

ATKINS

St Lucia Coastal Habitat Mapping Project

Improving Our Understanding through
training and awareness raising



ENVISION



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**Linking land based
activities and natural
impacts to marine health
indicators in St. Lucia**



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Project overview

- Connecting land based practices to coastal habitat degradation
- Connecting natural occurrences to coastal habitat degradation
- Identifying key indicators to represent habitat condition

Project outcome

- Create a suite of indicators which will represent levels of degradation in the marine habitats
- Provide part of the training programme for monitoring coastal areas
- Create maps that will illustrate the links between anthropogenic practices and coastal degradation

Sampling Areas

Coral reefs



Mangroves



Seagrass beds



Important indicators

Coral Reefs

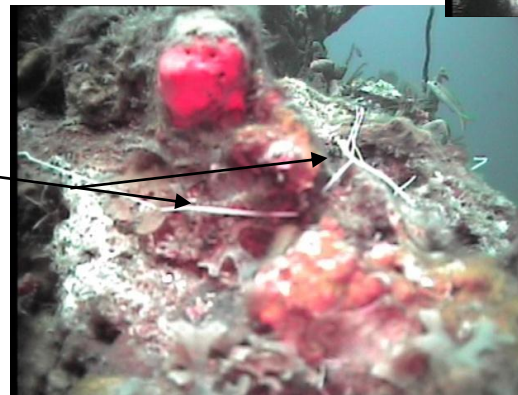
- Process variables

- Algal cover
- Sediment build up
- Sea urchin (*Diadema* spp.) density



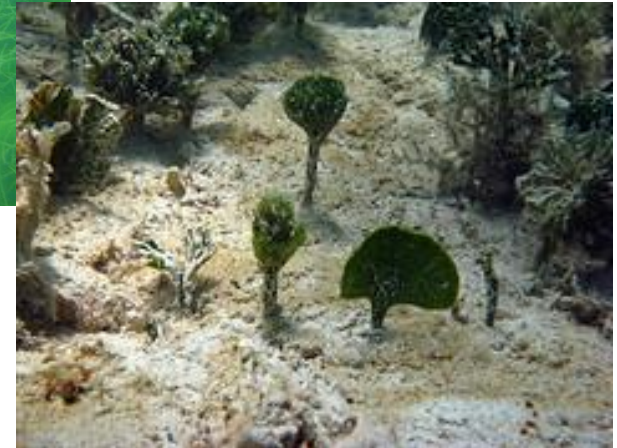
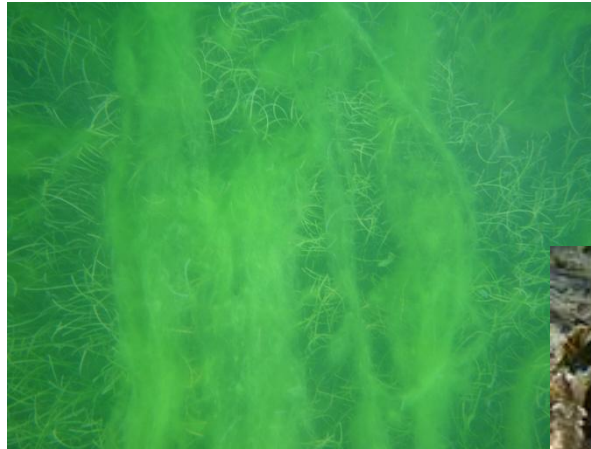
- State variables:

- Polychaete abundance
- Soft coral cover
- Sponge cover
- Fish abundance (large and small)



Seagrass beds

- Process variables
 - Epiphyte cover
 - Algal cover
- State variables
 - Sea urchin (*Tripneustes* spp.) density
 - Fish abundance
 - Calcareous green algae (Udotea and Penicillus spp.) cover
 - Species type
 - Halophila
 - Syringodium
 - Thalassium



