

# 56 vs. 180 $\mu\text{m}$ mesh Net Catchability

## Introduction

In sub-Arctic and Arctic regions the most studied zooplankton size fraction is mesozooplankton, organisms of sizes between 0.2 and 20 mm. Studies have revealed that the mesozooplankton of size closer to the lower size range may be under-sampled by standard mesozooplankton nets.

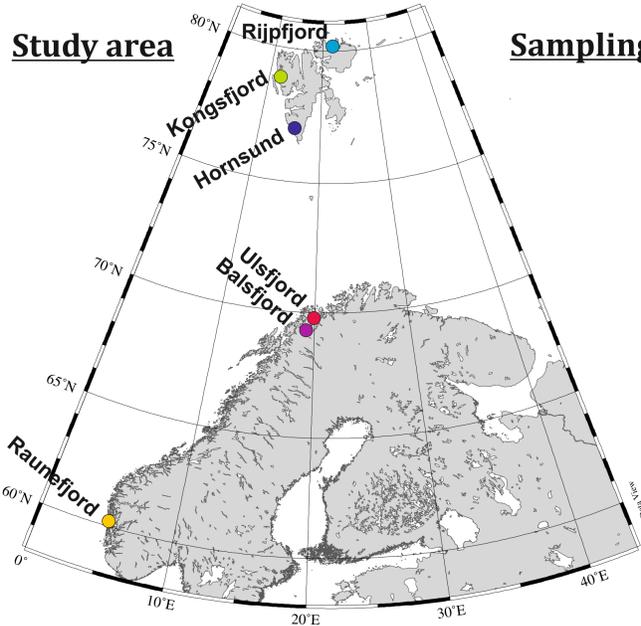
We analyzed zooplankton catches from nets of different retention, based on sampling in boreal, sub-Arctic and Arctic fjords. The compared data express zooplankton abundance estimates per  $\text{m}^3$ , averaged for the entire water column sampled (160-340 m depth). The results give an overview of underestimating small sized mesozooplankton abundance in collections based on standard 180  $\mu\text{m}$  mesh nets.

