

Determining Optimal Catch in Age-Structured Multispecies Fisheries

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ABSTRACT This study investigates optimal catch of Barents Sea stocks, namely Northeast Arctic Cod and Capelin in multispecies ecosystem. We solve a multispecies age structured bioeconomic model for predator-prey interaction. Barents Sea stock data from ICES are employed for model application. Among others, we also include sustainability constraint in the model that contributes towards ecosystem based management of fishery. Our preliminary result suggests that a conservative harvest is optimal for capelin compared to the single species model and a higher harvest is possible in cod in multispecies model. Furthermore, we found that a pulse fishing yields higher value in cod (predator) compared to the uniform (current) fishing policy.