

Buffer Zones in Norway

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From 2005 to 2008 approximately 5500 km of 8-10 meter wide buffer zones have been established in Norway. The presentation outlines the Norwegian experiences with buffer zones as a measure to prevent diffuse water pollution from agricultural runoff.

Agricultural runoff causes loss of soil particles, nutrients and pesticides into rivers and lakes causing water quality problems. In addition to focus on the agriculture management through best management practice (BMP) on arable fields, measures such as buffer zones and constructed wetlands in first and second order streams reduce downstream loads of nutrients through mechanisms such as sedimentation, uptake by vegetation and microbial degradation. Buffer zones reduce erosion, nutrients and pesticides from surface runoff. The retention is about >70% for particles, > 50% for total phosphorus and > 30 % for nitrogen in the Norwegian buffer zones. The farmers in Norway get financial contribution for building the buffer zones.

The paper present data from the Morsa catchment area and lake Vansjø, which is the most important "pilot-area" in Norway with respect to implementation of the WFD. The catchment, located in the South-Eastern part of Norway, is 690 km² whereof 16 % is agriculture and 80 % is forest. All water bodies in the Morsa catchment are characterised. Large areas are not at risk. However, there are water quality problems in the lake Vansjø and its tributaries. The water quality problems are mainly caused by high phosphorus inputs from the catchment area. Agriculture and in particular the diffuse nutrient losses have been identified as the major source of anthropogenic phosphorus inputs. In this catchment it is constructed 370 buffer zones, approximately 7-10 meter wide, and 18 % of the runoff from agriculture land enters buffer zones before water enters the water-recipient.

My presentation will also give examples of other benefits than improving water quality by using buffer zones.