

Title: **North-East Arctic Cod Model**

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Abstract: The international council for the exploration of the seas (ICES) publish annual reports on fish stock assessments. Based on the stock assessment data for the North-East Arctic cod we estimate the effective fishing mortality, establishing coefficients for the catchability-at-age and the annual fishing effort. The fishing effort estimates are then used in the estimation of a cost function for the Norwegian harvesting of the stock. Furthermore, we estimate stock-recruitment relationships of the North-East Arctic cod. The recruitment is influenced by climatic conditions at the time of spawning, and we incorporate this by controlling the sea temperature in the stock-recruitment relationship, and found that the stock-recruitment was increasing in the sea temperature at the time of spawning. These and other features will be used in analysis of how climate change affect the stock, the implications for the fisheries with respect to sharing of the stock between Russia and Norway, and the socio-economic consequences of climate change on communities and industry.