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A Summary of the Calibration Studies Conducted by the Northeast Fisheries Science Center for the Spring and Fall Groundfish Bottom Trawl Surveys

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Abstract

The Northeast Fisheries Science Center (NEFSC), bottom-trawl surveys have been conducted annually for over half a century. During this time there have been several gear and vessel changes and experiments have been conducted for most of these. In the 1970s, a set of 6 cruises was conducted to determine the difference in catchability of the two nets used for the spring survey. The net used during 1973-1981 was generally more efficient than the standard net. The door change in 1985 was tested during 8 cruises in the 1980s. In general, the new doors were more efficient for all species tested. The main vessel used between 1963 and 2008 was the FSV Albatross IV but it was sporadically replaced for various reasons by the FSV Delaware II. Five pairs of cruises were conducted between 1981 and 1991. The DE II was more efficient, likely due to the slower winches and the 11-foot trawl door backstrap which may have herded fish. The exceptions were horseshoe crab (N = 15) and Atlantic sea scallop (Cis included 1). In 1997, the DEII was completely refit so 5 additional cruises were conducted to determine if the differences between the two ships still remained. For many species, the difference with the new DE II was smaller or had changed direction. In 2009, the AL IV was changed to the FRV Henry B Bigelow. At this time, the survey net was also changed and the survey protocols were changed. In 2008, 636 paired tows conducted. The new configuration is generally 2-10 times more efficient than the old setup. Analyses have been conducted for various species at length using methods including length cut-points, double logistic, and an orthogonal polynomial smoother.