# Seasonal evolution of the River Scheldt nitrate isotopic composition

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Man-induced changes have a major impact on the biogeochemical cycle of nitrogen. In the framework of the regional OMES programme (Flanders) a long-term study of biological and physico-chemical parameters is conducted on the River Scheldt. The covered section is about 100km between the cities of Ghent and Antwerp with 25 stations sampled on a monthly and even fortnightly (summer period) basis. Knowledge about the natural $\delta^{15}N$ and $\delta^{18}O$ isotopic composition of nitrate enables to resolve the impact of the different biogeochemical processes acting on the nitrate reservoir, such as uptake, remineralization and denitrification. We measured the nitrate isotopic composition using the bacterial denitrifier method (*Sigman et al., 2001)* to document the spatial and seasonal evolution of the nitrate isotopic composition along the river for winter, spring, summer and autumn 2014. The major biogeochemical processes involved are discussed.