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**Flounder TED  
Leatherback Escape Opening Evaluation  
January 5-10, 2006  
*Harvesting Systems and Engineering Branch***

**Background**

The Harvesting Systems Team was asked to evaluate leatherback escape openings on TEDs used in the mid-Atlantic summer flounder (*Paralichthys dentatus*) trawl fishery. During November 2003, a survey of TEDs used in the NC flounder trawl fleet was conducted to determine the size of the grids and escape openings currently being utilized throughout the fishery. All grids observed were standard rectangular flounder TED grids with outside measurements averaging 32 inches wide by 51 inches long with escape openings averaging 52 inches stretched. The majority of the captains interviewed reported that they were primarily fishing in the area off Cape May, NJ, which is well above the northern most TED line at Cape Charles, VA.

Initial testing of the leatherback opening was conducted in North Carolina during December 2003. Qualitative assessments indicated that the current grid configuration used throughout the industry is too narrow for use with a single flap, 71-inch opening. The flap used with the 71-inch opening is almost twice the width of the flap currently used, which causes it to fit loosely and gather in sections across the opening. The double cover flap was evaluated in early 2004 off Cape May, NJ. Qualitative assessments indicated that the double cover flap fit the 32-inch grid much better than the 71-inch single flap. Video observations revealed limited amounts of flounder loss through the TED opening but, a single tow made without a TED installed resulted in a large flounder catch that almost doubled previous tows. This observation combined with the fact that the industry had significantly changed their fishing configuration since initial TED testing was conducted in this fishery raised questions about the effect of TED installation on trawl configuration.

In response, a four-seam flounder trawl, commonly used in the deep water fishery off Cape May, NJ, was fitted with a standard flounder TED and towed at various speeds during the Harvesting Systems Team's 2004 TED testing and diver evaluations held in Panama City, Florida. Observations along the mouth of the trawl indicated that the TED had no effect on trawl configuration or bottom contact. The catch differences observed

during the 2004 Cape May testing were attributed to between tow variability. Further testing of the double cover leatherback opening was scheduled for the 2004-2005 fishing season.

To effectively test the leatherback opening for flounder catch retention, paired comparisons aboard a twin trawl vessel were necessary. Only two twin-rigged vessels remained in the fishery, all others had changed over to single rigs to facilitate fishing in deeper water. Each of the twin-rigged vessels was contracted and the first trip was conducted off North Carolina in February 2005. The study was designed to compare flounder catch between two trawls equipped with standard flounder TEDs, one fitted with a standard 35-inch x 12-inch opening and the other with the double cover leatherback opening. Too few flounder were encountered during the trip to make valid comparisons. Subsequently, another trip was scheduled during the 2005-2006 fishing season.

#### *2006 Leatherback Opening Evaluation*

The next trip was conducted in January 2006 off North Carolina, with 27 successful tows completed. The double cover leatherback opening was compared with a standard 35-inch x 12-inch opening in paired comparisons aboard a twin trawl vessel. Flounder catches were minimal averaging 17 fish per tow. Overall, differences in flounder catches were not significant between nets. The trawl equipped with the double cover leatherback opening caught 5.3% more flounder by number and 16.5% more by weight than the trawl with the standard opening.

In addition to the leatherback opening evaluations, a flexible, 60-inch, prototype flounder/flynet TED that could be used interchangeably between fisheries was assessed during the 2006 Harvesting Systems Team's annual small turtle TED testing and diver evaluations in Panama City, Florida. The gear configuration looked good with a sample of several small turtles successfully exiting the TED. Commercial evaluations will be scheduled during the 2006-2007 fishing season.