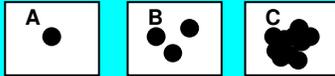


## Seven steps to describing lesions in corals

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).



## DISEASES OF HAWAIIAN CORALS



Diseases can kill corals and can be a manifestation of stressed reefs.

## Montipora Banded Tissue loss



**Hosts:** *M. patula*

**Distribution:** Oahu, Kauai

**Abundance:** Rare

## Montipora Growth Anomaly



**Hosts:** *M. capitata*, *M. patula*

**Distribution:** Main and northwestern Hawaiian islands (NWHI)

**Abundance:** Occasional

## EXAMPLE OF LESION DESCRIPTION



1. *Porites lobata* (lobe coral), Maui, 27 July 2003.

2 3 4 5 6 7  
T J A B A A

## DISEASES OF HAWAIIAN 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. Disease in a coral can be manifested as tissue loss, discoloration or growth anomalies. However, other processes such as tissue loss due to predation or discoloration from competition with algae or other organisms can also cause these lesions. These cards provide a standardized manner to describe lesions in Hawaiian corals and illustrate the more common syndromes found on Hawaiian reefs. Lesions with known causes are also shown. For additional information, please see the following websites:

[www.nwhc.usgs.gov/hfs/Corals.htm](http://www.nwhc.usgs.gov/hfs/Corals.htm)  
[www.hawaii.edu/HIMB/HawaiiCoralDisease/](http://www.hawaii.edu/HIMB/HawaiiCoralDisease/)

Thierry M. Work & Greta S. Aeby (2006). Funded partly by Bishop Museum, Hawaii Coral Reef Initiative, Hawaii Division of Aquatic Resources, Hawaii Institute of Marine Biology, and the U.S. Geological Survey.

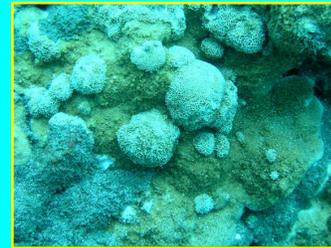


## Montipora Banded Tissue Loss

**DESCRIPTION:** Distinct areas of tissue loss revealing intact skeleton. Dark band separates bare skeleton from live tissue, and exposed skeleton may be partly covered with algae.

2 3 4 5 6 7  
T H C I B C

## Montipora Growth Anomaly



**DESCRIPTION:** Distinct areas of excessive skeletal growth. Tissue overlying growth anomaly usually pale to white. Growth anomalies can be smooth with reduced number of calices or rough with elongated calices.

2 3 4 5 6 7  
G J B [ ] C [ ]

### **Montipora Tissue Loss**



**Hosts:** *M. capitata*, *M. patula*,  
*M. turgescens*

**Distribution:** Oahu, Maui, NWHI

**Abundance:** Occasional to common

### **Montipora Multi-focal Tissue Loss**



**Hosts:** *M. capitata*

**Distribution:** Oahu, northwestern  
Hawaiian islands

**Abundance:** Rare to Occasional

### **Porites Discolored Tissue Thinning**



**Hosts:** *P. lobata*

**Distribution:** NWHI

**Abundance:** Occasional

### **Porites Growth Anomaly**



**Hosts:** *P. evermanni*, *P. compressa*,  
*P. lobata*, *P. monticulosa*

**Distribution:** Main and northwestern  
Hawaiian islands

**Abundance:** Occasional to common

### Montipora Tissue loss

**DESCRIPTION:** Distinct, diffuse areas of tissue loss revealing intact white skeleton. Exposed skeleton may be partially covered with algae and thin band of bleached tissue may be seen at interface between skeleton and intact tissue.

2 T 3 J 4 C 5  6 C 7 A

### Montipora Multi-focal Tissue loss

**DESCRIPTION:** Multiple, distinct, circular to irregular areas of tissue loss revealing intact white skeleton. Lesions can coalesce to form larger areas.

2 T 3 J 4 B 5  6 A 7 A

### Porites Discolored Tissue Thinning

**DESCRIPTION:** Diffuse, indistinct areas of tissue thinning and pale discoloration poorly defined from surrounding healthy tissue. Polyps are usually shrunken or reduced.

2 D 3 H 4 C 5  6 B 7

### Porites Growth Anomaly



**DESCRIPTION:** Variably sized, distinct raised areas of skeletal growth. Tissue overlying growth anomaly generally paler. Calyx formation appears chaotic or calices enlarged.

2 G 3 E 4 C 5  6 A 7

### **Porites Trematodiasis**



**Hosts:** *P. compressa*, *P. evermanni*,  
*P. lobata*

**Distribution:** Main and northwestern  
Hawaiian islands

**Abundance:** Common

### **Porites Swollen Discolored Patches**



**Hosts:** *P. evermanni*

**Distribution:** Hawaii

**Abundance:** Rare

### **Porites Brown Necrotizing Disease**



**Hosts:** *P. lobata*

**Distribution:** Northwestern Hawaiian  
islands

**Abundance:** Rare

### **Porites Bleaching and Tissue Loss**



**Hosts:** *P. compressa*

**Distribution:** Oahu

**Abundance:** Occasional

### **Porites Trematodiasis**

**DESCRIPTION:** 3-5 mm distinct, multifocal to coalescing, pink to pale swollen raised nodules, clustered or widely distributed on coral.

