



**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 - Dry Tortugas National Park

Date: Sunday, September 12, 2009 (day 2)

Contact Information

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

Weather: Sunny with scattered showers and thunderstorms

Visibility (nautical miles): 10

Wind Speed (knots): 10

Wave Height (feet): 2

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

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

Science and Technology Log

With another early start under our belts, the science team and I are up, breakfast eaten, briefed on today's mission, and ready to embark on another day of coral surveying. The ship deployed three v-hulled small boats for us to reach our dive sites. The divers have been split up into three teams and I get to go along with Joshua, Kathy and Mike on the NF4. Out of the boats, this is the newest and fastest, much to the delight of our science team!

Having done the practice run yesterday at the QA site, the divers seem keen and eager to get into the water and identify the coral.

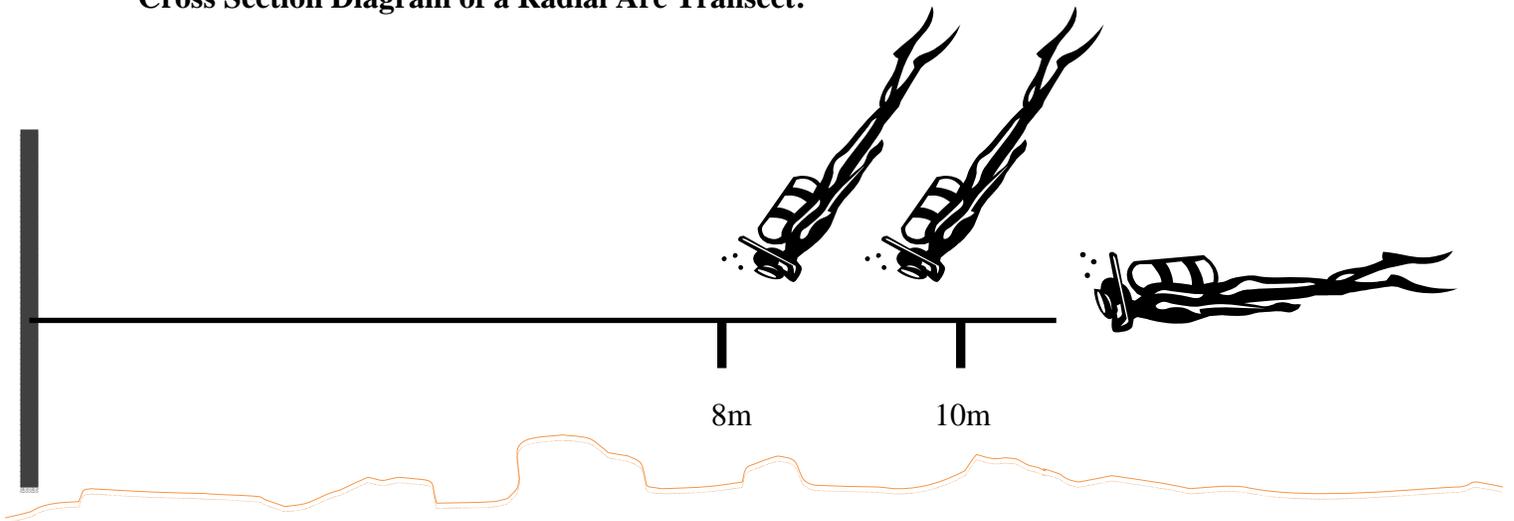


Mike Henley, Kathy Morrow and Dr. Joshua Voss, the survey team aboard NF4.

So how do they actually survey the area?

Each group works in a team of three, surveying a radial arc belt transect. Each of the sites has already been previously marked, normally with a large metal or PVC pipe inserted into the area to be surveyed.

Cross Section Diagram of a Radial Arc Transect:



Mike is the line tender, which means that his job is to hold the ten meter line straight out from the post, just a few feet above the coral. He slowly moves the line around the pole in an arc. The line is marked at eight and ten meters. At each of these lengths a short marker hangs down to signal the two-meter survey area. The objective is then for Kathy and Joshua to observe the coral and note the number of species of coral present, their size and how they interact with each other, while also recording the presence of disease (type and percentage cover) within the 113.1m^2 area.

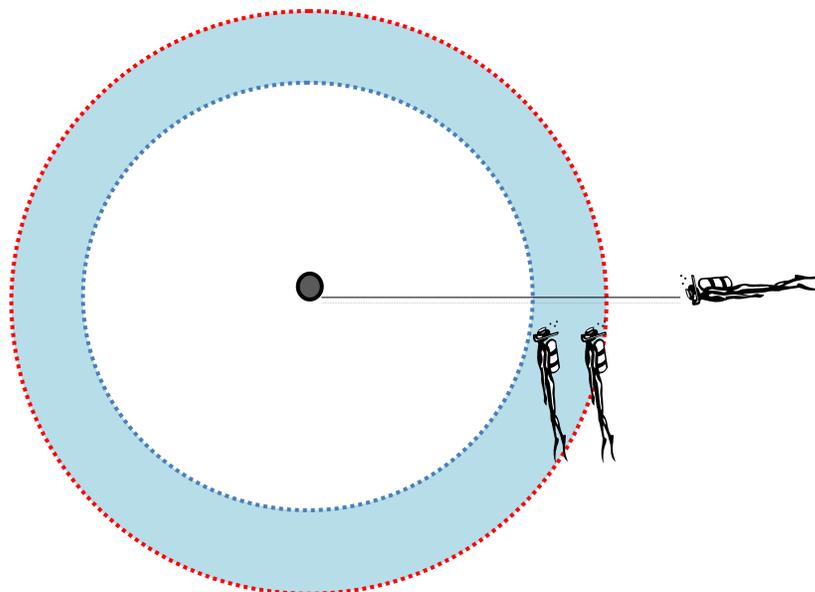
Surveyed area = 113.1m^2



8m



10m





Survey team of Kathy Morrow (top, middle), Mike Henley (top, left) and Dr. Joshua Voss (bottom, right) surveying site LR6.

