

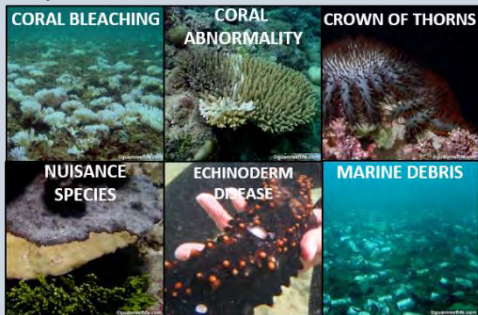
# Help protect Guam's reefs by reporting coral reef impacts!

Don't forget! When you get out on the water, enable the **GPS** on your camera.



## What to include in your report:

- **Activity** (Diving, snorkeling, swimming, fishing, etc.)
- **Date and location** (Beach name, dive site, closest landmark, etc.) – GPS coordinates if available
- **Type of impact:**










- **Type(s) of coral** (or other organism) impacted
- **Depth** of observed impact
- **Number or percent** of impacted colonies
- **Description** of impact, such as:
  - ✓ Severity of bleaching (mild, moderate, severe)
  - ✓ Shape, size, and color of lesions or abnormality
  - ✓ Number and size of crown of thorns sea stars
  - ✓ Type and amount of marine debris

### If you see something, say something!

Text **688-DAWR (3297)** if you witness marine preserve violations, someone damaging corals, dangerous marine debris, or other immediate concerns of this nature.

# TYPES OF CORAL

	<b>Small branching corals</b>
	<ul style="list-style-type: none"> <li>• Small branches/fingers</li> <li>• Discrete coral heads</li> </ul>
	<b>Large branching/pillar</b>
	<ul style="list-style-type: none"> <li>• Vertical growth, not widespread branching</li> </ul>
	<b>Staghorn corals</b>
	<ul style="list-style-type: none"> <li>• Sharp-tipped branches</li> <li>• Pronounced corallites</li> </ul>
	<b>Foliose ('lettuce') corals</b>
	<ul style="list-style-type: none"> <li>• Steep ridges w/polyps found in valleys</li> </ul>
	<b>Massive corals</b>
	<ul style="list-style-type: none"> <li>• Smooth ball/boulder</li> <li>• Small, crowded polyps</li> </ul>
	<b>Encrusting corals</b>
	<ul style="list-style-type: none"> <li>• Form sheets over hard surfaces</li> </ul>
	<b>Soft corals</b>
	<ul style="list-style-type: none"> <li>• Feathery tentacles</li> <li>• Flowy, no hard skeleton</li> </ul>

Photos courtesy of guamreefife.com

### Coral reef etiquette:

1. Never touch, kick, or stand on coral. Practice neutral buoyancy.
2. Don't feed fish – it disturbs their natural behavior.
3. If you see litter near or in the water (or anywhere!) pick it up.
4. Wear reef safe sunscreen.

Report coral reef impacts at [EORMarianas.org](http://EORMarianas.org)

Funded by NOAA CRCP grant no. NA13NOS4820012

# CORAL BLEACHING



Eyes of the Reef  
EORMarianas.org

## What to include in your report:

- **Location and depth** of bleaching
- **Type(s) of coral** (or other organisms) bleached
- **Number** of bleached colonies
- **Severity** of bleaching:
  - ✓ **MILD:** 1-10% of coral colonies are pale or bleached
  - ✓ **MODERATE:** 10-50% of all colonies are pale or bleached
  - ✓ **SEVERE:** 51%-90% of all colonies are bleached
  - ✓ **VERY SEVERE:** Over 90% of all colonies are bleached

