

Fig. S1

Fig. S1. Chemical structures of diatom highly branched isoprenoid (HBI) biomarkers described in this study.

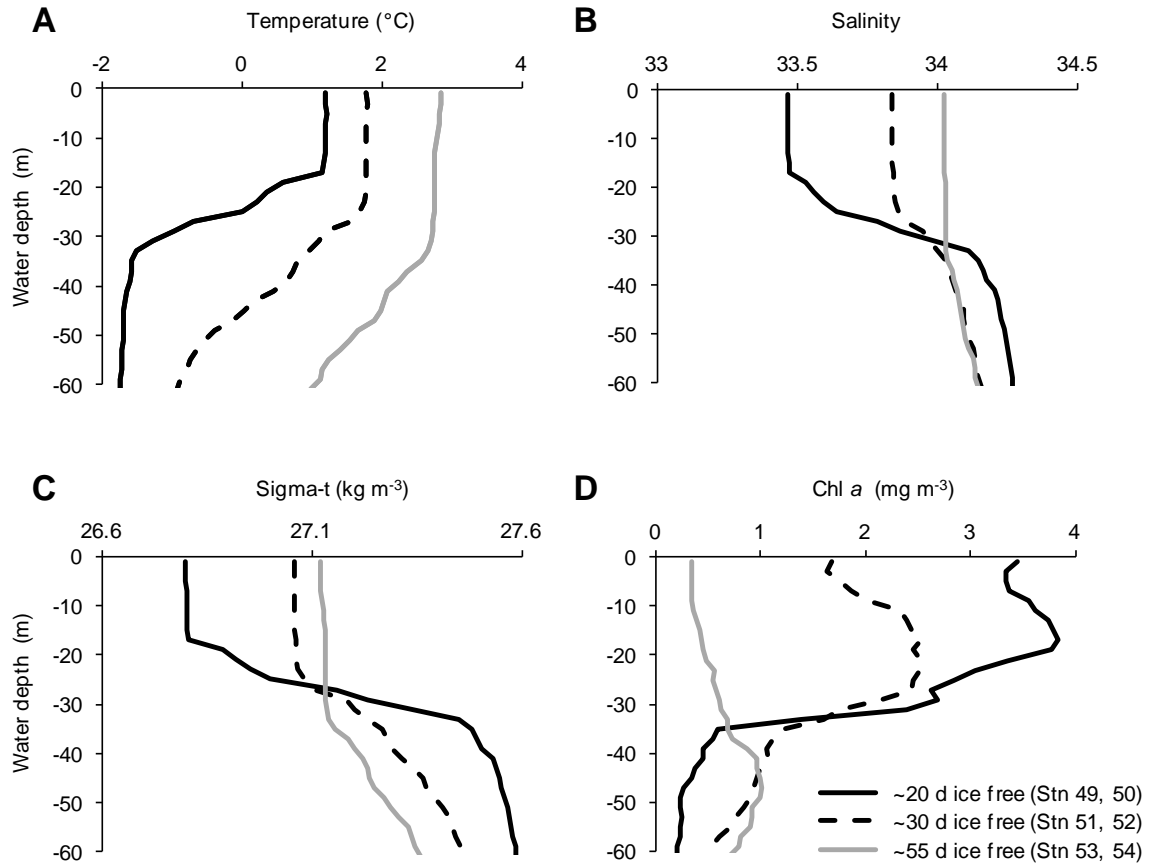


Fig. S2

Fig. S2. Formation and degradation of upper water column stability and associated phytoplankton development and HBI III production during sea ice retreat in the eastern Scotia Sea in spring/ summer 2003. **A)** Vertical profiles of temperature, **B)** salinity, **C)** density and **D)** chl *a* at 20, 30 and 55 days after sea ice melt. For each parameter the mean of two neighbouring stations is presented. The HBI III content of the suspended matter was highest at stations which had been ice free for ~30 days ($3.4 \pm 0.6 \text{ ng mL}^{-1}$, Stn 51 & 52), but lower for stations that became ice free more recently, ~20 days ($1.3 \pm 0.9 \text{ ng mL}^{-1}$, Stn 49 & 50) or longer ago, ~55 days ($0.9 \pm 1.0 \text{ ng mL}^{-1}$, Stn 53 & 54).

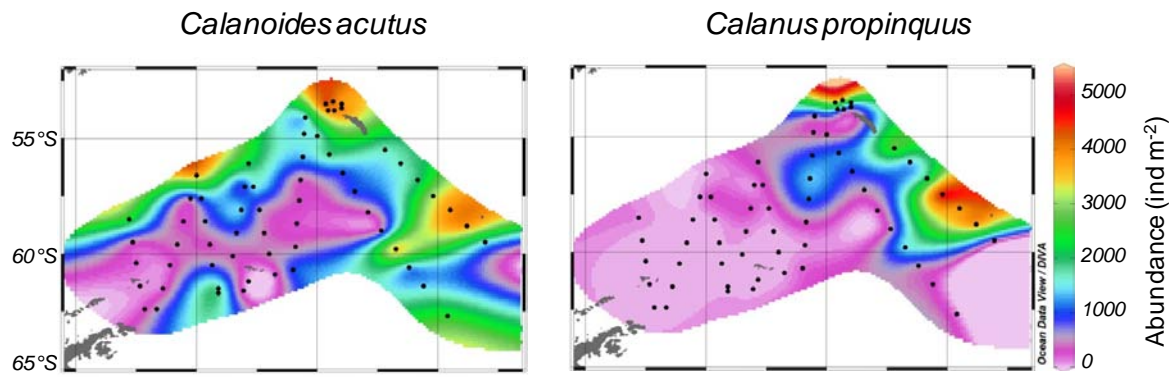


Fig. S3

Fig. S3. Large calanoid copepods, *Calanoides acutus* and *Calanus propinquus*. Species abundance across the Scotia Sea in spring/ summer 2003.