**THE INTERPLAY OF MACROFAUNA FUNCTIONAL GROUPS SHAPES NITROGEN CYCLING IN OLIGOTROPHIC ESTUARINE SEDIMENTS**

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**SUPPLEMENTARY MATERIAL**

**Table S1** The checklist of macrofauna taxa recovered from incubated intact sediment cores

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Taxon** | **Intact core ID** | | | | | | | | | | | | | | | | | |  |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |  |
| *Monoporeia affinis* | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |  |
| *Marenzelleria* sp. | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |  |
| *Limecola balthica* |  | + |  | + |  |  | + | + | + | + | + | + | + | + | + |  | + |  |  |
| Oligochaeta | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |  |
| *Corophium volutator* |  |  |  | + |  | + | + | + | + | + |  |  | + |  | + | + | + |  |  |
| Chironomidae |  | + | + | + |  |  | + | + | + | + |  |  |  |  | + | + | + |  |  |
| *Pygospio elegans* |  |  |  |  |  |  |  |  |  | + |  |  |  |  |  |  |  |  |  |
| *Saduria entomon* |  |  |  |  |  |  | + |  |  |  |  |  |  |  |  |  |  |  |  |
| *Hydrobia* |  |  |  |  |  |  |  |  |  |  |  |  |  |  | + |  |  |  |  |
| *Hydrobiidae* |  |  |  |  |  | + |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Table 2S** Equations used to calculate the N flow in Figure 8. Dtot – total denitrification rates, Dw – denitrification due to NO3– diffusion from overlaying water, Dn – coupled nitrification-denitrification, DNRA – dissimilative nitrate reduction to ammonium, DNRAn – coupled nitrification-DNRA, DNRAw – DNRA due to NO3- diffusion from overlaying water, N:C is molar ration between nitrogen and carbon in surface sediment, TOU – total oxygen uptake by sediments

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Pathway of N** | **Determination** | **Equation** |
| 1 | NH4+ efflux | measured | – |
| 2 | NOx– efflux | measured | – |
| 3 | Dtot | measured | – |
| 4 | Dw | measured | – |
| 5 | Dn | calculated | (3) – (4) |
| 6 | DNRAn | measured | – |
| 7 | DNRAw | measured | – |
| 8 | Animal excretion | measured | – |
| 9 | Nitrification | calculated | (2) + (5) + (6) |
| 10 | Mineralization | calculated | ((11) – (12) – (13)) × 1 × N:C |
| 11 | TOU | measured | – |
| 12 | O2 animal resp. | measured | – |
| 13 | O2 nitrification | calculated | 2 × (9) |

NOx- flux – measured combined NO2- and NO3- flux at the sediment-water interface via whole incubations.