



**NOAA Teacher at Sea  
Clare Wagstaff  
Onboard NOAA Ship *Nancy Foster*  
September 11 – 18, 2009**

**NOAA Teacher at Sea: Clare Wagstaff**

NOAA Ship *Nancy Foster*

Mission: Florida Keys coral reef disease and condition survey

Geographical Area: Florida Keys – Key West

Date: Tuesday, September 15, 2009 (Day 5)

**Contact Information**

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**Weather Data from the Bridge (information taken at 12 noon)**

Weather: Partially sunny, with scattered showers and thunder storms

Visibility (nautical miles): 10

Wind Speed (knots): 2

Wave Height (feet): 1

Sea Water Temp ( $^{\circ}$ C): 30.6

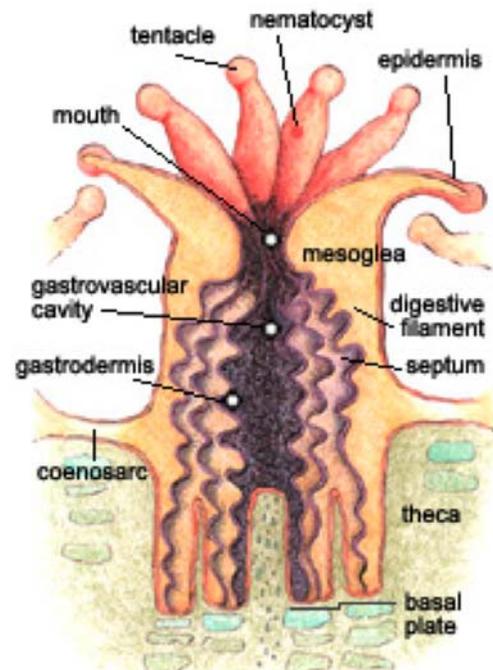
Air Temp ( $^{\circ}$ C): 30

**Science and Technology Log**

I am starting to get used to the scientific names of the corals, but it is taking a while. I keep wanting to refer to them by their common name which is generally descriptive of their physical appearance, but makes little to no reference to which other coral it is more closely related to. Dr. Joshua Voss, one of the scientists on board pointed out that the common names could vary depending on who is identifying them, yet the scientific name remains the same. Hence why the whole team refers to the scientific names when referring to the corals.

***So what are corals?***

Corals are members of the Animal Kingdom and are classified in the Phylum Cnidaria. People often mistake these creatures for plants, because they are attached to the rock, show little movement, and



Parts of a coral

([http://oceanservice.noaa.gov/education/kits/corals/media/subp\\_coral01a.html](http://oceanservice.noaa.gov/education/kits/corals/media/subp_coral01a.html))

closely resemble plants. Corals consist of a polyp, which are a cup-shaped body with one opening, which is its mouth and anus.

Zooxanthellae (zoo-zan-thel-ee) are single cell plants (photosynthetic algae) that grow within the polyps' tissue. It forms a mutualistic symbiotic relationship with the polyp. The algae gets a protected environment and the compounds it requires for photosynthesis, whilst the algae provides the polyp with the materials necessary to produce calcium carbonate, which is the hard "shell" that surrounds the polyp.

### ***So why is this cruise surveying corals?***

There has been a decreasing trend in coral coverage over the last decade. One theory is that this is due to anthropogenic stress related to water quality and climate change.

Coral's require certain environmental factors to be within sensitive boundaries, such as water temperature, salinity, clarity of water, and water movement. Although most species only grow a few centimeters each year, they are the backbone to a massive underwater ecosystem, hence their extreme importance to the success of our oceans. By studying the trends in species distribution, size and disease over various geographic regions, their correlations can be described in better detail.

### **Personal Log**

This morning I once again join Team C that composes of Dr. Joshua Voss, Kathy Morrow and Mike Henley to survey three dive sites called RK01, RK02 & RK03. We have now got into a comfortable routine and everyone seems to work well together.

Unfortunately, this cannot be said for the boat, NF4! During our last dive on Monday, the boat started to leak oil and is now out of commission for the rest of the cruise. Instead we are on the much smaller and less luxurious, NF2, which also happens to be much slower! However, after the usual dive brief we set out for a day of adventures upon the open sea.



**Clare Wagstaff, Teacher At Sea, snorkeling**

The second dive site today proved to be the best for snorkeling and I was able to observe a large variety of plants and animals from on the surface.



*Polythoa* spp. observed covering most of the reef at station RK02 and Watercress Alga (*Halimeda opuntia*). *Polythoa* is not a coral and in fact competes with coral for space in the reef.

The final survey site, RK03 was very shallow at around 8 ft. The dive team decided to make their observations snorkeling rather than diving. Unfortunately, Kathy was so engrossed in her work that she did not see a moon jellyfish swim right into her face! She put on a very brave front and we quickly returned to the NF2 and back to the *NANCY FOSTER*. The medial treatment for such a sting is to drench the area in vinegar, which neutralizes the nematocysts that may still be clinging to the skin. Luckily, Kathy made a quick recovery, even if she did smell a little like vinegar for the rest of the day!

### “Did You Know?”

Waterspouts are simply tornadoes over water. They are common in tropical areas where thunderstorms regularly occur, such as the Florida Keys! Today we saw a prime example of one within a few miles of the *NANCY FOSTER*.

### “New Term/Phrase/Word”

Anthropogenic – caused or produced by human activities such as industry, agriculture, mining, and construction.



Here I am pointing to the waterspout