



**NOAA Teacher at Sea  
Nicolle von der Heyde  
Onboard NOAA Ship *Pisces*  
June 14 – July 2, 2010**

**Nicolle von der Heyde**

NOAA Ship *Pisces*

Mission: SEAMAP Reef Fish Survey

Geographical Area of Cruise: Gulf of Mexico

Dates: Tuesday, June 15

**Weather Data from the Bridge**

**Time:** 1000 hours (10:00am)

**Position:** latitude = 27.38.1 N, longitude = 088.18.9 W

**Present Weather:** 4/8 cloudy

**Visibility:** 10 nautical miles

**Wind Direction:** SSW      **Wind Speed:** 5 knots

**Wave Height:** < 1 foot

**Sea Water Temp:** 30.4 degrees Celsius

**Air Temperature:** dry bulb = 29.5 degrees Celsius  
wet bulb = 27.2 degrees Celsius

**Science and Technology Log**

Today at around 1000 hours (10:00 am) our CO sighted a dead Sperm Whale from the bridge. Our scientists say it is extremely rare to see a floating sperm whale. In fact, a whale expert who communicated with one of our scientists said he has only seen one in 25 years of studying them! The Gulf of Mexico is a habitat of Sperm Whales. Females stay here year round and birth their young in these waters while male Sperm Whales travel to many different locations, some as far as the Antarctic Ocean. Sperm Whales are the deepest diving whales. Although they live at the surface, they dive to hunt Giant Squid that are bottom dwellers. They have been known to dive as deeply as 10,500 feet (3,200 meters) but average dives are about 4000 feet (1,200 meters) deep. The Sperm Whale can hold its breath for about an hour!





Here you see a close up of the teeth of the whale and some of the small fish swimming around it.

As you can see, the whale was covered in some black substance. Our scientists are not experts on marine mammals; however they spoke with Dr. Keith Mullin, the Southeastern Fisheries Science Center Marine Mammals Program manager, who stated that this is typical for the skins of dead whales to blister, char, and fall off. Upon seeing photos of the whale, the experts stated that it appeared to have died of natural causes; however we were asked to take samples from the whale to eliminate the possibility of oil as the cause of death. The ship positioned itself next to the dead whale and scientists swabbed the carcass in order to test for oil toxins and took tissue samples for DNA. NOAA catalogues mammal DNA to record species

information and migration of different animals.



As we watched the whale float next to the ship, a 12 foot Tiger shark approached. It was obvious that sharks had been feasting on the whale because we could see definite bite marks along the side.



The Tiger Shark (*Galeocerdo cuvier*) is a fierce predator that has tiger-like markings and can grow to be over 14 feet (4.2 meters) long. It eats just about anything: fish, turtles, crabs, clams, mammals, seabirds, reptiles, other sharks, and just about anything else they can catch. It apparently likes to eat dead whales too! The Tiger Shark is one lean, mean eating machine. Each of its teeth is shaped like those found on a circular saw with a flat and curved hook at the end. A power saw might not even equal this shark's power since it can cut through turtle shells with a single bite.



The shark circled the whale carcass and suddenly attacked, twisting back and forth in typical shark style. A bit later, the shark came along side the whale, bobbed up and down and took several chomping bites. Everyone was amazed at what we were witnessing!



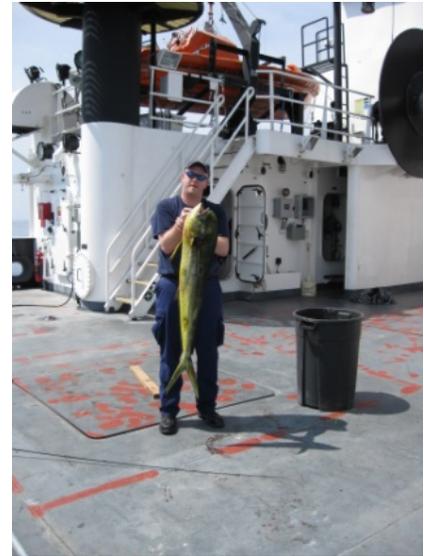
### **Personal Log**

**Tuesday, June 15:** The day started again with breakfast at 0700 hours. Since most of the day would be spent cruising through Gulf waters to our first research site off the coast of southern Texas, the plan had been to take a tour with the First Engineer of what I was told is a very impressive engine room in the lower deck of the *Pisces*. Little did I know that in a few hours I