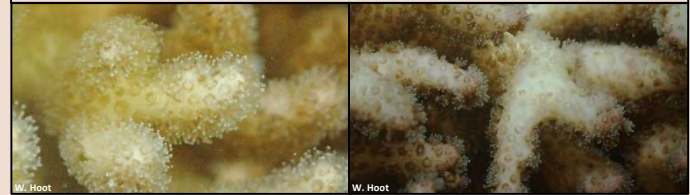


## How to identify bleaching:

- **Paling:** upper and/or most exposed surfaces will be lighter color than rest of colony – look at the bottom of the colony or between branches to detect a difference in color
- Upper surfaces or whole colony will be **bright white** if fully bleached – colony appears to “glow”
- Bleached corals can also “**fluoresce**” like a highlighter
- Look closely at polyps – bleached corals are alive, tissue is intact
- Recently dead corals will be bare, white skeleton with some thin, usually bright green algae
- White tips of branching colonies are growth tips, not bleaching

# CORAL BLEACHING

## Paling branching corals with intact tissue (polyps)



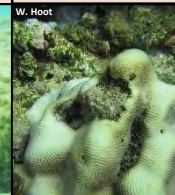
## Giant clams (*Tridacna*), anemones, and fire corals bleach too



### Paling



### Paling



### Fluorescing



### Bleaching



## Growth tips – not bleaching

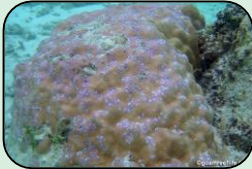


## Recent mortality



Funded by NOAA CRCP grant no. NA13NOS4820012

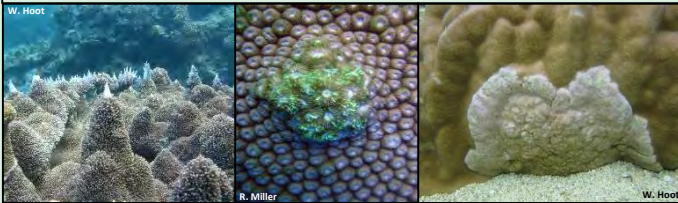
# CORAL ABNORMALITIES



## What to include in your report:

- **Location and depth** of abnormality
- **Type(s) of coral** (or other organisms) affected
- **Number** of affected colonies
- **Description** of abnormalities:
  - ✓ LESIONS? What do they look like? How big?
  - ✓ COLORATION? Tissue loss?
  - ✓ DISTINCT FEATURES of the abnormalities?

**Growth anomalies:** Excess skeletal growth, paler tissue, corallites are different size, shape, or density



**Pigmentation response:** Often bright pink, near bite marks



**Irregular bleaching:** tissue still present, pattern unlike thermal bleaching

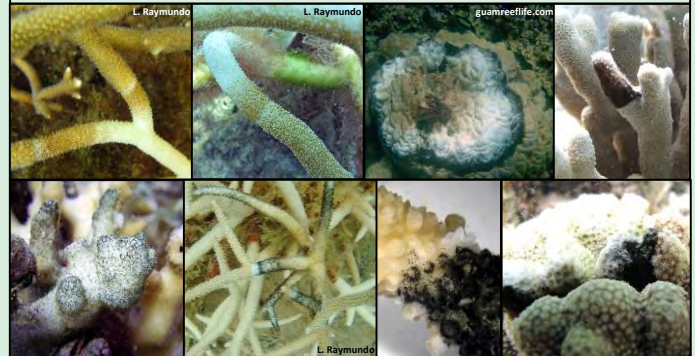


# CORAL ABNORMALITIES

**White syndrome:** tissue loss resulting in bare skeleton, irregular pattern, may see dead coral with algae in center of affected area



**Colored band diseases:** *black band* or *brown band* between bare skeleton and living tissue; *skeletal eroding band* has “black specks” on skeleton



