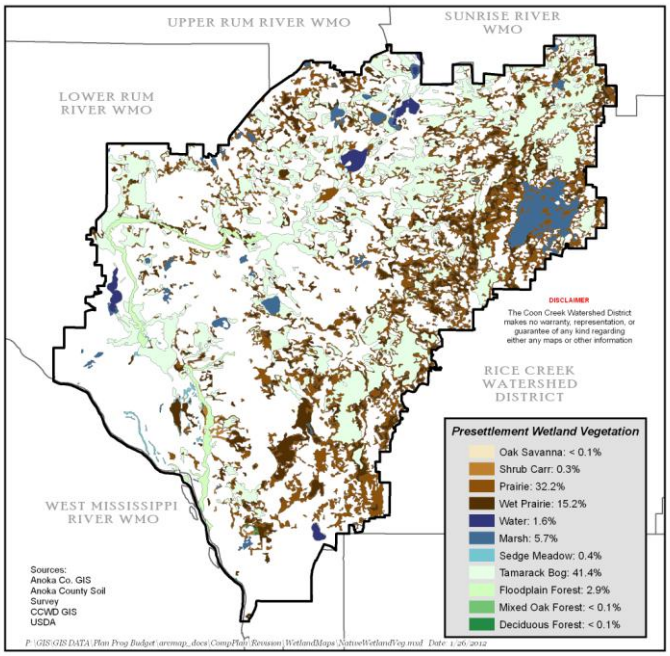
Wetlands

Current Plan

The Coon Creek Watershed contains approximately 13,300 acres of wetland (NWI, 1979). An additional 6,500 acres of wetland may be farmed. Wetlands comprise approximately 22% of the watershed.

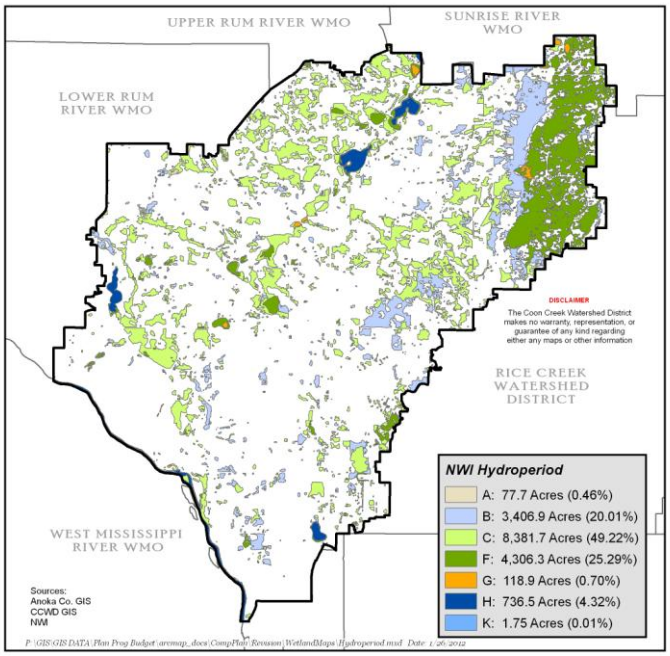
Historic estimates, based on hydric soil mapping, are that approximately 47% of the watershed was wetland prior to settlement (USDA, 1977).

Presettlement Wetland map of Coon Creek Watershed



Wetland Hydrology

According to the NWI, approximately 70% of the wetlands within the District are temporarily flooded, saturated or seasonally flooded (NWI). This finding is consistent with the District's location in the Anoka Sand Plain and reinforces that under normal circumstances, the wetland hydrology in the watershed is groundwater related.

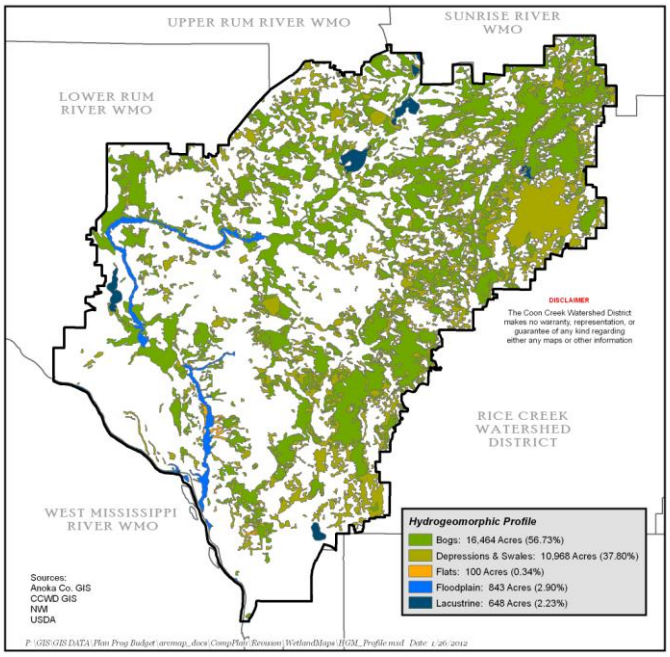


Hydrogeomorphic Classes and Profile

The hydrogeomorphology of the watershed is generally characterized by shallow surficial groundwater on a gently undulating and generally flat or level landscape.

