



**NOAA Teacher at Sea  
Brenton Burnett  
Onboard NOAA Ship DAVID STARR JORDAN  
June 26 – July 6, 2006**

**NOAA Teacher at Sea: Brenton Burnett**

NOAA Ship DAVID STAR JORDAN

Mission: Shark

Abundance Survey

Day 1: Monday, June  
26, 2006

**Weather Data from  
Bridge**

Visibility: 10 nautical  
miles (nm)

Wind direction: 350  
degrees

Wind speed: 9 kts

Sea wave height: 1'

Swell wave height: 2-3'

Seawater temperature:  
20.0 degrees C

Sea level pressure:  
1010.2 mb

Cloud cover: 7/8

Altocumulus,

Altostratus



The DAVID STARR JORDAN awaits final fueling and preparation for our cruise.

**Science and Technology Log**

The DAVID STARR JORDAN was first commissioned by the U.S. Bureau of Fisheries, which later became part of the National Oceanic and Atmospheric Administration. Since its commission, it has logged over a million miles studying the biological and physical oceanography of the southwestern U.S. coast and eastern tropical Pacific. While it has a range of 7500 nautical miles (nm) and can be out to sea for 30 days, our cruise will last for 10 days and cover only a few hundred nm. It can berth up to 33 people, but on board this cruise are 12 officers, engineers and crew, and 12 scientists including myself. In ideal conditions, the top cruising speed of the DAVID STARR JORDAN is 10 knots (about 12 mi/hr).

This mission's goals are to assess shark abundance in the Pacific off the coast of California. This is done through long line fishing. At 1800 hours and approximately 20 nm out from San Diego, we made our first "set". Making a set is truly a team effort involving no fewer than five of the ship's crew and eight scientists. The crew run the winches and navigate the ship, while the science team baits and sets the line. Two people

ready the “gangions”—a gangion consists of a 4” J-hook, an 8’ wire lead and a “tuna clip”. These two pass the gangions on to two others who bait each hook with a whole mackerel, which is about a 10” fish. The baited gangions are then given to the “hooker” who clips them to the line that is running along the side of the ship and then back beyond the stern. Two others are readying balloon buoys that are attached between every five hooks. The length of the lead on the buoys, which is about 7 meters, plus the length of the gangions, about 3 meters, determines the depth of the baited hooks.

We baited 113 hooks along about 1.5 nm of line and let it soak for one hour. At dusk we began to “haul” the line in. This, too, requires a team effort. Tasks include removing the gangion from the line, “de-baiting” the hook, and stowing the gangion. Of course, if there’s a catch, then it’s really exciting. The shark, still in the water on a hook, is walked to the stern to the shark platform. There, senior scientists, Russ Vetter and Rand Rasmussen, and chief scientist Suzanne Kohin slide the shark into the shark trough, which is then quickly raised just above the water. While two of them hold the shark, they remove the hook, measure and determine the sex of the shark. All mako shark and thresher sharks will get a tag of one variety or another. Though, most of our catches will be blue sharks, other researchers, specifically those at the Pacific Island Fisheries Science Center (PIFSC), are tagging blue sharks.

Oxytetracycline is injected to some specimens, too. OTC dyes the vertebra of the sharks. The vertebra, like the rings of a tree grow layers over time. It is not certain how often these layers form, one study suggests two in a year. Injected sharks that are recaptured later will help to answer this question, and ultimately help scientists understand how quickly sharks age and reach maturity. Incidentally, recatches of this sort are typically done by fisherman who are given \$100 for recording the shark’s length, the date it was caught, and for returning four to five vertebrae.

Our first set of the trip was a practice run of about 1.5 nm and 113 hooks. The haul brought in four blue sharks and one mako. From here on out, we’ll be making 2 two mile long sets a day with 200 or so hooks.

### **Personal Log**

Though we had a delayed start to our cruise—the two diesel trucks to fuel up the ship were late—there has been very little down time! Now that I’ve been able to check email, I’ll get to questions next time! Until then...

Brenton