

**ASSESSMENT OF THE SUBSURFACE PATHOGEN ABATEMENT EFFECTS OF NUTRIENT  
MANAGEMENT POLICY IN ONTARIO**

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The transport mechanisms of pathogens through the subsurface environment are complex. Provincial legislation, such as Ontario's Nutrient Management Act (2002) is designed to control nutrients in agricultural settings and it is assumed that the Act also attempts to control pathogens from reaching source waters. The study examined the progressive restrictions on agricultural practices that are sources of pathogens in water. Furthermore, current research in microbial subsurface transport and modeling was examined to determine if existing legislation is sufficient in controlling pathogens. Analysis showed that research gaps in microbial subsurface transport studies restrict subsurface research and transport models from effectively predicting the fate of pathogens. Furthermore, gaps in research restrict nutrient management legislation from protecting source waters from pathogens. Research showed that a 'critical control point' strategy that acts to decrease pathogen loading to agricultural surfaces is key in reducing the risks that microorganisms pose to ground water sources.