

The Fill and Spill Hydrology of the Souris River Basin

FACT SHEET

During the last glacial period in North America, much of Canada and parts of the US were covered by one to two kilometers (.6 - 1.2 miles) of ice. As the ice sheets retreated, they created a geographical region in certain areas called the Prairie Pothole Region.

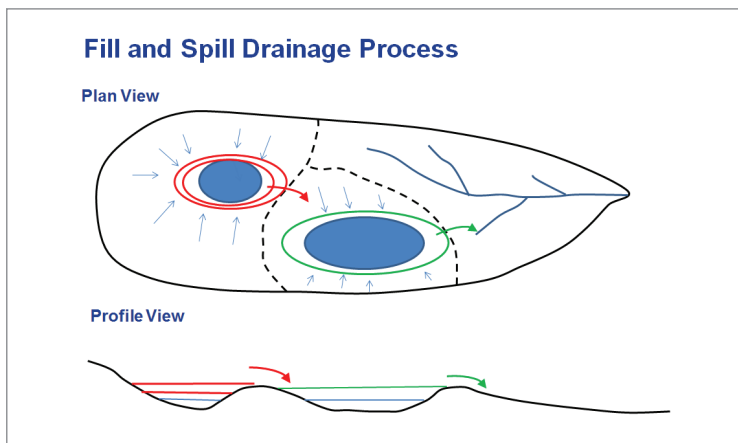
Since about two-thirds of the Souris River Basin consists of prairie potholes, it has these unique characteristics:

- » Thick deposits of glacial till which have low permeability. This type of soil causes rain to seep in slowly, meaning that rain that falls in short periods is more likely to remain on the ground surface.
- » Flat plains in areas that were once glacial lakes, causing flooding from the river rising even a small amount.
- » Deep glacial melt water spillways that formed river valleys.
- » Receding glacial landforms such as kettles (small lakes) and kames (rolling hills), which cause a “fill and spill” effect.





Kettles in the Souris River basin watershed. Photo credit: US Fish and Wildlife Service Map



Under normal conditions, much of the watershed does not contribute to the Souris River itself. If large amounts of rainfall occur, the small kettle lakes can fill and expand outwards until they begin to spill into one another and eventually into the Souris River, expanding the area contributing to the Souris River. When the contributing areas become interconnected, this leads to more rainfall remaining on the ground surface than can flow into the Souris River.

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