

Effect of Shortening Haul Durations on a Survey's Species Richness Estimates

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Abstract

Maximising survey resources in pressing economic conditions is a concern for national marine institutions. The issue of whether 30 minutes is the optimal tow duration for the North Sea IBTS survey was questioned. Tow duration experiments were conducted during quarter one (France only) and quarter three 2015 North Sea IBTS. These surveys are presently undertaken to meet fisheries management requirements, it is expected that they also fulfil the MSFD data collection needs for deriving and calculating indicators. Consequences of changing current monitoring programmes must be carefully considered prior to operational implementation. Conserving and restoring biodiversity is a key objective of the MSFD, changes in survey design which affect our ability to monitor and assess trends in groundfish species richness may hamper research and development of appropriate indicators of species richness within our regional seas. Monitoring and assessment of fish communities is essential to demonstrating the achievement of GES across the waters of the Northeast Atlantic covered by the MSFD. An analysis to compare the biodiversity of species from the tow duration experiments for the IBTS will be presented. Initial analyses using generalized additive models did not identify a significant effect (H_0 no effect) of the shortened tow duration on the abundance estimates of several assessed species (e.g. haddock and Norway Pout), however tow duration appears to have an effect on the records of occurrence and abundance estimates for the rarer species. Preliminary analyses also suggest that haul duration affects species richness, being consistently lower in short hauls compared to long hauls, and body size, with individuals being smaller in the shorter hauls.