

Decadal changes of carbon dioxide in the Scheldt estuary.

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Since late 2002, we have carried continuous measurements of the partial pressure of CO₂ (pCO₂) at a fixed station in the upper Scheldt estuary, allowing a detailed description of the seasonal and inter-annual variability. This time-series reveals overall stable pCO₂ conditions from 2003 to 2006, and a major decrease of pCO₂ from late 2006 to early 2007 that is maintained during 2008 and 2009. To further investigate the propagation of these changes in the whole Scheldt estuary, we have carried out a monthly survey of pCO₂ since January 2008 covering the estuary from freshwater to the mouth. Comparison with a similar monthly data-set obtained in 1997/1998, shows that a major decrease of pCO₂ occurred in estuary in zone from 0 to 15 salinity. Drivers of these changes are discussed.

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