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Pollution  
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Agency

Citizen involvement, education and outreach, and pollution prevention are key components of all TMDL implementation plans.

The High Island Creek and Rush River watersheds have approximately 1400 straight pipe septic systems.

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# High Island Creek and Rush River Fecal Coliform TMDL

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**T**he 2008 303 (d) impaired waters list developed by the Minnesota Pollution Control Agency includes reaches of High Island Creek and Rush River located in south central Minnesota. Water quality monitoring indicates these stream reaches fail to meet the standard for human contact due to excessive amounts of fecal coliform bacteria. The Minnesota State University, Mankato Water Resources Center has prepared a Total Maximum Daily Load (TMDL) report documenting the impairments.

A TMDL study calculates the maximum amount of a pollutant a water body can receive (known as the “loading capacity”) without violating water quality standards. The TMDL process identifies all sources of pollutants causing impairments and allocates reductions necessary to meet the water quality standard.

## Description of Water Bodies

The High Island and Rush River watersheds are located in the Lower Minnesota watershed, in south central Minnesota (Figure 1). The watersheds cover 410,000 acres located across portions of McLeod, Nicollet, Renville and Sibley counties. High Island Creek and Rush River outlet into the Minnesota River near Henderson, Minnesota. Land use in the High Island Creek and Rush River watersheds is dominated by agriculture at 84% and 90% respectively.

## Water Quality Impairments

Fecal coliform bacteria is found in the feces of all warm-blooded animals. The bacteria itself is usually not harmful, but high levels might indicate the presence of



other harmful bacteria, viruses and/or parasites. Examples include the pathogenic strain of *E. coli* that is often linked to foodborne illnesses, as well as giardia and cryptosporidium. Recreational contact, especially swimming, is not recommended when high concentrations of fecal bacteria are present. The water quality standard for fecal coliform bacteria is a monthly geometric mean of 200 colony-forming units (CFU)/100 ml and/or 2000 CFU/100 ml not to be exceeded by 10% of samples taken within a calendar month. There are five impaired reaches in the High Island Creek watershed and two impaired reaches in the Rush River watershed (Table 1).

## Pollution Sources

Fecal coliform pollution in the High Island Creek and Rush River watersheds results from a combination of several sources including manure application, straight pipe septic systems, wildlife, re-suspension of contaminated sediments and feedlot runoff. Of these sources, runoff of land applied manure during high flows, straight pipe septic systems during low flows and re-suspension of sediments during high and low flows appear to be the primary contributors of fecal coliform bacteria.

## Project Partners

This TMDL project is being conducted by the Water Resources Center (WRC) at Minnesota State University, Mankato. Contributors include Sibley, Renville, McLeod and Nicollet counties, the Minnesota Pollution Control Agency, the United States Geological Survey and the Minnesota Department of Natural Resources.

## Next Steps

A TMDL implementation plan will be developed to address the fecal coliform bacteria impairments within the High Island Creek and Rush River watersheds. The plan will provide a strategy of management and conservation practices necessary for the watersheds to reach water quality standards. Citizen involvement, education and outreach, and pollution prevention are key components of all TMDL implementation plans.

## More Information

For more information on the High Island Creek and Rush River fecal coliform bacteria TMDL project, contact:

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Draft TMDL reports are posted on the MPCA Website at: [www.pca.state.mn.us/water/tmdl/index.html#drafttmdl](http://www.pca.state.mn.us/water/tmdl/index.html#drafttmdl)

For more information on the TMDL Process, visit [www.pca.state.mn.us/water/tmdl/](http://www.pca.state.mn.us/water/tmdl/) and [www.epa.gov/owow/tmdl/](http://www.epa.gov/owow/tmdl/)

Stream Name	Description	Year Listed	MPCA River Assessment Unit ID
<b><u>High Island Creek Watershed</u></b>			
Buffalo Creek	Unnamed Cr to High Island Cr	2006	07020012-578
Buffalo Creek / County Ditch 59	High Island Ditch 5 to Unnamed Stream	2006	07020012-598
High Island Creek	JD 15 to Unnamed Cr	2002	07020012-535
High Island Creek	Unnamed Cr to Minnesota R	2006	07020012-589
High Island Creek Ditch 2	Unnamed Cr to High Island Cr	2008	07020012-588
<b><u>Rush River Watershed</u></b>			
Rush River, South Branch	Unnamed Ditch to Rush R	2008	07020012-553
Rush River	S Br Rush R to Minnesota R	2002	07020012-521

Table 1. Fecal coliform bacteria impaired reaches.

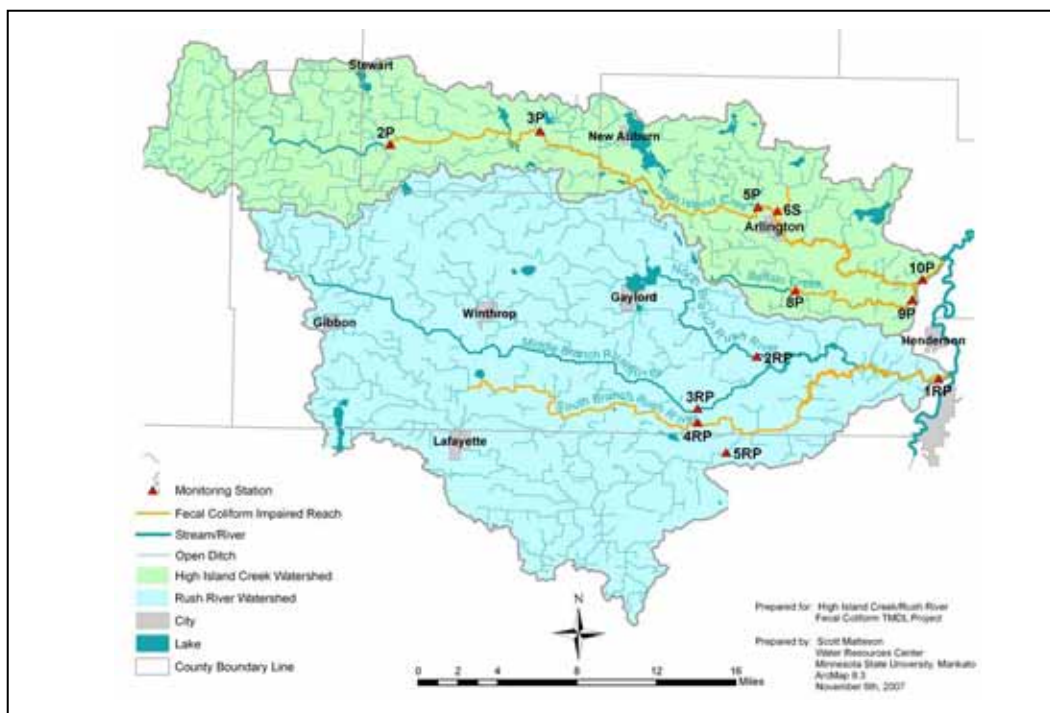


Figure 1. High Island and Rush River watersheds.