

Calanus finmarchicus at its northern border

Calanus finmarchicus is a key species in the North Atlantic, but are also abundant Arctic areas. How its distribution will be affected under climate change depend on the mechanisms and processes constraining their reproduction, recruitment and survival. Here we present measurements of *C. finmarchicus* egg production during the spring bloom in Disko Bay, West Greenland in the years 2008, 2011 and 2012. The spring bloom in 2008 was short and intense and led to a smaller production of *C. finmarchicus* than the prolonged blooms with lower maximum phytoplankton biomass observed in 2011 and 2012. Food concentration was controlling egg production rates during the bloom in Disko Bay. However, the low temperature in the Bay explains why the egg production here is much lower than at more southerly localities despite high food concentrations. The study suggests that an increase in magnitude of the Arctic phytoplankton spring bloom will not increase copepod egg production, whereas a prolonged bloom and increasing temperatures will. Furthermore, we discuss the importance of timing of the vertical migration, advection and the total length of the productive season for the success *Calanus finmarchicus* at its northern border.