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50 shades of grey – The colours of ICES stock assessments

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Good knowledge of the state of a resource is prerequisite to apply the best possible management measure, and especially to advance ecosystem-based fisheries management. In the North-Atlantic region ICES is the organization, which assess the state of the majority of the exploited marine fish stocks. It could be argued that the gold standards in assessing the state of a stock are analytical stock assessment methods. However, despite large efforts in developing and applying these methods to give advice, policy makers often deviated in their decision from this scientific advice in the past. As a result, many stocks are still below levels, which could produce MSY and often the fishing mortalities are still higher than F_{MSY}. In this study, we investigated the variability in the perception of stocks in analytical assessments over time. We investigate, how much the assessment **for a given year** changes over time, as more information becomes available. We analysed data from ICES Assessment Working Group Reports on SSB, F and recruitment. In total our analysis comprises 50 fish stocks in the time-period 2010-2015, representing 8 eco-regions and 13 species. We show that the estimates of the most recent stock status had regularly to be corrected in later years. The degree of correction is highly variable, and both systematic over- as well as underestimation seems to exist. Assessment variability is then analysed in relation to eco-region and stock characteristics. We conclude, that ICES stock assessments show no black or white examples, but that we rather see 50 shades of grey.

Keywords: stock assessment, eco-region, variability

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