**Black/grey death**



**Ulcerative white spots**



Photos by L. Raymundo, D. Burdick, and R. Miller

Funded by NOAA CRCP grant no. NA13NOS4820012

## NUISANCE SPECIES



### What to include in your report:

- **Location and depth** of nuisance species
- **Type(s) of nuisance species:**
  - ✓ **ANGEL HAIR ALGAE** (*Chaetomorpha*)
  - ✓ **GOLDEN NOODLE ALGAE** (*Chrysocystis*, *Chrysophaeum*)
  - ✓ **CYANOBACTERIA**
  - ✓ **TERPIOS**
  - ✓ **DRUPELLA SNAIL**
- **Estimated total area** affected (m<sup>2</sup>)
- **Type(s) of coral** affected (if applicable)
- **Number** of affected colonies (if applicable)

**Angel hair algae:** bright green, thin and stringy, like tangled "fishing line"

**Golden noodle algae:** yellowish green, slimy, falls apart easily



Funded by NOAA CRCP grant no. NA13NOS4820012



## NUISANCE SPECIES

**Cyanobacteria:** blooms after heavy rain, forms "slime blanket"



**Terpios:** grey sponge, hard sheets, no protruding parts



**Drupella snail:** pink/red algae on shell, often on branching corals, leaves bare skeleton



## CROWN OF THORNS SEA STARS (COTS)

### What to include in your report:

- **Location and depth** of COTS
- **Estimated size** (diameter)
- **Estimated number** of COTS
- **Type(s) of coral** affected



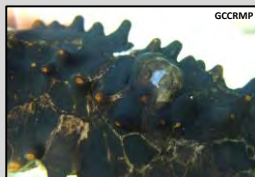
Report coral reef impacts at [EORmarianas.org](http://EORmarianas.org)

## ECHINODERM DISEASE



### What to include in your report:

- **Location and depth** of diseased echinoderm(s)
- **Type(s) of echinoderm(s)** affected:
  - ✓ BALATE (Sea cucumbers)
  - ✓ SEA STARS
  - ✓ URCHINS
- **Estimated number** of diseased echinoderms
- **Description** of lesions (color, size, etc.)



## MARINE DEBRIS

### What to include in your report:

- **Location and depth** of debris
- **Type(s) of marine debris:**
  - ✓ PLASTIC
  - ✓ FISHING GEAR
  - ✓ METAL
  - ✓ OTHER
- **Estimated total area** affected (m<sup>2</sup>)
- **Approximate number** of items per m<sup>2</sup>
- **Type(s) of coral** affected (if applicable)
- **Number** of affected colonies (if applicable)

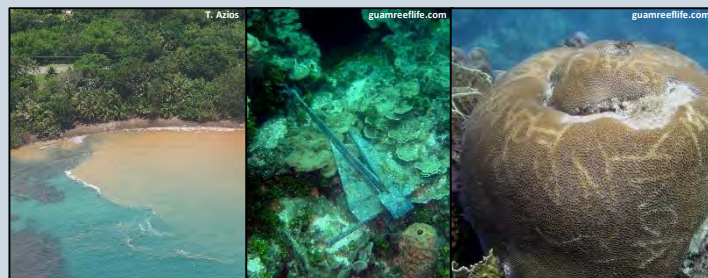


## OTHER REEF IMPACTS



### What to include in your report:

- **Location and depth** of observed impact
- **Type(s) of impact:**
  - ✓ RECREATIONAL MISUSE
  - ✓ REEF GRAFFITI
  - ✓ LOW TIDE EXPOSURE
  - ✓ ANCHOR DAMAGE
  - ✓ EROSION/SEDIMENTATION
  - ✓ ILLEGAL FISHING
  - ✓ MARINE LIFE HARASSMENT
  - ✓ OTHER
- **Description** of impact
- **Type(s) of coral** affected (if applicable)
- **Number** of affected colonies (if applicable)



**If you see something, say something!**

Text **688-DAWR (3297)** if you witness marine preserve violations, someone damaging corals, dangerous marine debris, or other immediate concerns of this nature.

Funded by NOAA CRCP grant no. NA13NOS4820012



Report coral reef impacts at [EORMarianas.org](http://EORMarianas.org)