



Vertical distribution and respiration rates of benthic foraminifera: Contribution to aerobic remineralization in intertidal mudflats covered by *Zostera noltei* meadows

Submitted by Luzia Bossé on Tue, 01/31/2017 - 17:16

Titre	Vertical distribution and respiration rates of benthic foraminifera: Contribution to aerobic remineralization in intertidal mudflats covered by <i>Zostera noltei</i> meadows
Type de publication	Article de revue
Auteur	Cesbron, Florian [1], Geslin, Emmanuelle [2], Jorissen, Frans [3], Delgard, Marie-Lise [4], Charrieau, L. [5], Deflandre, Bruno [6], Jézéquel, Didier [7], Anschutz, Pierre [8], Metzger, Édouard [9]
Pays	Pays-Bas
Editeur	Elsevier
Type	Article scientifique dans une revue à comité de lecture
Année	2016
Langue	Anglais
Date	20 Sept. 2016
Pagination	23-38
Volume	179
Titre de la revue	Estuarine, Coastal and Shelf Science
ISSN	0272-7714
Mots-clés	Biogeochemistry [10], Carbon remineralization [11], Living benthic foraminifera [12], Microhabitat [13], <i>Zostera noltei</i> [14]

Résumé en
anglais

The present study investigates the influence of seagrass root systems on benthic hard-shelled meiofauna (foraminifera). In February and July 2011, sediment cores were collected at low tide at two sites in Arcachon lagoon, a vegetated site with *Zostera noltei* and a second site with bare sediments. We used the highly discriminative CellTracker™ Green fluorogenic probe technique to recognize living foraminifera and to describe foraminiferal density and diversity. Three dominant species of foraminifera were observed: *Ammonia tepida*, *Haynesina germanica* and *Eggerella scabra*. The two calcareous species, *A. tepida* and *H. germanica*, were preferentially found in the upper half to 1 cm of the sediment. At the vegetated site, these two species had a slightly deeper microhabitat. In the literature, both species have been described alive in much deeper sediment layers, possibly due to false positives from the Rose Bengal staining method. These two species also showed 1) higher densities at the site with *Z. noltei*, 2) a higher density in February when conditions were supposed optimal due to a microphytobenthos bloom, and 3) dissolved calcitic shells in July, probably resulting from a lower pH. The agglutinated species *E. scabra* was present alive down to at least 7 cm depth. *E. scabra* showed high densities in the anoxic part of the sediment at both the vegetated and bare sites, with a substantially higher density in summer at the site with bare sediments. Its presence at depth may be related to its trophic requirements; this species could be less dependent on labile organic matter than *A. tepida* and *H. germanica*. On this intertidal mudflat, the foraminiferal contribution to aerobic carbon remineralization, based on respiration rate measurements, can account for up to 7% of the diffusive oxygen uptake, almost five times more than the maximum contribution recorded in open marine environments (300 m depth) in the Bay of Biscay.

URL de la
notice

<http://okina.univ-angers.fr/publications/ua15524> [15]

DOI

10.1016/j.ecss.2015.12.005 [16]

Lien vers le
document

<http://www.sciencedirect.com/science/article/pii/S0272771415301608> [17]

Titre abrégé Estuarine, Coastal and Shelf Science

Liens

- [1] <http://okina.univ-angers.fr/fcesbron/publications>
- [2] <http://okina.univ-angers.fr/emmanuelle.geslin/publications>
- [3] <http://okina.univ-angers.fr/f.jorissen/publications>
- [4] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=6707>
- [5] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=6892>
- [6] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=6374>
- [7] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=6709>
- [8] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=6213>
- [9] <http://okina.univ-angers.fr/edouard.metzger/publications>
- [10] <http://okina.univ-angers.fr/publications?f%5Bkeyword%5D=22240>
- [11] <http://okina.univ-angers.fr/publications?f%5Bkeyword%5D=22241>
- [12] <http://okina.univ-angers.fr/publications?f%5Bkeyword%5D=22238>
- [13] <http://okina.univ-angers.fr/publications?f%5Bkeyword%5D=8110>
- [14] <http://okina.univ-angers.fr/publications?f%5Bkeyword%5D=22239>
- [15] <http://okina.univ-angers.fr/publications/ua15524>
- [16] <http://dx.doi.org/10.1016/j.ecss.2015.12.005>
- [17] <http://www.sciencedirect.com/science/article/pii/S0272771415301608>

Publié sur *Okina* (<http://okina.univ-angers.fr>)