Chief Scientist, Scott Donahue showed me some of the months of paperwork that was required for this mission to happen. Scott stated that he started work on preparing for this trip nearly four years ago, first requesting time aboard the *Nancy Foster* and then proceeding with recruiting scientists and permits. Today we are required to have a ‘Scientific Research and Collecting Permit’ for the surveys in Dry Tortugas National Park.

Personal Log

What a great day! I am starting to find my feet and get more comfortable with how the ship works, getting to know the science team, and learning more about the actual coral. I haven’t been sea sick, which seems pretty remarkable to me considering my past history with boats! The sun has been shining and the water is clear and reasonably warm at around 30 °C.

Even though the water may sound warm, I am still wearing my wetsuit, much to the amusement of some of the other divers who are complaining that they are too warm in the shorty wetsuits (only to the knee and elbow). I classify myself as part of the “wimp divers” association. I was quite content and comfortable in my 3mm, full body wetsuit and had hours of enjoyment snorkeling around. However, wearing a full wetsuit does let you forget that there are some parts of your body that still get exposed to sunlight. The tops of my hands are bright red and are nicely

sunburned from being in the water most of the day with no sunscreen on them! Oh well, I'll remember next time.

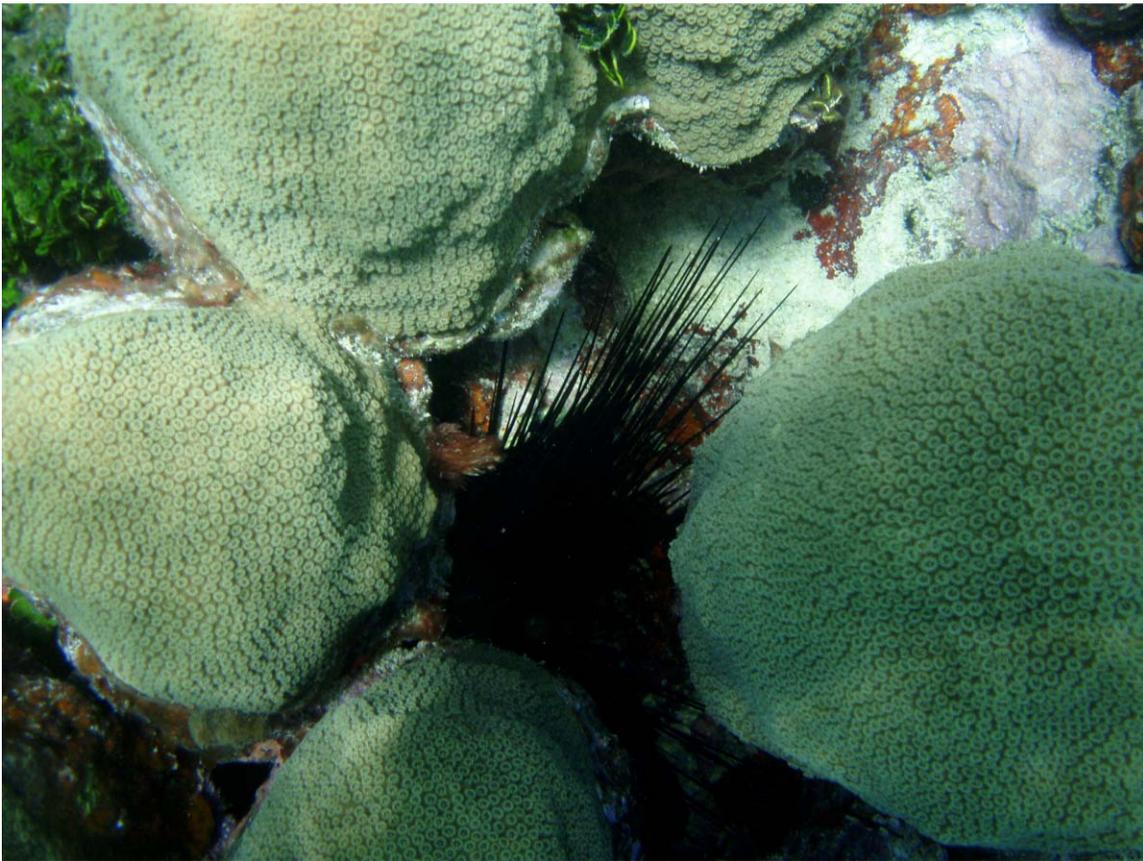
“Did You Know”

Being a novice at coral identification, Blade Fire coral (*Millepora complanta*) looks similar to Fused Staghorn coral (*Acropora prolifera*). However, they are actually very different. Fire coral is a hydroid and is in fact more closely related to the Portuguese Man ‘O’ War than other classes of coral! Hydrozoans usually consist of small colonies of polyps that are packed with stinging cells called nematocysts on the tentacles of the polyps. Watch out though, it can give you a very nasty sting and rash!

For more information: http://www.reef.edu.au/asp_pages/secb.asp?FormNo=18

“Animals Seen Today”

The variety of marine wildlife observed was much greater today than previous dives. The dive sites were much shallower, which meant that as a snorkeler I could really observe much more and in more detail. At only eight to ten feet in depth and with good visibility, this made for a great and interesting dive.



Long-spined Urchin (*Diadema antillarum*) and Boulder star coral (*Montastraea annularis*)

One of the science team commented that it was good to observe these echinoderms in the coral reefs. They eat algae that can negatively compete with the coral. So their presence is excellent news for the coral.