



NOAA Teacher at Sea
Julianne Mueller-Northcott
Onboard R/V *Hugh R. Sharp*
May 11 – 22, 2010

NOAA Teacher at Sea: Julianne Mueller-Northcott

University of Delaware R/V *Hugh R. Sharp*

Mission: Sea Scallop Survey: Leg III

Port of Departure: Lewes, Delaware

Location: Off the coast of Virginia

Date: May 12, 2010

Weather Data from the Bridge

Air temp: 13.72°C, 85% humidity, overcast

Science and Technology Log

When the dredge gets pulled up the ramp of the ship, I always strain to try to see past the chain and netting to see what amazing creatures might have gotten caught in the dredge. I can see the pale-as-a-ghost face on the underside of skates and flounders. The sea stars fall to the table in a big mound and you can see the crabs trying to climb the net. And of course the scallops! They get dumped out onto the table in a wave. The pile of creatures undulates as organisms try to right themselves and seek cover. Each dredge so far has been different. Some are chock full of sea stars such as *Asterias forbesii* and *Asterias vulgaris* which we have at home, but by far the most abundant sea star species is *Astropectin* sp. There was one dredge that was all sand dollars and they tumbled out onto the deck, like hundreds of poker chips, hockey pucks and small frisbees. I noticed that all of the fish in the dredge were green and then everything else started turning green. Apparently, sand dollars turn everything green! No one was quite sure why—this will be something to investigate once I get home.

So you can imagine how exciting it is to see hundreds (in some cases maybe thousands) of your sea friends, dumped out in front of you to examine! I think about all the hours toiling at Odiorne Point with my students searching under rocks and peeling back algae in the intertidal zone looking for a hidden gem. Here on the sorting table at the back of the boat there are so many species, so many things waiting to be discovered. I think about my marine biologists at home and how excited they would be to have some of these critters for our tank! (And while the thought has crossed my mind to try to kidnap some, that might be a difficult situation to explain going through security at the airport—a cooler full of crabs, sand dollars, sea stars and scallops!) The object here is not to study all the cool creatures for hours under a microscope which is what I would love to do (there isn't even a microscope on the ship!) but instead, to sort. My job, with 5 other people, is put out all the scallops and fish. Those get measured and counted and everything else goes back into the water. It all happens very quickly. Because the goal is to do so many dredges in a relatively short amount of time, the faster you process everything the faster we can move on to our next sampling location, which means the more data that can be collected. Also time is money on this high tech ship we are on. For the scientists to use the R/V *Hugh R. Sharp* it costs \$12,000 a day. So it is imperative to work quickly to get the job done. But I am learning some tricks so that I can spend a little more time with the creatures I really want to check out. I usually sneak a couple of neat things to photograph off to the side and after we are finished with the work at hand take a few minutes to study them. And the scientists have figured out that when they have an organism that we haven't seen yet, they have to show it to me before it gets tossed back overboard!



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We were just pulling up a dredge last night when Ben pointed to the starboard side of the ship. There in the starlight were about eight dolphins riding in the wake of the boat. They were porpoising in and out of the water. They were gray, with speckled black dots—we don't have a mammal field guide on board—so I am not sure which species it was. It was the first night that we could see stars, other than the sea star variety. I thought of Kat S. who was the first person who got me excited about the prospect of seeing stars at night from the boat. Between the starlight and the spotlights on the ship, the sea below sparkled. Even in the dark water you could see the water shimmer and change to a light green color, letting you know where the dolphins were just before they surfaced. I have a list of top wildlife encounters in my life (swimming with whale sharks and eagle rays, saving stranded pilot whales in the keys, viewing humpbacks breach in a storm in the Bay of Fundy, nesting sea turtles Mexico, watching baby orcas play in the San Juan Islands, etc) but even with this list, watching the dolphins at night beneath the stars was pretty magical!

Captain Bill nonchalantly mentioned that he had seen an ocean sunfish (*Mola mola*) yesterday morning. "What?!" I guess I hadn't made it clear that I wanted to witness any such animal encounters. I had told my students that the ocean sunfish was the one species I was really looking forward to seeing on this trip. I had seen them in various aquariums but never in the wild. The ocean sunfish has always seemed to me a freak of natural selection. How could something so big, clumsy and awkward looking have survived evolution? Something about the way it lazes around without a care in the world has always appealed to me. This morning, I took my usual watch on the bow of the boat (as I do every morning before my watch begins at 12:00). There, about 50 ft from the boat, I saw two large fins, flopping this way and that without an apparent purpose. It was *Mola mola*! We didn't get very close and our boat was traveling fast but through my binos I at least got a glimpse of its round, disc body. And a couple of hours later, I saw another—this one a little further away. So I know there are lots out there—now the goal is to get an up-close view and hopefully a photo!

Personal Log

It is pretty awesome now that the weather is brightening and we are seeing some beautiful species! I love being on the top decks watching the sunlight dance on the water. I love that everywhere I look all I see is ocean. Yesterday we saw many other ships on the water—but today it is really just us steaming along. At first it was a little hard to get used to seeing lots of dead fish in the dredge and lots of animals that don't survive the sampling. There is a lot more bycatch than I would have expected. It is going to take a little more time for me to process my thoughts about it all, but I am starting to understand that for now this is the best way for the data to be collected. While it might not be the best thing for individual organisms, these sampling techniques are important for protecting the fisheries and ultimately the ecosystem.