HYDROLOGY

Dramatic increase in a managed drainage system

Wetlands historically dotted the Minnesota River Basin, with wetland complexes once common on the prairie-dominated landscape. Early explorer's accounts described the prairie and wetlands extending as far as the eye could see. Settlers moved in and drained the wetlands to farm the rich, productive farmland. Today, almost 90 percent of prairie wetlands have been lost.

Changes in Hydrology

The movement of water in the Minnesota River Basin before Euro-American settlement would have been different from today. The landscape consisted of a vast prairie pockmarked with wetlands. The prairie sod allowed rapid infiltration of precipitation. The wetlands were connected to subsurface hydrology. The flows of the rivers were likely sustained by ground water inputs for most of the year. As prairies were plowed precipitation followed surface runoff paths into lakes and wetlands which were ditched and drained in many areas to remove water rapidly from the landscape thus enabling large-scale farming (MPCA, 1997).

BNC Water Quality Board

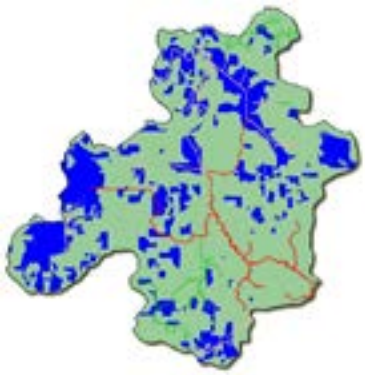
Kevin Kuehner

HYDROLOGY

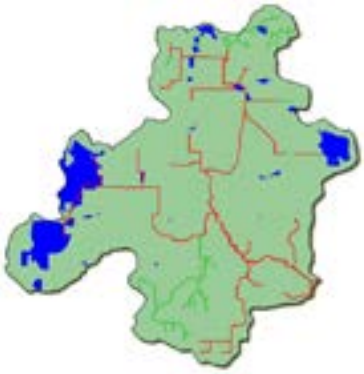
Seven Mile Creek

Seven Mile Creek is a minor watershed in the Lower Minnesota River Basin (near St. Peter, Minnesota). These maps are based on a study that examined historic aerial photos over time. The study found that the Seven Mile Creek watershed lost about 88 percent of wetlands from 1854 to 2003 (shown in blue). This correlates with other scientific research that estimate 90 percent of the wetlands have been lost in this part of Minnesota. The 2003 map highlights the engineered system. The purple lines illustrate private drainage tile and the red indicate county drainage ditches and natural channels. Researchers estimate that more than 5.3 million feet of tile have been laid in the Seven Mile Creek Watershed. In this relatively small watershed (36.8 square miles) the study calculated approximately 640 miles of artificial drainage systems.

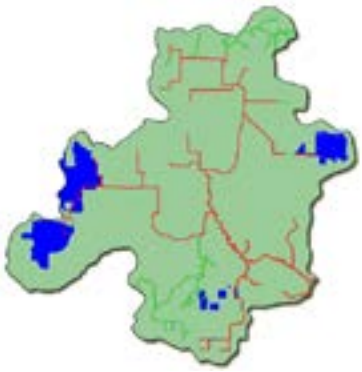
1854



1938



1968



2003

"Ask an Expert about the Minnesota River" project profiles scientists and citizens answering questions about the health of the Minnesota River. More answers to questions about the Minnesota River can be found at: mrbdc.mnsu.edu/learn
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