WETLANDS OVERVIEW

ASK an EXPERT
ABOUT THE MINNESOTA RIVER


BNC Water Quality Board
Swan Lake


BNC Water Quality Board
In the beginning tiling was mostly done by hand using a spade to lay concrete or clay tile.

HISTORY - Pre 1850s

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.


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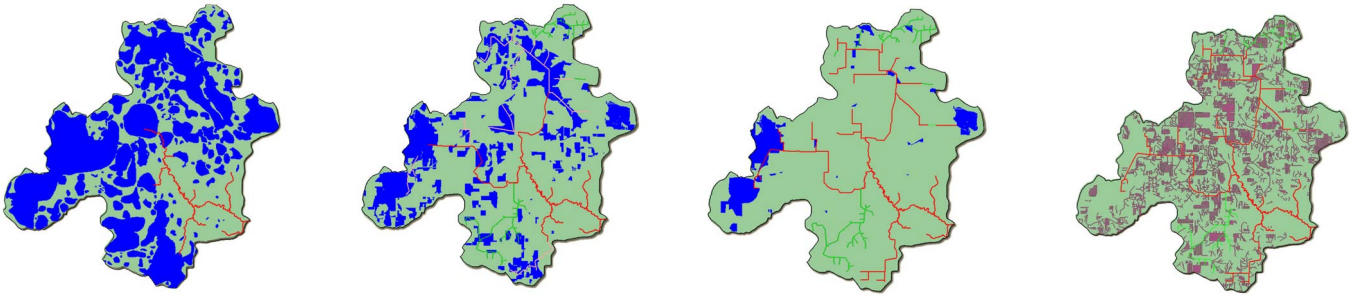
TODAY - 90 Percent loss

Today, almost 90 percent of prairie wetlands have been lost.
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).


Kevin Kuehner
Modern corrugated plastic drainage tile

Wetland Loss Case Study: Seven Mile Creek Watershed



1854 1938 1968 2003

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.

WETLANDS

QUESTIONS & ANSWERS

ASK an EXPERT ABOUT THE MINNESOTA RIVER

Wetlands once played a dominating role in the hydrology of the Minnesota River Basin, part of a massive prairie-wetland complex. Less than 3% of wetlands now remain after the settlement of Euro-Americans and the conversion of the landscape into cropland and cities by large scale drainage operations. Water storage, improving water quality and providing critical wildlife habitat are just some of the benefits of wetlands. A diversity of plants and wildlife including birds, insects and mammals thrive in wetlands of all types. Today, numerous conservation programs on the state and federal levels restore and protect these important ecosystems. Conservation experts like Tom Kalahar of Renville SWCD believe wetland restorations are a must in these intensively agricultural regions of southern Minnesota.

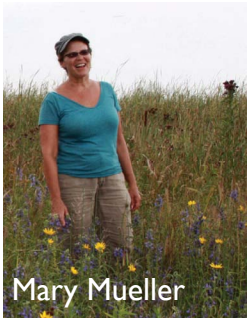

Brad Cook

What is a Wetland?

"It is an area of depression land that holds water and is just alive with plants and animals. It's the kidneys of our landscape when it comes to water quality. They are home to a lot of animals, insects, birds both game and nongame, furbears, etc." —Mary Mueller

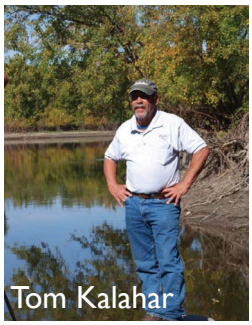
What is the current status of wetlands in the Minnesota River Basin?

"In Minnesota we have lost almost 90 percent of the wetlands. We are having a reduction in water quality and increased flooding problems because we destroyed or ditched our wetlands." —Brad Cook


Mary Mueller

Why are wetlands important?

"We are really learning a lot about that as we kind of deal with the impacts of having drained such a large percentage of them. There are a lot of different reasons and a lot of it is what people's perspective are. If you are interested in water quality, wetlands are very important because they provide that kidney for our landscape. There is a lot of filtering going on. They also store water that percolates very slowly and restore our aquifers, which is our drinking water in southern Minnesota. They can be bastions of diversity and the diversity thing is something we are really just starting to discover after changing our landscape so much and we have lost the concentration of so many species." —Mary Mueller


Tom Kalahar

What role do wetlands play in water quality improvement?

"If we are going fix the Minnesota River wetland restorations are going to have to be right at the top of the list. The other is retiring marginal agricultural land like steep slopes with gullies. If not perpetual, very long term and planting them back into native grasses with deep root systems that holds the soil in place. The other is to remove animal waste (feedlots) and human septic systems out of the drainage systems." —Tom Kalahar

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Thanks to Brad Cook, Mary Mueller, and Tom Kalahar.
"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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