A conceptual catchment typology for analyzing eutrophication risks in surface waters in Denmark

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The systematic national monitoring of hydrology and nutrients in Danish surface waters dates back to the late 1980'ies. A hydrological and water quality monitoring programme in smaller Danish catchments (micro-catchments being typically < 30 km2) was launched for agricultural catchments (>60% farmed) and undisturbed natural catchments (<10% farmed) covering a range of hydrogeological conditions. These micro-catchments form the water body response datasets related to physical conditions and water chemistry. In this initial attempt to develop a catchment typology we have used a national hydrological model (DK-model) to map four different hydrological regime types for a total of ca. 3300 Danish micro-catchments. Thereafter, the water chemistry dataset from our agricultural and natural micro-catchments were classified into each of the four hydrological regime types and average nitrogen (N) and phosphorus (P) concentrations and loads for a recent five years period were calculated. Thereafter, the micro-catchment typology formed were statistically tested for differences in N and P forms and significant. This presentation will shows the outcome of this catchment typology for Denmark, the area covered by each catchment type as well as examples of the temporal dynamic in nutrient concentration and the possible impact for eutrophication of each catchment type.