



## Conference announcement

The 4th European Conference on Coastal Lagoon Research, Research and Management for the Conservation of Coastal Lagoon Ecosystems, South - North comparisons, will take place in Montpellier (France) from 14-18 December 2009.

Among the 13 conference thematic sessions, we can find this one: Sediment biogeochemistry: linking the biology of the benthic biota and the sediment physico-chemistry to understand their impact on water quality.

Abstract submission extended deadline: **15th August**



[http://www.ecolag.univ-montp2.fr/index.php?option=com\\_content&task=view&id=205&Itemid=131](http://www.ecolag.univ-montp2.fr/index.php?option=com_content&task=view&id=205&Itemid=131)

## Recent paper

Spatial interactions in the *Macoma balthica* community control biogeochemical fluxes at the sediment-water interface and microbial abundances. *Journal of Marine Research* 67(1), January 2009 , pp. 43-70.

Emma Michaud, Gaston Desrosiers, Robert C. Aller, Florian Mermillod-Blondin, Bjorn Sundby, Georges Stora

We examined how interactions among the three dominant species of the *Macoma balthica* community in the St-Lawrence estuary influence net biogeochemical fluxes and the composition of the sedimentary bacterial community.

Compared to treatments with single species, combinations of multiple species changed the fluxes of oxygen, phosphate, ammonium, and nitrate across the sediment-water interface and altered the composition of the microbial community beyond the level predicted by linear addition of the single species effects. Most combinations involved positive interactions that increased net fluxes.

Most effects could be directly linked to total oxic sediment volumes and burrow volumes generated by the different species.

*Emma Michaud*



How would you call this type of bioturbation ?

## Research: A benthocosm facility at ISMER

A benthocosm facility welcomes 350 m deep sediment cores to study the St. Lawrence hypoxia influence on biology, bioturbation and geochemistry.

The Lower St. Lawrence Estuary (LSLE), Canada, has a permanent 1200 km<sup>2</sup> hypoxic area (< 62.5 µM) and many key questions remain on the effect of this hypoxia on crucial field as biology, bioturbation and geochemistry. On early July 2009, seven intact sediment cores (45 x 45 x 30 cm) and their associated fauna were collected at 350 m deep in the LSLE. The benthocosm facility, installed at the Institut des sciences de la mer de Rimouski (ISMER), is composed of three separate basins. It is planned to welcome its new inhabitants for at least a year and to keep them at *in situ* temperature and salinity. The oxygen concentration of each basin will be individually adjusted to desired levels by bubbling nitrogen. During the next year, geochemical experiments will be undertaken and fluxes of oxygen, nutrients, and trace metals will be measured as a function of different environmental stresses as oxygen levels. We hope to better understand key bioturbation processes in relation to different environmental stresses by monitoring surface manifestations of faunal activity (burrows creation, active transport of deep reduced sediment to the surface by feeding or excavation, creation of animal tracks, etc.) using high-resolution digital photography. This will also contribute to provide information to be used in conjunction with *in situ* bottom photography to scale the laboratory observations to greater scales found in nature.

We are excited by this new opportunity and we'll keep you informed of the development of the experiments.

*Régnald Belley*

