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**SPATIAL AND TEMPORAL
DISTRIBUTION OF FECAL INDICATOR
BACTERIA WITHIN THE OLDMAN RIVER
BASIN OF SOUTHERN ALBERTA,
CANADA**

ABSTRACT

Fecal coliform (FC) and *Escherichia coli* (EC) concentrations in the Oldman River and its tributaries, and in irrigation canals in southern Alberta, Canada, were monitored during 1998, 1999 and 2000. High FC and EC counts were found in drainages from agricultural lands in all years and in the Oldman River downstream of the City of Lethbridge wastewater treatment plant (WTP) during 1998. A significant decrease in the FC and EC concentrations downstream from the Lethbridge WTP was observed in 1999, after an upgrade to the WTP, which included a UV disinfection system. Spikes in FC and EC concentrations were observed in surface waters following heavy rainfall events. It is possible that a decrease in precipitation was responsible for decreases in the FC and EC concentrations observed in the Oldman River over the three years of the study. The increase in FC and EC counts in the tributaries and irrigation canals during this same period presumably reflects greater waste inputs from agricultural lands.

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