



**NOAA Teacher at Sea  
Thomas Nassif  
Onboard NOAA Ship NANCY FOSTER  
July 15 – 30, 2005**

**Day 5**

**DAILY LOG – JULY 19**

Teacher at sea: Thomas Nassif  
Ship: NANCY FOSTER  
Invasive Lionfish Cruise

Day 5: Tuesday, July 19, 2005

Latitude: 33°38'N

Longitude: 76°56'W

Visibility: 10 nautical miles (nm)

Wind direction: 230°

Wind speed: 15 kts

Sea wave height: 1-2'

Swell wave height: 2-3'

Sea water temperature: 28.9°C (84°F)

Sea level pressure: 1019.9 mb

Cloud cover: 5/8, Cumulus, Alto cirrus



**Science & Technology Log**

Today was by far the most beautiful sunrise we've had since our departure from land last week. A fiery ball of radiant yellow captured the sky, as its luminous rays penetrated the hues of deep blue and wispy whites in the surrounding sky. This morning the divers visited Kinny 1 and 2 (also known as K1 and K2). But this was no ordinary dive... K2 happened to be the most challenging and strenuous dive yet. The ocean currents were moving faster than we expected. The ship pulled up-current from the dive site (marked by an orange buoy), to put the divers in position. All they would have to do is jump off the ship and drift down-current to find the buoy. But when the divers jumped off the ship they were swept away by the strong ocean currents well past the buoy. The NF4 picked up the divers, who had to take off all 200lbs of their SCUBA gear, and wait to be taken to the correct diving site. The divers eventually finished their mission at K2, but were very exhausted when they returned to the NANCY FOSTER.

Today I finally got my chance to step off the NANCY FOSTER for the afternoon. I boarded the NF4 (diver recovery boat) and we steamed off into the open sea. Soon

thereafter we watched from a distance, as the divers leap off the NANCY FOSTER. Our job was to keep an eye on the divers to ensure their safety during the 130-foot descent to the ocean floor. The NF4, along with the NANCY FOSTER and RHIB, all bear the “divers flag” when we deploy SCUBA divers into the ocean. This red flag with a diagonal white stripe warns other ships in the immediate area that there are divers in the water.

I also went snorkeling in the ocean to watch the SCUBA divers decompress underwater. After the divers finished their dive to the ocean floor, they stopped at 20 feet from the



ocean surface to breathe pure oxygen from a long tube supplied from the surface by the RHIB (the air we breathe everyday is only 21% oxygen). If the divers chose instead to shoot straight up to the ocean surface, they risk getting the “bends,” a painful experience that occurs when nitrogen bubbles form in the blood.

The divers safely returned to the ship with 6 lionfish

in their nets – the aquarium aboard the NANCY FOSTER now has a total of 25 live lionfish! The scientists plan to transport them to a more permanent home at the NOAA Beaufort Laboratory when we arrive at port next week. To simulate the natural conditions of the ocean, scientists will place the lionfish in a “flow through aquarium” that transports ocean water through a pipe into and out of the aquarium. By having several aquaria full of lionfish in the lab, scientists hope to learn more about their diet and how often they reproduce.

Question of the day:

Do lionfish reproduce in the same way as fish? How often do they reproduce?

Yes - Lionfish reproduce like most fish, through External Fertilization. Eggs are released from the female into the water and then fertilized by sperm from a male fish. The thing that makes lionfish so different from most fish is this: Female lionfish release a floating mass of eggs that stick together (most fish release eggs that disperse and spread out from each other in the water). Scientists think that lionfish are more successful at reproducing because the floating masses of eggs are more likely to be fertilized. We do not know how often lionfish reproduce – this is one of the biggest questions scientists want to find out! The reproductive periods of fish overall can be very different. Some species of fish, like Salmon, reproduce only once in their entire lifetime. Tropical organisms like the

Parrotfish, on the other hand, reproduce every day! It will be very helpful for us to know how often female lionfish reproduce so that we may better understand their impact on the local ecosystem.

#### PICTURE CAPTIONS

**SUNRISE:** “A fiery ball of radiant yellow...penetrated the hues of deep blue and wispy whites.” Photo taken by Thomas Nassif.

**ABOARD THE NF4:** Thomas Nassif aboard the NF4 dive boat. The NANCY FOSTER is pictured in the background. Photo taken by Thomas Nassif.