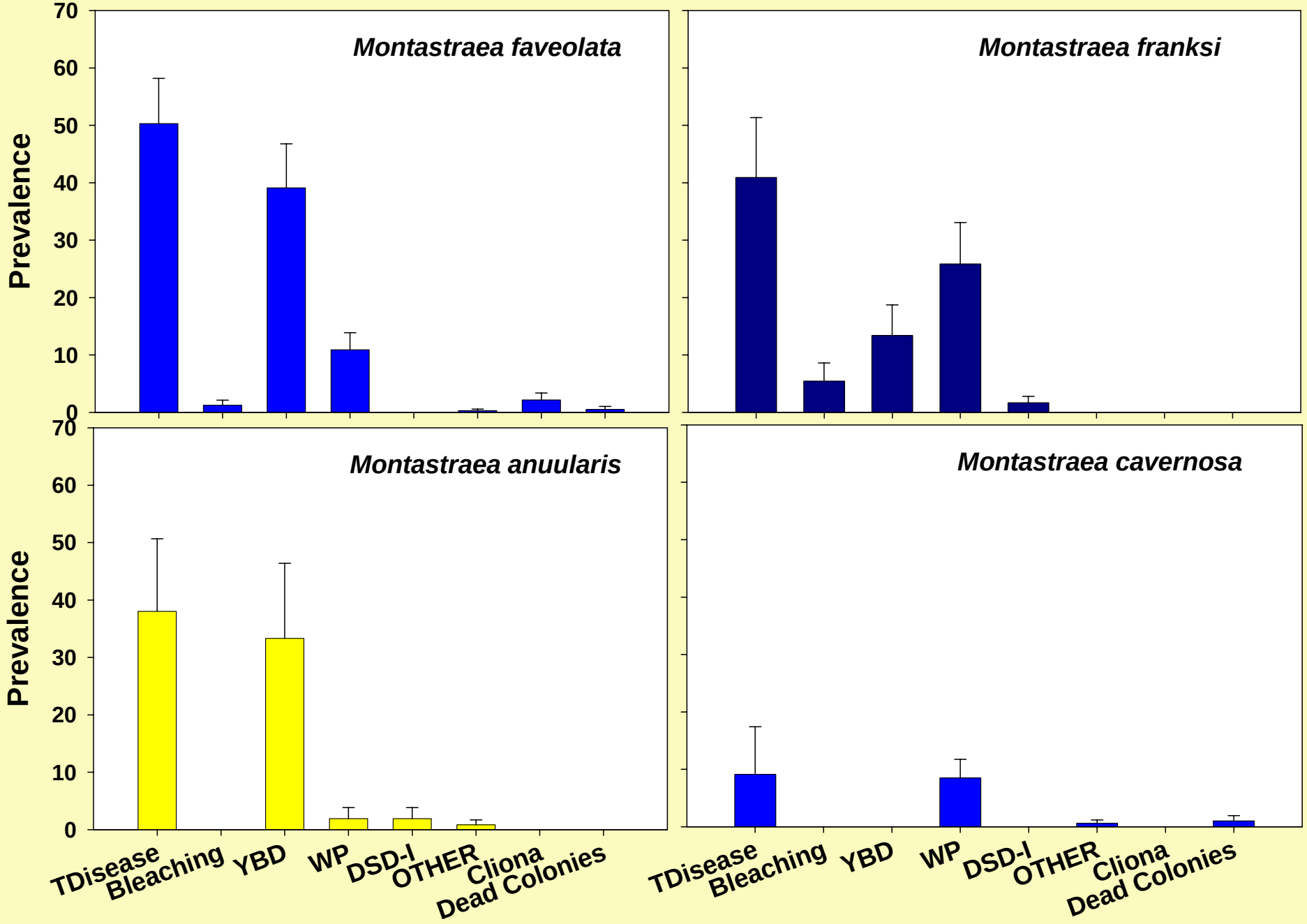

Octocoral Syndromes (community)
Summer-03
Winter-04
Summer-04
Aspergillosis (community)
Incidence
0
5
10
15
20
Romero
Enrique
Pelotas
Turrumote
MLuna
SCristobal
Weimberg
Hoyo
Reefs


