

How to make the Kattegat cod fishery sustainable

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Abstract

The cod population in Kattegat is, as many other commercially exploited fish stocks around the world, extensively overfished and its size is below biologically safe thresholds. To get a picture of the chance of recovery I used risk analysis to evaluate and compare the effects of different degrees of age selectivity in harvesting and different harvest fractions evaluated after three, five and ten years. I used the same method to investigate if a higher natural mortality than what is commonly assumed would change the viability of the population markedly. I also investigated if a delayed first age of maturity would affect the population's probability of recovery. For each of these different scenarios I also investigated the size of the catch the fishery would achieve. The strategy in which harvest of the younger age classes was prohibited turned out to suit all interests, the population recovered rapidly and the fishery maximised the catch. Restricting the harvest of the younger age classes can be implemented through increasing the mesh size of the nets. The population viability was very sensitive to the natural mortality and it would probably pay off to examine how high it really is since it would make the management safer. The difference in age of maturity that I examined had no significant impact on the probability of recovery.

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