

Title: **Bio-Economic Evaluation of Implementing Selective Gears**

Author(s): Niels Vestergaard, Lone Grønbæk Kronbak, Rasmus Nielsen, Ole Jørgensen

Abstract: The lack of selectivity in many fisheries may lead to discards and bycatch. Discards of under-sized or non-commercial species/individuals represent damage to the eco-system, an additional source of overfishing and a waste of resources. Bycatch may increase fishing pressure on species targeted by other fishermen. The purpose of the paper is to investigate in a bio-economic model the scope for implementing more selective gears in the Danish mixed nephrops fishery in Kattegat/Skagerrak. The bio-economic model is developed in such a way that it can illustrate biological changes and the resulting changes in both the profit of fisherman and the net-benefit from a social point of view. The results are based on a detailed biological model, where it is possible to handle both the changes in size- and species composition of catches, landings and discards due to changes in selectivity. The result shows that it is not an advantage to move to gear types that reduces the catches of round- and flatfish significant. The catches of nephrops do also decrease and the resulting improvements in stock biomass do not compensate enough for the overall loss due to the lower catches. However, a general improvement in mesh size improves the overall economic results from the fishery.