



**NOAA Teacher at Sea**  
**Mark Silverman**  
**Onboard NASA Ship LIBERTY STAR**  
**June 7 – 14, 2006**

**NOAA Teacher at Sea:** Mark Silverman

**NASA Ship:** M/V FREEDOM STAR

**Mission:** South Atlantic MPA's: Pre-closure evaluation of habitat and fish assemblages in five proposed no fishing zones

**Day 2:** Thursday, June 8, 2006

**Weather Data from Bridge**

Visibility: unlimited

Wind direction: S/W

Average wind speed: 7 knots

Wave height: 1-2'

Air temperature: 78°F/25°C

Cloud cover: None

Barometric pressure: 1011 mb



Members of the science team and crew prepare to deploy the ROV in Option 2 off the coast of North Florida aboard the NASA ship FREEDOM STAR.

**Science and Technology Log**

This morning at about 0800 the CTD was launched and recovered successfully in the Option 2 area about 50 miles off the coast of North Florida. Next, a fish trap baited with Spanish mackerel was launched. After overcoming a few difficulties, the ROV was launched in about 200' of water around 1000. Visibility was excellent and two successful transects were accomplished. The bottom consisted of mixed hard bottom and sand with several good ledges encountered. The hard bottom visibly contained invertebrate species such as black coral, *Oculina varicosa* coral, *Lophelia pertusa* and other branching corals as well as basket sponges and various algae. A number of species of fish were spotted. The fish were most prolific in areas where the most relief was seen. Fish species spotted included tomtate grunts, scamp (a type of grouper), three types of porgies, blue angel fish, reef, bank and spot fin butterfly fish, blue and queen angel fish, almaco and greater amber jacks, yellow tail reef fish and many other types of damsel fish, filefish, scrawled cow fish, and Cuban hogfish. After the ROV run, the fish trap was recovered after soaking about 2 hours. Two red porgies were measured and released. Finally, the camera array was soaked for 30 minutes. We moved about 2 hours north and repeated a similar protocol at Option 1. The FREEDOM STAR traveled 134.5 miles north during the night of June 8-9.

**Personal Log**

Last night I slept well as we sailed from port to today's destination. The hum of the motors and the rocking of the ship lulled me to sleep. Today I awoke a little woozy from the seasick medicine I took as a precaution and remained that way for most of the day. I will not take any more as the weather is fine. After breakfast I sat outside on deck and read my Bible for a short while as we finished our travel, it was very peaceful. Once again we were served excellent meals. The day consisted of flurries of activity and periods of waiting which I used to write my log and debug the email program. Just about

everyone came out on deck to see what the fish traps brought up. I also assisted taking ROV still photos and deploying and recovering gear. Everyone is settling into the routine of life at sea. The crew watches movies, plays cards, and fishes during the down time, but they work extremely hard when called on, which is often. The ocean is beautiful below an endless sky, deep blue, calm and spotted with patches of Sargassum weed, a brown alga. Only a few boats have been spotted all day. I look forward to subtle changes as we move up the coast toward Cape Fear, North Carolina. Perhaps if the crew is lucky this evening we will eat fresh fish tomorrow! Hello to all my friends, students, and family out there!

“The weather is here, wish you were beautiful.” –  
Jimmy Buffett

Hasta mañana,  
Mark

### **Question of the Day**

Answer to yesterday’s question:

The FREEDOM STAR holds 44,000 gallons of diesel fuel in ten tanks. A gallon of diesel fuel costs approximately \$2.25. Just imagine the fuel costs for this week!

Today’s question: Do you think the government should have the right to close certain areas of the ocean to public use and do you think closures would have a positive environmental impact?

### **Addendum 1: Glossary of Terms**

Millibar (mb): a unit of pressure equivalent to 1/1000 atmospheres of pressure.

Atmosphere: a unit of pressure that is the average air pressure at sea level.

Transect: a sample area taken along a straight line used to estimate populations and habitat coverage.

Option: Proposed areas for deep water MPA’s that are under evaluation. Each MPA has 2-3 Options for a total of eleven.

Prolific: found in abundant, large amounts.

Relief: distance above or below relatively flat, featureless sea bottom.

Protocol: a series of steps and procedures used in an operation.

Lock: Enclosed area where ship can enter while water level between two bodies of water is raised or lowered.

### **Addendum 2: Officers and Crew of the FREEDOM STAR**

Captain: Walter Exell

Chief Mate: George Kirk

Second Mate: Mike Nicholas

Boatswain (lead Seaman): Darrell Hoover

Ordinary Seaman: Cody Gordon

Able Bodied Seaman: Allan Gravina

Cook : Patrick Downey



Mark Silverman, NOAA Teacher at Sea, practices the use of his “Gumby” survival suite. The suit is designed to assist survival at sea should a ship go down.

Retrieval (Crane Operator): Wayne Stewart  
Retrieval (Crane Operator): Darin Schuster  
Deck Supervisor : P.J. Zackel  
Chief Engineer: Tim Freeley  
Assistant Engineer: John Heer



An American alligator at Cape Canaveral Air Force Station prior to departure.



A pelican in the locks in Port Canaveral, FL.