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 -10 miles north of Key Largo. Northern most reefs in FKNMS
Date: Wednesday, September 16, 2009 (Day 6)

Contact Information
Clare Wagstaff
Sixth and Eighth Grade Science Teacher
Elmwood Franklin School
104 New Amsterdam Ave
Buffalo, NY 14216
(716) 877-5031
cwagstaff@elmwoodfranklin.org

Weather Data from the Bridge (information taken at 12 noon)
Weather: Sunny with scattered showers with thunder storms
Visibility (nautical miles): 10
Wind Speed (knots): 4
Wave Height (feet): 1
Sea Water Temp (^{0}C): 30.6
Air Temp (^{0}C): 30

Science and Technology Log
Today I am with a new survey group. As the days go by and each of the scientists gets more dives under their belts, there is some fatigue starting to set in. So on a rotation basis, the divers are taking rest days to catch-up on sleep, emails and data entry. This morning I am with Lauri, Lonny and Sarah. The first dive site is about 33

Elkhorn coral (*Acropora palmata*) and numerous Sergeant Majors (*Abudefduf saxatilis*)

feet deep and although I can see the bottom from our small boat, the water is extremely green and doesn't allow me to see anything in real detail when I snorkeled. A little disappointed at the clarity of the water, I am definitely perked up by the next site, CR03. At just 8 feet deep, I can see much more and the water appears less green.

This site was something special! Even from above the water, we could observe large and impressive *Acropora palmata.* It looked like a large underwater forest. There was a massive diversity of fish specie present that appeared to be supported by the micro-ecosystem that the *Acropora palmata* created by its large lobes that fan out across the ocean floor. They provide plenty of nooks for green moray eels and multiple lobsters I saw to hide in. This coral grows approximately 10cm a year, but as with all coral species, this growth can be affected by various factors including the most recent hurricanes.

A lobster hiding in the coral

We were surveying in an area known as a Sanctuary Preservation Area or commonly a "No Take Zone", yet a small boat located within the marking buoys appeared to be spear fishing. The Coxswain on our boat noted that the group brought numerous fish up into their boat while we were underwater. Within a short distance we also observed two other lobster pot buoys located within this zone. Lauri, called this into the *Nancy Foster* and asked that the Chief Scientist report this to the Marine Law Enforcement office, so that they could send a patrol boat out to investigate. This activity is not permitted in this zoned area.

Coral identification

Today, I tried to indentify all the different varieties of coral I had photographed. Dr. Joshua Voss, the ship's expert of coral identification looked over my attempt at scientifically naming 30 different photos. Much to my delight, I got 28 correct! Now I just need to remember them when I am underwater! My greatest difficulty seems to be differentiating between *Montastraea spp. – annularis, faveolata* and *franksi*, as they have quite similar morphotypes. I just have to keep practicing and asking for help when I'm not sure. What makes me feel a little better is sometimes even the pro's have trouble distinguishing between certain corals, particularly if they are trying to identify a hybrid which is a mixture of two different species.

Diploria clivosa

Diploria strigosa

Acropora palmata

Montastraea annularis

Personal Log

I am always amazed at how resourceful divers can be. Somehow duct tape comes in useful wherever you are. Today was no exception! Geoff, who forgot his dive booties (a type of neoprene sock that you wear inside you fins) has made himself a pair out of another team member's white socks and a few lengths of duct tape. He does look very entertaining, but they do seem to be working!

I am feeling very privileged to be surrounded by so many intelligent, passionate and brilliant people. Not only are most of people on the survey teams volunteers and so not getting paid, they are also embracing each part of the cruise with a great sense of humor and consistent high spirits. Even though they are all tired (to date they have accumulated 133 dives between them this

cruise), they still banter back and forth with one another in a lighthearted way. All but myself and Mike Henley are returning for their third, fourth, even 13th time, to help collect this vital data. Even though diving has many hazards and is dangerous work, these folks are real experts and I truly feel lucky to be around such inspiring people. I have been diving for five years, but I don't think I will ever look at a reef in the same way again. They have opened my eyes, and now my job is to go back to chilly Buffalo and develop a way to get this across to my 6th and 8th grade science classes. If I can inspire even just one child, like Joshua's science teacher did for him as a teenager, then perhaps they too will go on to become a marine biologist, who study some of the smallest, yet most important creatures on our planet.

As 7pm draws close, the science group gather on the front deck to watch the sunset. It is a beautiful sky, but just to make the evening more special, along come three dolphins riding the wake of the bow of the *Nancy Foster*. I leap up like a child and run to the edge of the ship to get a closer look, having never seen dolphins in the wild before! They are so graceful and as we all lean over and cheer as the breach the water and splash their fins, you start to wonder, if they are actually watching us as much as we are watching them. Such grace and natural beauty brings another day aboard the *Nancy Foster* to an end. I'm just not sure how each day keeps topping itself, and with two left to come, who knows what adventures may become this team!

Bottlenose dolphins riding in the *Foster*'s wake

"Animals Seen Today"

Three bottlenose dolphins (*Tursiops truncates)* riding the wake of the *Nancy Foster*