study Oceania during sampling cruise in the Arctic



## Methods

### Study area



### Sampling gear

Multinet  
180  $\mu\text{m}$

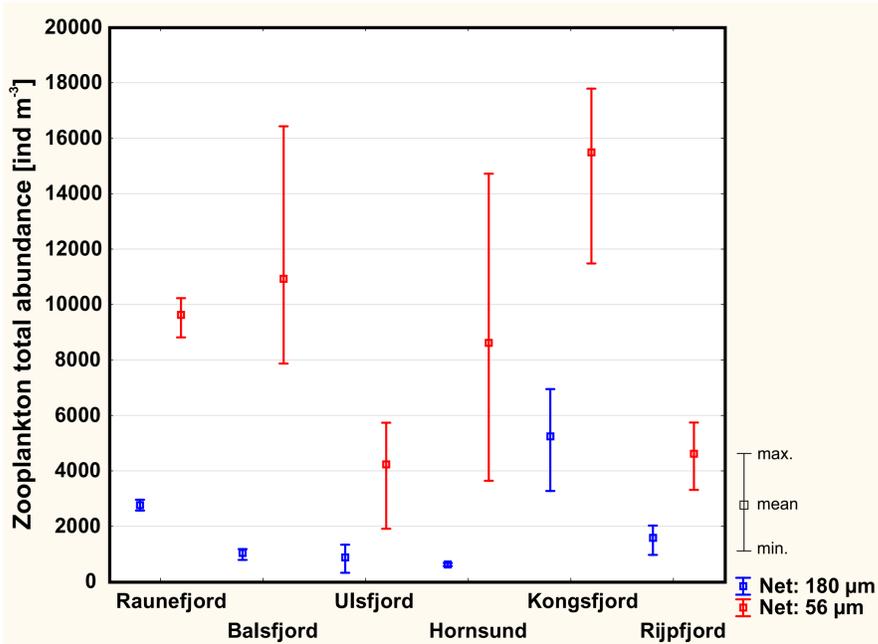


WP-2  
56  $\mu\text{m}$

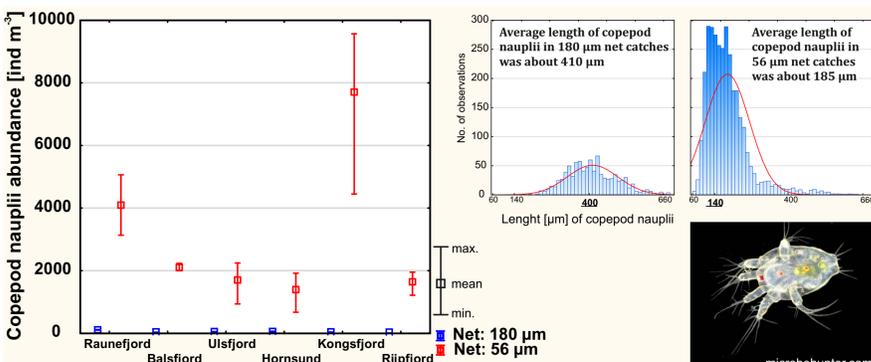


## Results & Conclusions

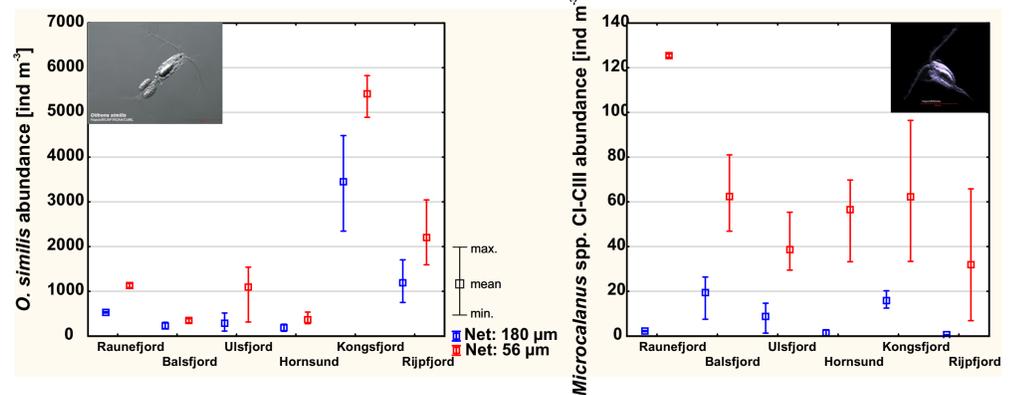
**1** Overall, the abundance of zooplankton was from 3x to 22x higher in 56  $\mu\text{m}$  net catches



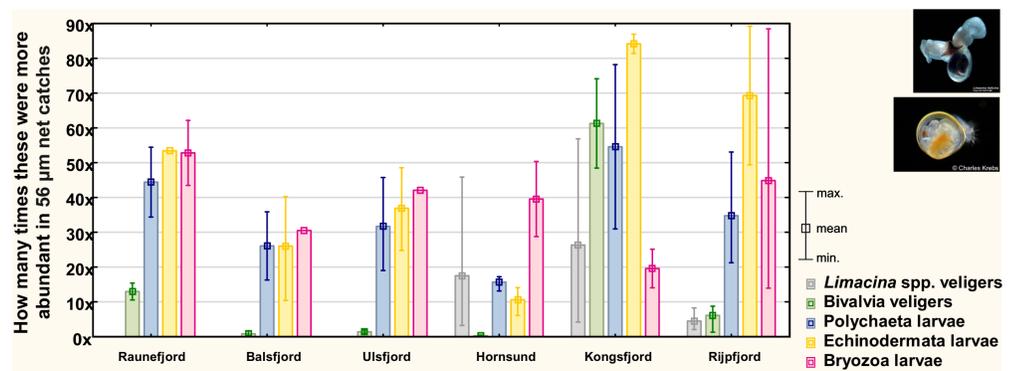
**2** Major differences concerned nauplii of copepods. They were from 23x to 734x more abundant in 56  $\mu\text{m}$  net catches



**3** There was up to 6x more *O. similis*, and up to 20x more of *Microcalanus* spp. and *T. borealis/Ocaea* spp. in 56  $\mu\text{m}$  net catches. The differences were due to under-sampling of young copepodids of *O. similis* and *Microcalanus* spp. and young copepodids and males of *T. borealis/Ocaea* spp.



**4** Representatives of all or only some size/age groups of certain species were almost or totally absent in catches from 180  $\mu\text{m}$  net. Among copepods, this concerned *Microsetella norvegica*. Other taxa for which the numbers in fine mesh net were substantially higher included veligers of *Limacina* spp. and bivalves, as well as larvae of polychaetes, echinoderms and bryozoans



**Conclusion:** Small sized mesozooplankton is considerably underestimated in studies based on 180  $\mu\text{m}$  mesh nets. The problem concerns holoplankton as well as meroplankton taxa. The largest underestimation was found for copepods nauplii. It seems necessary to carry out further research to determine which taxonomic and size groups are susceptible to these errors and to determine the scale of the error made in the quantitative sense

