

## Seven steps to describing lesions in corals

If you see a lesion, first scan the area to detect possible obvious causes (predation/competition). If the lesion cannot be explained, record the following:

1. Name of coral, location and date.
2. Lesion: **Tissue loss\***, **Growth anomaly**, **Discoloration**.
3. Lesion color (color chart bottom).
4. Distribution of lesion on colony.



5. If present, color of border surrounding lesion (color chart bottom).
6. Estimated percent of colony affected.



7. If tissue loss, pattern of algal colonization of skeleton (Purple-coral tissue; white-bare skeleton; green-algae).



## FAAMAI O AMU A AMERICAN SAMOA



Diseases can kill corals and be a manifestation of stressed reefs

## Acropora White Syndrome



**Hosts:** Plating *Acropora* sp.

**Distribution:** Tutuila, Ofu-Olosega

**Abundance:** Common

## Acropora Growth Anomaly



**Hosts:** *Acropora* sp.

**Distribution:** Tutuila, Ofu-Olosega

**Abundance:** Common

## EXAMPLE OF LESION DESCRIPTION



### 1. *Goniastrea*, Tutuila, 27 January 2005

2

D

3

H

4

C

5

J

6

B

7



## DISEASES OF AMERICAN SAMOAN CORALS

Corals, like all animals, are susceptible to diseases. Diseases can be caused by infectious (biotic) agents such as viruses, bacteria, fungi or parasites or by non-infectious (abiotic) agents such as temperature changes or poisons. In some regions, diseases have led to severe declines of coral reefs. Diseases in coral are manifested as lesions such as tissue loss, discoloration or growth anomalies. Some lesions such as tissue loss due to predation or discoloration due to competition with algae have known causes. However the causes of many lesions in corals remain unknown. These cards provide a standardized manner to describe lesions in Samoan corals and illustrate the more common diseases found on Samoan reefs. Lesions with known causes (cards with photos having an orange border) are also shown.

Thierry M. Work & Greta S. Aeby (2006). Funded in part by American Samoa (AS) Coral Reef Advisory Group, AS Department of Marine & Wildlife Resources, National Park Service, U.S. Fish & Wildlife Service, U.S. Geological Survey.



## *Acropora* White syndrome

**DESCRIPTION:** Diffuse areas of tissue loss revealing intact skeleton covered with algae. Distinctly separated from normal tissue by a band of bare white intact skeleton.

T

J

C



B

B

## *Acropora* Growth Anomaly



**DESCRIPTION:** Focal to multifocal, raised, irregular skeletal growths covered by pale to white tissue. Growth anomalies can appear smooth with reduced numbers of polyps or rough with elongated calices.

2

G

3

E

4

B

5



6

C

7



### **Goniastrea White Syndrome**



**Hosts:** *Goniastrea* sp.

**Distribution:** Ofu-Olosega

**Abundance:** Occasional

### **Leptoria White Syndrome**



**Hosts:** *Leptoria* sp.

**Distribution:** Ofu-Olosega

**Abundance:** Rare

### **Coralline Lethal Orange Disease**

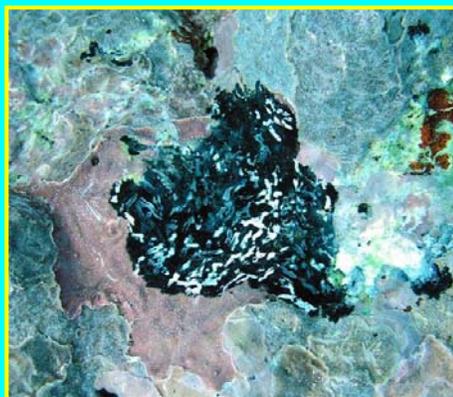


**Hosts:** Crustose coralline algae

**Distribution:** Tutuila, Ofu-Olosega

**Abundance:** Occasional to common

### **Coralline Black Fungal Disease**



**Hosts:** Crustose coralline algae

**Distribution:** Tutuila, Ofu-Olosega

**Abundance:** Occasional

## Goniastrea White Syndrome

**DESCRIPTION:** Diffuse, distinct, areas of tissue loss revealing intact white skeleton that sometimes progresses to being covered in algae. Distribution of tissue loss predominantly at the base of the colony but can encompass the majority of the colony.

2 3 4 5 6 7  
T J C  C B

## Leptoria White Syndrome

**DESCRIPTION:** Diffuse, distinct, areas of tissue loss revealing intact white skeleton sometimes covered by a thin patina of algae. Tissue loss occurs predominantly at the base of the colony but can encompass the majority of the colony.

T J C  C A

## Coralline Lethal Orange Disease

**DESCRIPTION:** Diffuse, irregular, distinct areas of orange discoloration separating abnormal white from normal pink coralline algae.

2 3 4 5 6 7  
D A J C  C

## Coralline Black Fungal Disease

**DESCRIPTION:** Diffuse mats of dark material covering crustose coralline algae.

2 3 4 5 6 7  
D I C  C

### **Montipora Growth Anomaly**



**Hosts:** *Montipora* sp.

**Distribution:** Tutuila, Ofu-Olosega

**Abundance:** Occasional

### **Pavona Dark Spots**



**Hosts:** *Pavona* sp.

**Distribution:** Tutuila

**Abundance:** Occasional

### **Pocillopora White Band**



**Hosts:** *Pocillopora* sp.

**Distribution:** Tutuila

**Abundance:** Rare

### **Porites Tissue Loss**



**Hosts:** *Porites* sp.

**Distribution:** Tutuila, Ofu-Olosega

**Abundance:** Occasional

### Montipora Growth Anomaly



**DESCRIPTION:** Focal to multifocal, raised, irregular skeletal growths covered by pale to white tissue. Growth anomalies can be smooth with reduced numbers of calices or rough with elongated calices.

