

## O-5.40

### Consequences of glacier retreat on the trophic ecology of filter feeders and benthic-pelagic coupling in an Antarctic coastal ecosystem

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In the last 20 years, evident changes have been observed in the structure of megabenthic and planktonic communities inhabiting Potter Cove (King George Island, South Shetland Islands) due mainly to the retreat of the surrounding Fourcade Glacier. The higher input of glacier melt water in this marine environment leads to an increase in the concentration of suspended particulate inorganic material, thereby altering the filtration and respiration rates of pelagic and benthic filter feeders. In fact, the increase in the inorganic fraction could limit the uptake of organic particles, thus reducing the assimilation effectiveness of the filtering organisms and even producing high mortality levels.

In order to better understand the energy flow in Potter Cove's benthic-pelagic coupling processes, the trophic ecology of selected filtering species has been assessed by means of aquaria experiments, during the recent 2013 Antarctic summer campaign, in the frame of the ECLIPSE (Effects of CLimate change in Polar Shallow benthic Ecosystems) project, supported by the TOTAL foundation. Seston depletion rate, assimilation efficiency, faeces's production rate and biodeposition rate were studied under different diets and sediment concentrations on the Antarctic krill (*Euphausia superba*) and a sea squirt (*Cnemidocarpa verrucosa*), both considered key organisms in the Antarctic food web.

In this contribution preliminary results obtained of this work are presented.