

ICES/PICES 6th Zooplankton Production Symposium  
Abstract for Workshop 3: Zooplankton as a potential harvestable resource

## An individual based modeling approach to harvesting of *Calanus finmarchicus* in the Norwegian Sea

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Currently, only about 2% of the worlds consumed food has marine origin, even though roughly 50% of the world's total biological production happens in the oceans. It is unlikely that this number will increase significantly by better management of the already harvested stocks. Therefore, an increased utilization of the lower trophic levels may be necessary if one are to increase future marine harvest.

In recent years, there has been a trial fishery on the *Calanus finmarchicus* in the Norwegian Sea. For now, the yearly quota is set to 1000 tons, and possible ecosystem effects are yet to be explored on a population level. Here, we present the results from an individual based *C. finmarchicus* model (NORWECOM.E2E) with individual based fishing vessels. The fishing vessels represent those used in the Calanus fishery, although the aim is not to realistically recreate their exact fishing pattern. We investigate the ecosystem impact of fishing on the lower trophic levels along northern Norway, with emphasis on the inflow of *C. finmarchicus* individuals to the Barents Sea.

**Keywords:** Zooplankton, calanus finmarchicus, fishing vessels, harvest, ecosystem impact, Norwegian Sea, Barents Sea

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