

**Winter decrease of zooplankton abundance and biomass in subalpine oligotrophic Lake
Atnsjøen (SE Norway)**

Thomas C. JENSEN*

Norwegian Institute for Nature Research, Landscape Ecology Dept., Gaustadalléen 21, 0349
Oslo, Norway

*Corresponding author: thomas.jensen@nina.no

Notes on estimation of non-algal POC

In order to estimate the approximate level of non-algal POC in Lake Atnsjøen that could potentially serve as an additional food-source for zooplankton the non-algal POC level in the lake was calculated using summer measurements of the POC/TOC ratio of 11% (Woszczyk and Jensen, *personal communication*). Hence, this estimation does not take seasonal variation in the POC/TOC ratio into account. Lake studies including data in seasonal variation of the ratio of POC/TOC are not common. However, Camerero *et al.* (1999), report annual changes of POC and DOC from the oligotrophic Lake Redó, the Pyrenees (ice-covered from December to April).

Taking the fraction of POC/TOC as POC/(DOC+POC) in this study (based on data from Figure 1 in the paper) the POC/TOC showed some seasonal variation in Lake Redó and was 20% lower during the ice-covered period as compared to the growing season. Reducing POC/TOC by 1/5 to 8.8% during the ice-covered period in the estimation of POC in Lake Atnsjøen the concentration of non-algal POC is still far higher than the algal POC. The seasonal pattern in POC/TOC is not necessarily similar in the two lakes.

Nevertheless, the above considerations show that despite seasonal variation in the POC/TOC ratio, the concentration of non-algal POC is most likely still much higher than the algal POC in

Lake Atnsjøen, even under the ice despite potentially lower POC/TOC-ratio during this period. The considerations therefore illustrate that non-algal POC could potentially serve as an additional food source for zooplankton during periods of low algal food.

References

Camarero L, Felip M, Ventura M, Bartumeus F, Catalan J, 1999. The relative importance of the planktonic food web in the carbon cycle of an oligotrophic mountain lake in a poorly vegetated catchment (Redó, Pyrenees). *J. Limnol.* 58:203-212.

Non-commercial use only