2	3	4	5	6	7
G	J	A		A	

### Pavona Dark Spots

**DESCRIPTION:** Variably sized, oblong to irregular, distinct areas of brown discoloration. Microscopy reveals most of these to be associated with endolithic fungal infiltrates.

2	3	4	5	6	7
D	E	B		B	

### Pocillopora White Band

**DESCRIPTION:** Diffuse areas of tissue loss, primarily at the base of branches, revealing a band of intact white skeleton separating normal tissue from algae covered skeleton.

2	3	4	5	6	7
T	J	C		B	B

### Porites Tissue Loss

**DESCRIPTION:** Widespread, indistinct, irregular areas of tissue loss revealing intact white skeleton with varying degrees of algal coverage. Microscopy has occasionally revealed infiltrations with sponges.

2	3	4	5	6	7
D	J	C		C	A

### **Porites Focal Bleaching**



**Hosts:** *Porites* sp.

**Distribution:** Tutuila, Ofu-Olosega

**Abundance:** Occasional

### **Lobophyllia Tissue Loss**



**Hosts:** *Lobophyllia* sp.

**Distribution:** Tutuila

**Abundance:** Occasional

### **Goniastrea Banded Discoloration**



**Hosts:** *Goniastrea* sp.

**Distribution:** Ofu-Olosega

**Abundance:** Rare to Occasional

### **Porites Growth Anomaly**



**Hosts:** *Porites* sp.

**Distribution:** Tutuila, Ofu-Olosega

**Abundance:** Occasional

### Porites Focal Bleaching



**DESCRIPTION:** Focal areas of distinct bleaching. Bleached areas can be oblong, linear, or circular. Sometimes encompassing only partial polyps.

2 3 4 5 6 7  
D J A  A

### Lobophyllia Tissue Loss

**DESCRIPTION:** Diffuse, distinct, irregular areas of tissue loss revealing intact bare white skeleton.

2 3 4 5 6 7  
T J C  B A

### Goniastrea Banded Discoloration

**DESCRIPTION:** Diffuse, irregular, distinct areas of grey to tan discoloration delineated from surrounding normal tissue by thin white band.

2 3 4 5 6 7  
T J C  C B

### Porites Growth Anomaly

**DESCRIPTION:** Diffuse, distinct, amorphous areas of excessive raised skeletal growth overlaid by pale tissue. Calices often chaotic, enlarged, or reduced in number.

2 3 4 5 6 7  
G H A  A

### **Leptastrea Growth Anomaly**



**Hosts:** *Leptastrea* sp.

**Distribution:** Tutuila

**Abundance:** Rare

### **Goniastrea Growth Anomaly**

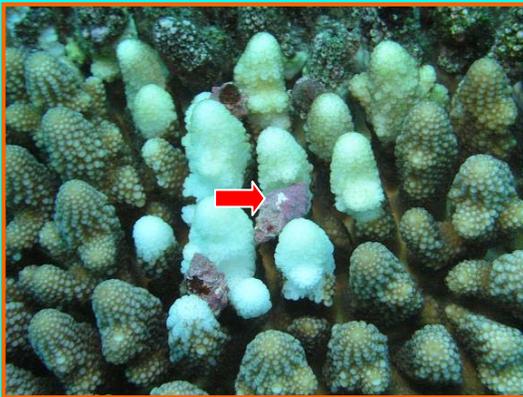


**Hosts:** *Goniastrea* sp.

**Distribution:** Tutuila

**Abundance:** Rare

### **Snail Predation**



Affects various species (*Acropora*, *Montipora*) and manifests by tissue loss and bare skeleton associated with presence of snails (arrow).

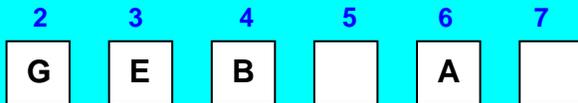
### **Goniastrea Barnacle Infestation**



Note barnacles (arrow inset) embedded in coral.

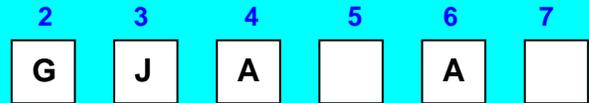
## *Leptastrea* Growth Anomaly

**DESCRIPTION:** Focal to multi-focal, distinct, irregular clusters of enlarged, variably sized, raised calices covered by tissue that is more darkly pigmented than surrounding normal tissue.

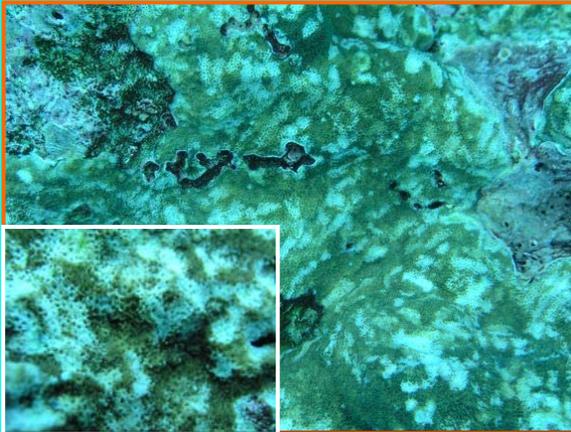


## *Goniastrea* Growth Anomaly

**DESCRIPTION:** Focal, raised, distinct areas of skeletal growth, composed of enlarged, irregularly shaped calices covered by pale tissue.



## Fish Bite



Affects various corals. Note distinct linear to amorphous patches of tissue loss revealing eroded bare skeleton.

## *Favia* Mucus Sheathing



Note white material (mucus) covering polyps.