would witness one of the most amazing sights I have ever seen. But first, as expected, an announcement came over the ship's intercom announcing a "man overboard" drill, followed by three blasts of the general alarm. All the scientists "mustered" in the conference room to await the end of the drill. This was shortly followed by a fire drill where our muster station was again in the conference room. After the drills I began talking to Christopher Gledhill, one of the scientists, about the reef fish survey and some of the data he has collected on past surveys. All of a sudden, the Chief Scientist Paul Felts came into the conference room and announced, "They've spotted a dead whale!" I couldn't believe my ears as I quickly gathered my things and headed to the deck of the ship. Sure enough, there was a big floating white mass just ahead of the bow of the ship. I frantically began taking pictures, not realizing that we would be spending the next few hours alongside the dead carcass plus all the fish that had gathered around to feed off of the remains. Someone said that sharks had left the scene as we approached and I was hoping they would return so I could catch a glimpse of one. I would not be disappointed.



Of course, my first observation was the black, charred-looking surface of the whale. It looked like someone had taken a torch and lit it on fire. My first thought was that this must be oil, but as stated in the science log above, the skin of a dead whale will blister, burn, and turn black when exposed to the heat of the sun. My second observation hit me like a ton of bricks as the wind shifted toward the deck of the boat and I caught my first whiff of dead, decomposing, sunburned sperm whale. I'm not really sure what to compare it to but imagine the worst smell you've ever smelled and multiply it by 10. I think the stench is permanently etched into my sensory memory. Fortunately, we were all just about to be fitted with respirators (like a gas mask) in case we came across fumes from the oil spill. I went inside to be fitted with the respirator and when I stepped outside, I didn't smell an ounce of dead whale – what a relief! My third observation was of all the life that was swarming around this dead, decaying carcass. Schools of Mahi Mahi (aka Dolphin Fish), some up to 4 feet long, and other smaller fish dotted the depths of the crystal clear blue water. I noticed activity at the stern (back) of the boat as some of the officers and deckhands began assembling fishing poles to reel in the Mahi Mahi. Before long, the crew had hauled about 15 Mahi Mahi onto the ship!



During this time, the Chief Scientist was on the phone with other NOAA scientists discussing how they should handle taking samples from the whale. Our ship was not equipped to study marine mammals so we did not have the traditional tools necessary for this type of task.

All of a sudden someone spotted the Tiger Shark circling the waters around the whale. I was able to capture the image below of the shark as it swam under our boat. It circled the carcass a few times and then attacked! What a scene as it first thrashed at the belly, then swam to the



backside and took a few chomps. What a thrill to see this powerful predator up close (and from the safety of the ship!). Barely a day into this trip and I've had an experience I will remember forever!

### **Animals Seen Today**

Dead Sperm Whale (*Physeter macrocephalus*)

Tiger Shark (*Galeocerdo cuvier*)

Mahi Mahi (*Coryphaena hippurus*)

Brown Pelican (*Pelecanus occidentalis*)

Flying Fish (Family *Exocoetidae* – There are 64 species in this family!)

Various smaller fish

Brown Booby (*Sula leucogaster*): Shown below.

**This seabird landed on the mast of our ship one evening and hitched a ride through the night until the next evening. It was hunting the flying fish in the water as we cruised toward Southern Texas waters and I even observed it dive into the water after a fish!**