Aspergillosis in Gorgonia ventalina
Summer-03
Winter-04
Summer-04
Significant increases
Aspergillosis prevalence
30
25
20
15
10
5
0
Romero
Enrique
Pelotas
Turrumote
MLuna
SCristobal
Weimberg
Hoyo
Reefs

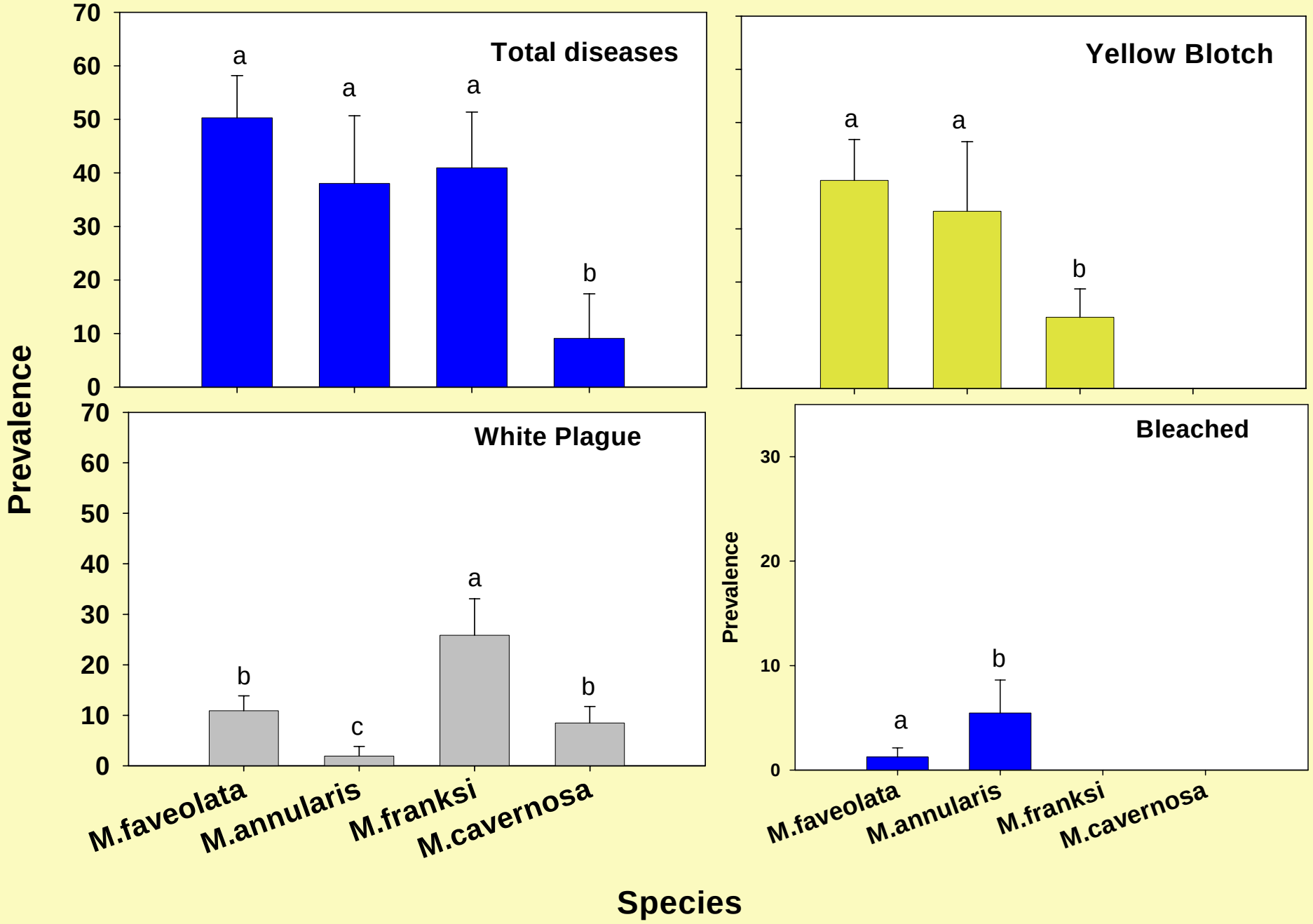
Coralline algae White Band Syndrome



Conditions affecting the different species of *Montastraea* in late summer of 2004 at Turrumote



Turrumote reef - Fall - 04 - *Montastraea spp*.



THANKS!