

Title: **Measuring Fishing Vessel Safety and Risk Taking**

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Abstract: Commercial fishing is a dangerous occupation, and accidents are bound to happen given the operational environment within which fishing is conducted. Fishery regulations have been shown or presumed to affect vessel safety. NOAA Fisheries is promoting the adoption of catch share based fishery management programs nation-wide as one way to improve vessel safety. As such, vessel safety has been identified as a key measure of the performance of share based management regimes. Despite the emerging focus on safety little research has been conducted to quantify changes in accident rates or risk taking. Our previous research developed models of accident and trip taking probability in North Atlantic U.S. EEZ fisheries. For the time period of analysis (1981 - 2000) accident rates were found to be declining. Trip taking probability was inversely related to wind speed, although tradeoffs between exposure to risk and expected revenue were found. Finally, no systematic management effect was evident from this analysis. We now expand on this research to examine alternative measures of fishing vessel safety and risk taking. Considerations include more expansive treatment of accident types, measures of accident severity, and alternative measures of accident rates. Because accidents are conditional on the decision to take a fishing trip, we also further explore incentives to engage in risk taking and how they may be affected by management regime. The performance characteristics of the most promising metrics are evaluated using data from several different regions in the U.S.