



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

Log 6

DAILY LOG – JULY 20

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

Day 6: Wednesday, July 20,
2005

Latitude: 33°35'N

Longitude: 77°28'W

Visibility: 10 nautical miles (nm)

Wind direction: 230°

Wind speed: 12 kts

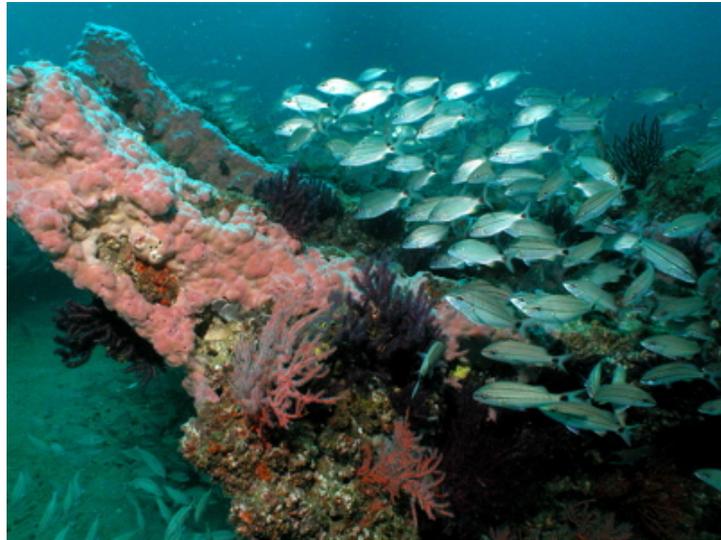
Sea wave height: 1-2'

Swell wave height: 2-3'

Sea water temperature: 28.9°C
(84°F)

Sea level pressure: 1019.2 mb

Cloud cover: 5/8, Cumulus, Stratocumulus



Science & Technology Log

My excitement and fascination with this entire diving expedition grew even more when I heard that the divers would be exploring two shipwreck sites on the ocean floor today – “18 Fathom” in the morning and “City of Houston” in the evening. Fathoms are an old unit of measurement still used by navigators today to describe the depth of the ocean (1 Fathom = 6 feet deep). The dive site “18 Fathom” is a mystery shipwreck that was discovered at a depth of 108 feet (18 Fathoms). Shipwrecks provide excellent habitats for a variety of fish, including lionfish. The broken down hull and old passageways of a shipwreck create a manmade reef upon which algae and coral grow, smaller fish hide, and larger fish feed. Rather than scrap old ships, many countries around the world clean and sink their old ships to the ocean floor to create artificial reefs for fish and other marine organisms.

After lunch, the boat steamed ahead to the next dive site, City of Houston. Far beneath the ocean surface looms an old Civil War Era shipwreck. Thousands of fish including Tomtate, Vermilion Snapper, and Silverside enveloped the divers, making the surrounding waters shimmer with silvery red. At times the number of fish were so great that the divers had trouble seeing even a few feet in front of them! Over one

hundred years after the City of Houston wrecked and fell to the seafloor, you can now see coral and algae taking over the entire manmade structure. Even so, it is still possible to make out obvious structures of the ship, including the engine and the hull.

Personal Log

Today I went snorkeling off the NF4 once again and had a fantastic time swimming in the 84°F water under a beaming sun – It’s unbelievable that the Atlantic Ocean can be so warm during the summer months! Also, I’ve watching the divers in action as they



descend to the ocean floor, collect live lionfish, and take stupendous photos of the deep ocean all inspire me to someday become a professional SCUBA diver myself.

Question of the day:

What type of air do SCUBA divers breathe?

This depends on how deep you plan to dive. Regular air (the kind we breathe on land) is mostly nitrogen and

only 21% oxygen. The tanks that the deep-sea divers carry on their back are filled with regular air, and they can dive up to 150 feet by breathing this air through a mouthpiece (or regulator). Other divers that only need to dive up to 113 feet (like our safety divers) use Nitrox, which has more oxygen (36%) than regular air. Finally, at depths up to 20 feet deep, SCUBA divers can breath pure oxygen (100%). The deep-sea divers on our cruise switch to pure oxygen 20 feet before they reach the ocean surface to speed up their decompression.

The two dangers with SCUBA diving and the air they breathe are:

- 1 - Too much oxygen can be toxic to your body. The deeper you dive, the less oxygen you should have in the air you breathe.
- 2 - At the same time, too much nitrogen can make you feel light-headed and put you to sleep underwater. Jacques Cousteau, French inventor of the SCUBA, called this “Rapture of the Deep.” That is why it is so dangerous for divers to spend too long in the deep ocean.

PICTURE CAPTIONS

SHIPWRECK REEF: A underwater photograph of the City of Houston shipwreck. Over time the ribs of the ship's hull have been covered by sponges (pink fluff) and soft coral (colorful branches). Tomtate fish are pictured to the right. Photo taken by deep-sea diver Doug Kesling.

EXPLOSION OF FISH: An explosion of Tomtate (white fish) and Vermilion Snapper (red fish) envelop the water in a silvery red glow. Photo taken by Doug Kesling.