



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

Log 7

DAILY LOG – JULY 21

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

Day 7: Thursday, July 21, 2005
Latitude: 33°30'N
Longitude: 77°09'W
Visibility: 10 nautical miles (nm)
Wind direction: 290°
Wind speed: 15 kts
Sea wave height: 3'
Swell wave height: 3-5'
Sea water temperature: 28.9°C (84°F)
Sea level pressure: 1019.9 mb
Cloud cover: overcast, cumulus and stratus



Science & Technology Log

The day began with rocky seas, gusty winds, strong ocean currents, and the tallest swells we've had since our departure from port last week. These ocean conditions are nothing extraordinary for the ship's crew, but extremely tough for the divers. The diving site for this morning was Southeast Tower 2, not far from the old Frying Pan Tower that was used by the Coastguard to collect and transmit ocean conditions. The Tower's location 35 miles off the Atlantic coast atop a 45-foot deep rock formation made it among the most valuable navigational aids for collecting ocean data such as wave height and water temperature.

The first dive of the morning went smoothly. But the second dive team was not so fortunate. After jumping off the ship they were swiftly pulled past the dive site buoy by strong ocean currents. Having missed the dive site, the divers ended up at an entirely different location on the ocean floor! This is why it is so important for ships to record the weather conditions and their location at sea. These measurements take place on the Bridge, the command center of the ship.

Every day, I walk to the Bridge to get the weather data that appears at the top of my daily logs. Here is an explanation of the terms: **Latitude** tells you how far north or south you are from the equator (which is 0° latitude), while **Longitude** tells you how far east or

west you are from Greenwich, England (0° longitude). Together, Latitude and Longitude give the exact location of the ship. **Visibility** is how far ahead you can see from the ship.



On a very foggy day you may only have a visibility of 10 feet, whereas on a clear day you can see all the way to the horizon, or 10 nautical miles. **Wind direction** tells you which way the wind is blowing from – 0° is north, 90° is east, 180° is south, and 270° is west. **Sea wave height** and **Swell wave height** are height estimates of the smaller ripples and larger waves, respectively. **Sea level pressure** (or barometric pressure) indicates

what the trend of the weather has been. High barometric pressures (like today - 1019mb) usually mean sunny weather; rain cannot build up in clouds if they are being squeezed together by high pressure. Low barometric pressures tell you that rain or stormy weather is on the way. Inside the eye of a hurricane barometric pressures can be as low as 875mb! Under low pressures clouds can expand and fill up with rain. **Cloud cover** is a number between 0 and 1 that describes how much of the sky is covered with clouds. 4/8 means that half of the sky is covered with clouds, 1/8 means very few clouds, 7/8 is mostly clouds, and overcast (or 8/8) is all clouds.

Every day the ship sends all of this weather information to the National Weather Service (NWS) by satellite. The NWS will in turn fax this information to other ships that will be traveling in our area so they can get a better idea of what the weather is like at our location. And when our ship steams ahead to a new dive site tomorrow, we will be grateful if another ship was in the same area. The weather information that ship collected will help us know more about the weather!



Question of the day:

How many sets of venomous spines do lionfish have? Where are they found on its body?

Lionfish (like most fish) have five different types of fins. But in Lionfish, some fins have sharp, venomous spines. The **dorsal** (back), **pelvic** (waist), and **anal** fins all have pointy,

venomous spines that look like injection needles. The **caudal** and **pectoral** fins, on the other hand, are not venomous and look more like ordinary fish fins.

PICTURE CAPTIONS

NASSIF ON BRIDGE: Thomas Nassif on the Bridge of the NANCY FOSTER gathering measurements from the ship's weather log.

NANCY FOSTER AT SEA: The 187-foot NANCY FOSTER in the Atlantic. The Bridge is located on the very top level of the ship. Photo taken by Thomas Nassif.

LIONFISH SCALE: A lionfish has many fins. The outstretched pectoral fins are not venomous. The shorter, pointier spines are venomous. From right to left they are: dorsal, pelvic, and anal spines. Photo courtesy of Christine Addison.