

Agriculture and Water Quality in the Mississippi River Basin

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Nitrate and total phosphorus lost from agricultural fields in the Mississippi River basin lead to local (drinking water, freshwater algal blooms) and coastal water quality problems in the region (Gulf of Mexico hypoxia). The upper, tile-drained Midwest has the largest losses of nitrate, whereas phosphorus losses are more broadly distributed due to soil erosion along with tile transport. We need even greater agricultural productivity in the future, but want to reduce nutrient losses from fields. A wide range of conservation practices can help, including improved fertilizer management, more diverse rotations, perennials, cover crops, and edge of field techniques such as bioreactors, wetlands, and saturated lateral buffers. This talk will cover what the problems are, and where we are in solving them across the upper Midwest and the overall Mississippi River basin.