**EXTRA**

**2.2.2 Sampling of surface sediments and fluxes at the sediment-water interface**

Surface sediments were sampled at eight stations, two stations in four transects, each (Fig. 1) using an USNEL box corer (50 x 50 x 40 cm). After retrieval, surface water was carefully drained without disturbing the sediment surface using a silicone tube. Box cores were subsampled for (a) lipids (Rontani et al. 2013), lipid biomarkers including their carbon  isotopic signature  (Tolosa2013) in the top 0.5 cm, (b) stable isotopes (C, N) and manganese and iron oxides in the top 1.0 cm (Link et al. 2013a), (c) sediment pigments using syringe cores of 2.4 cm diameter down to 8 cm (Link2013a, Link2019), and (d) fluxes at the sediment-water interface (oxygen, silicic acid, nitrate, nitrite, ammonium, phosphate) using microcosms incubations on subcores (10 cm diameter, 20 cm deep) (Link2013a, Link2019). At three stations (140, 345, 390), macrofaunal abundance and diversity were determined from incubation subcores (Link2013b, Link2019).

Samples for (a)-(c) were stored frozen until analysis in the respective home labs. For method, details see Link2013a, Link2019, Rontani et al. 2013, Tolosa2013. For fluxes at the sediment-water interface (d), three subcores per station were topped with bottom-water obtained from the CTD-rosette and incubated for 24-48h in the dark at 2-4 °C. Fluxes were measured as concentration change in the water overlying the sediment over time. For nutrient fluxes (silicic acid, phosphate, nitrate, nitrite, ammonium), water samples were taken at the onset, half-time, and end of the incubation. Nutrient samples were analyzed immediately (ammonium, Link2013a, Holmes1999) or stored at -80 °C and analyzed within two weeks using an Autoanalyzer 3 (Bran and Luebbe) based on Hansen1999. Oxygen concentration was measured using a non-invasive optical probe (Fibox LCD, Presens, Link2013a). At the end of incubations, sediments were sieved over 500µm metal sieves and stored in a 4% borate-buffered formaldehyde solution for later fauna analysis.