



North Sea riverine nutrient loads: a 1980-2002 trend analysis

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The OSPAR (Oslo-Paris) commission requires the regular application of 3D numerical hydrobiogeochemical models in order to assess the eutrophication status of the North Sea. For this exercise, last performed in 2007, a long-term riverine database of daily flow and nutrient values was gathered from the participating countries (including the UK, France, the Netherlands, Germany and Norway), covering the major rivers discharging into the North Sea and Channel. This database allows for a comparison of the effectiveness of the nutrient reduction policies from individual countries, and shows whether the objectives set out at the 2nd International North Sea Protection Conference (London 1987, reduction of N and P loads by 50% by 1995) have been met.

Results will be presented in terms of nutrient trends, individual riverine contributions and country-based loads. Analysis of the database indicates that tertiary sewage treatment and elimination of phosphate in detergents in the Netherlands and Germany have been successful in significantly reducing ammonia and phosphate loads in these countries. Other countries show small downward trends in these nutrients as selective measures were taken. Nitrogen loads remain mostly unchanged, indicating a lack of effective measures to reduce agricultural run-off of nitrates. As a result of these different reduction policies and successes, the N:P ratio of some rivers has changed dramatically.