- Mangroves

- Crabs



- New shoots



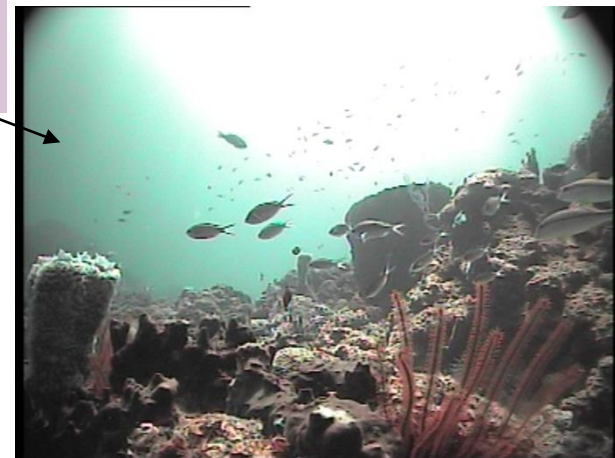
- Physical damage

- Litter



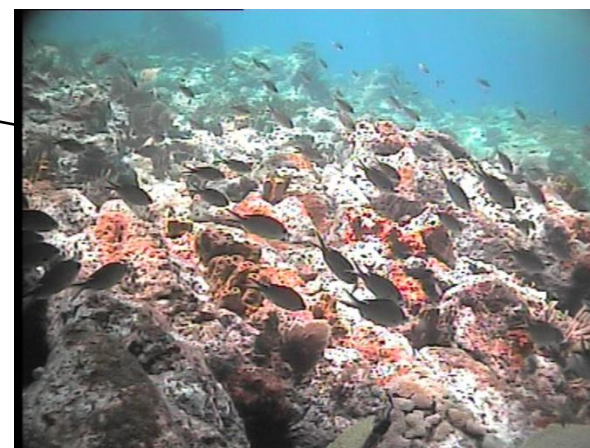
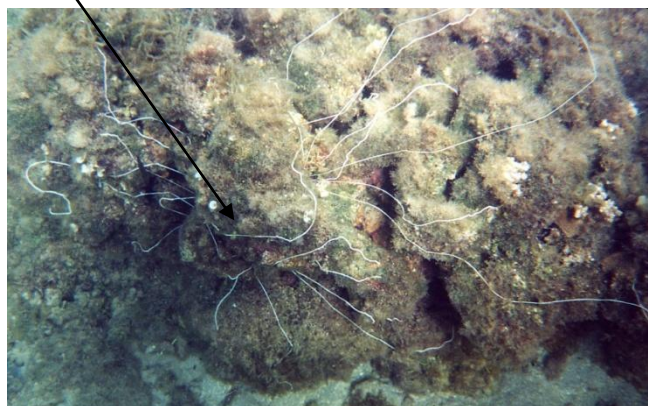
Indicator scales used (1)

| <u>Coral cover / Seagrass / Macroalgae / Sponge</u> | |
|-----------------------------------------------------|---------|
| Grade number | % cover |
| 0 – Absent | 0% |
| 1 – Sparse | < 5 % |
| 2 – Area with small patches of coral / grass etc. | 5 – 30% |
| 3 – Cover with small patches of sand | 30-60% |
| 4 – Almost complete cover | 60-95 % |
| 5 – Complete | 95-100% |



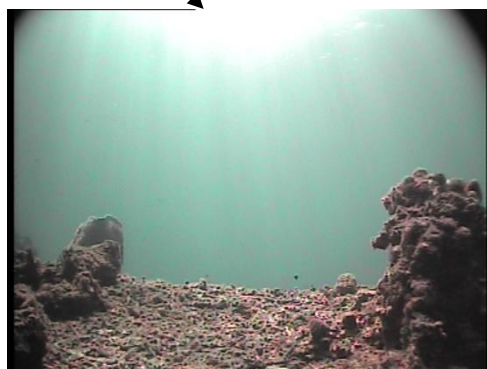
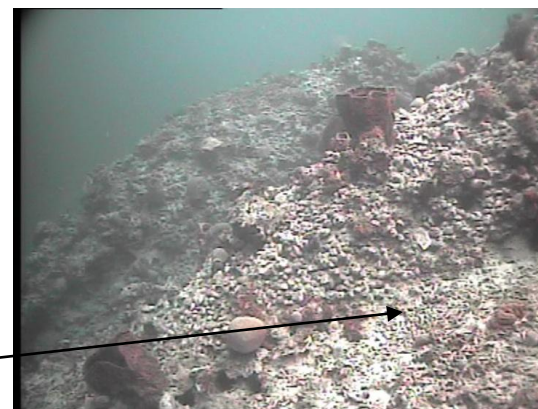
Indicator scales used (2)

| <u>Sea urchin / fish abundance / Polychaete</u> | |
|-------------------------------------------------|-------------|
| Grade number | % abundance |
| 0 – Absent | 0% |
| 1 – Sparse | < 5 % |
| 2 - Occasional | 5 – 30% |
| 3 – Common | 30-60% |
| 4 - Dense | 60 - 100% |



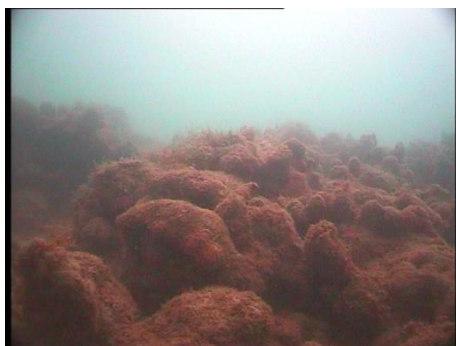
Indicator scales used (3)

| <u>Dead coral / bleached</u> | |
|------------------------------|---------|
| Grade number | % cover |
| 0 – Absent | 0% |
| 1 – Occasional | < 5% |
| 2 - Prevalent | 5 – 50% |
| 3 – Major outbreak | 50-100% |



Indicator scales used (4)

| <u>Sediment build-up</u> | |
|--------------------------|-------------|
| Grade number | % abundance |
| 0 | Absent |
| 1 | Light |
| 2 | Obvious |
| 3 | Heavy |



Group exercise

1. Demonstration of an assessment system (bioindicators) used to analyse drop-down video of marine habitats.
2. Participants split into 5-6 groups, dividing expertise amongst groups.
3. Groups analyse video drops, scoring health indicators against a range of pre-determined criteria.
4. Plenary discussion – is there consensus in scoring habitats based on health indicators? Is there a relationship between watershed status and health indicators in the marine environment?