



**Daily Updates from David Stevenson, NOAA Fisheries
Habitat Conservation Division, Northeast Region from Research Vessel
Bold**

1500 hrs Sept 1, Jeffreys Ledge aboard R/V Bold

The video survey of bottom habitats on Jeffreys Ledge started yesterday afternoon and in 24 hours we have collected data at about 60 stations, working around the clock. The weather is ideal for lowering and retrieving equipment over the stern, so the work is going very quickly. It's like the hurricane sucked all of the energy out of the atmosphere: it's been flat calm since Tuesday with no wind. Kathryn Ford (Massachusetts Division of Marine Fisheries) has been awesome, putting in long hours over night to make sure everything was going according to plan and making adjustments when it didn't. The crew (including the cook!) and science colleagues from Environmental Protection Agency, the Army Corps of Engineers, and New Hampshire Fish and Game have been great.

The work consists of lowering a pyramid-shaped camera frame to the bottom at each station and recording video and still camera images of the bottom four times at each station. Data on dominant substrate type (mud, sand, granule-pebble, cobble, or boulder) will be extracted from the images from each station along with information on associated benthic organisms. The data will be incorporated into the Swept Area Seabed Impact model (SASI) that the New England Fishery Management Council's (NEFMC) Habitat Plan Development Team has developed for the purpose of determining where habitats that are vulnerable to fishing are located. Jeffreys Ledge is the primary benthic feature inside a 300 square mile area that is currently closed to most types of fishing in order to minimize the adverse impacts of fishing on essential fish habitats. The information collected during this survey will "fill in" areas on the ledge that have not been surveyed previously. The NEFMC will assess this information as they decide whether to modify the boundaries of the closed area so that vulnerable habitat areas will remain protected while less vulnerable areas are opened to fishing. So far, all the video and photo images we have collected on the ledge show that it is composed of gravel, cobble, and boulder substrates with an abundance of attached epifauna, i.e., it is highly structured habitat that provides shelter and food for managed species of fish and is vulnerable to fishing impacts.

1500 hrs, August 31 2011, aboard R/V Bold

Today we are running transects back and forth over Jeffreys Basin with side-scan sonar. The tow "fish" for the sonar is deployed to within 20-30 feet of the bottom and the digital images produced by echoes from individual sonic "pings" (about 10 per second) create a very detailed image of the bottom. This basin is over 500 feet deep and is located east of Portsmouth, New Hampshire. The bottom is flat and uniformly muddy and the sonar images reveal many tracks in the bottom made by bottom trawl "doors" which spread the nets as they are towed over the bottom. The parallel door tracks from individual tows are about 100 feet apart and are probably made by shrimp trawls, since Jeffreys Basin is a productive fishing ground for northern shrimp (*Pandalus borealis*), a boreal species that thrives in deep, cold bottom water in the Gulf of Maine and is harvested commercially by small trawlers based in Maine, New Hampshire, and Massachusetts. The trawl tracks in this environment persist for a long time because it is so deep that there are no strong bottom currents and the disturbance caused by storms - even by Hurricane Irene which passed through these waters four days ago - does not reach the bottom. Yesterday, we surveyed an area that was only 100 feet deep and closer to shore where there was a lot of exposed rocky ledge, rippled sand, and gravel. Later today we will begin video surveying of hard bottom habitats in shallow water on Jeffreys Ledge.

1440 hrs, August 30, 2011, aboard R/V Bold

We are north of the Isles of Shoals doing sediment profile image system camera "drops" for the Army Corps of Engineers this afternoon, will follow up more of the same at two other locations, then some side-scan sonar work for them as well. Our video survey work on Jeffreys will probably start in the next day or so. Very calm out here...long, low swells and very little wind.