2	3	4	5	6	7
D	B	B		B	

### **Porites Swollen Discolored Patches**

**DESCRIPTION:** Variably sized, distinct irregular areas of swollen tissue with pale discoloration occasionally surrounded by irregular and intermittent variably sized pink border.

2	3	4	5	6	7
D	H	C	B	B	

### **Porites Brown Necrotizing Disease**

**DESCRIPTION:** Diffuse, distinct areas of brown discoloration characterized by a gelatinous texture and loss of recognizable polyp structure.

2	3	4	5	6	7
D	E	C		B	

### **Porites Bleaching and Tissue Loss**

**DESCRIPTION:** Widespread, indistinct, irregular areas of bleaching intermixed with patches of tissue loss revealing intact bare white skeleton.

2	3	4	5	6	7
T	J	C		B	A

### **Porites Tissue Loss**



**Hosts:** *P. compressa*, *P. evermanni*,  
*P. lobata*

**Distribution:** Main and northwestern  
Hawaiian islands

**Abundance:** Common

### **Porites Multi-focal Tissue Loss**

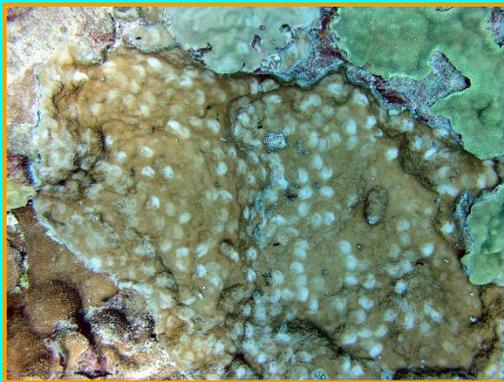


**Hosts:** *P. lobata*

**Distribution:** Oahu

**Abundance:** Rare

### **Montipora Fish Bite**



Note uniformly sized and shaped lesions.

### **Pocillopora White Band**



**Hosts:** *P. meandrina*

**Distribution:** Northwestern Hawaiian  
islands

**Abundance:** Rare

### *Porites* Tissue Loss

**DESCRIPTION:** Diffuse areas of tissue loss revealing intact skeleton that may occasionally be covered with turf algae. Usually with a border of discolored (white or pink) tissue or mucus.

2 3 4 5 6 7  
T H A [ ] A C

### *Porites* Multi-focal Tissue Loss

**DESCRIPTION:** Variably sized, distinct multi-focal irregular areas of pale swelling or tissue loss, revealing intact skeleton bordered by a thin band of pale swollen tissue.

2 3 4 5 6 7  
T H B J A A

### *Montipora* Sedimentation



Note deposition of sediments.

### *Pocillopora* White Band

**DESCRIPTION:** Diffuse area of tissue loss revealing intact skeleton, covered with algae and separated from normal tissue by a linear band of bare, white intact skeleton.

2 3 4 5 6 7  
T J C [ ] A B

### ***Porites* Algal Irritation**



Note areas of pink irritation of coral (arrow) adjacent to algae brushing up against coral.

### ***Acropora* White Syndrome**



**Hosts:** *A. cytherea*

**Distribution:** French Frigate Shoals

**Abundance:** Common

### ***Pocillopora* Snail Predation**



Note patches or bare skeleton associated with adjacent snails (arrow).

### ***Acropora* Growth Anomaly**

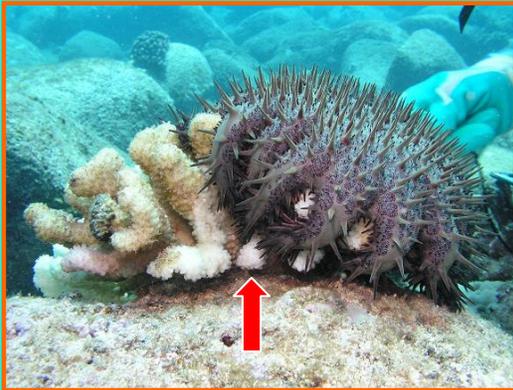


**Hosts:** *A. cytherea*

**Distribution:** French Frigate Shoals

**Abundance:** Occasional

### *Pocillopora* Crown-of-Thorns Starfish Predation



Note areas of bare coral skeleton associated with presence of starfish (arrow).

### *Acropora* White Syndrome

**DESCRIPTION:** Distinct, diffuse areas of tissue loss revealing intact skeleton covered with algae and separated from normal tissue by a band of bare white intact skeleton.

2 3 4 5 6 7  
T J C [ ] C B

### *Pocillopora* Kahe Crab



These crabs form small holes (arrow) in branches that are often rimmed with purple.

### *Acropora* Growth Anomaly

**DESCRIPTION:** Focal to multi-focal, 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 3 4 5 6 7  
G E B [ ] C [ ]