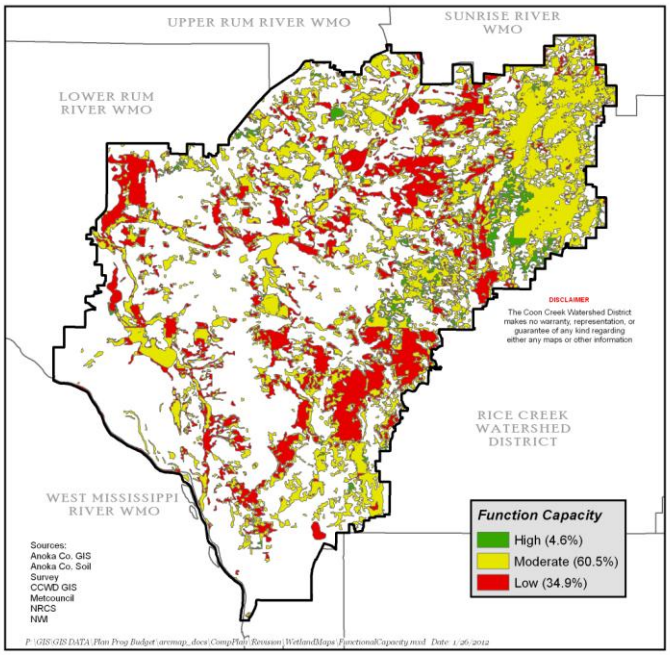
Where the landscape is pitted, it is generally low in relief, and the regional surficial water table breeches the land surface. These conditions have lead to five basic wetland types based on geomorphic setting, water source and hydrodynamics.

1. Bogs and Extensive Peatlands
2. Depressions and Swales
3. Flats
4. Floodplains
5. Lacustrine



2010 Functional Capacity Assessment

The 2000-2010 Comprehensive Plan included a discussion and model of wetland functions. In 2010 the District performed a functional capacity assessment on all wetlands within the watershed using the HGM approach.

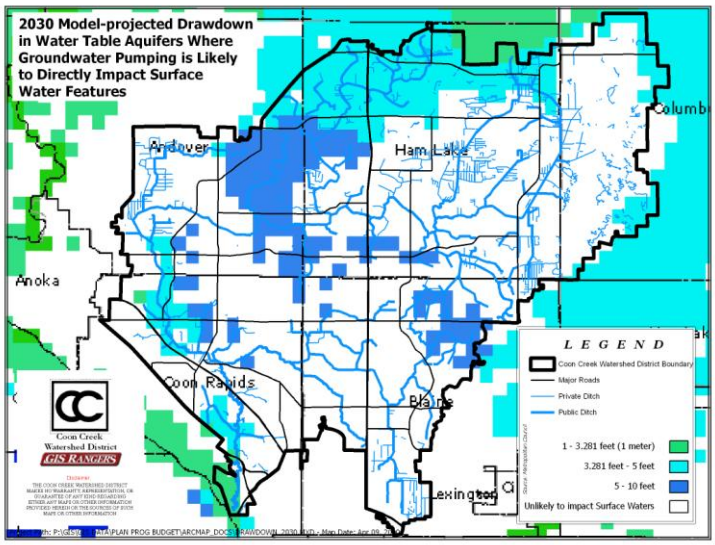


Trends in Wetlands

Loss of Wetland Hydrology

During the past 10 years the District has observed a general drying out of the landscape. This drying out appears to be directly related to the decline in the surficial groundwater table. Wetlands most affected are those with saturated or temporarily flooded hydroperiods.

A 2009 Metropolitan Council Study showed surface water features likely to be affected by draw downs in the surficial aquifer. A map of the affected areas is shown below



Oxidation of Hydric Soils

During the past 10 years the District has also observed a general breakdown and change in hydric soils, particularly organic soils. Signs of decomposition and hydrophobic conditions are becoming increasingly evident.

Invasive Species

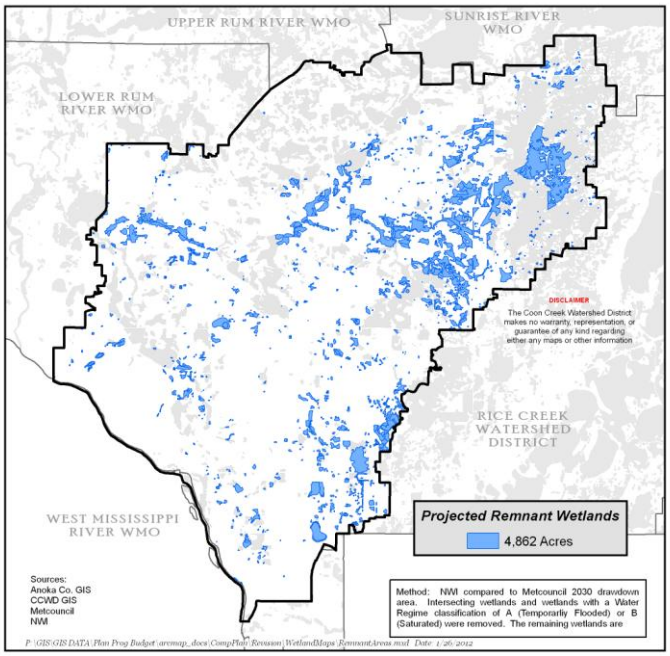
Wetlands continue to be invaded by Reed Canary grass (*Phalaris arundinacea*) and Common Buckthorn (*Rhamnus cathartica*). Both species appear to have received a boost from the decline in surficial groundwater levels and the generally droughty conditions during most of the decade.

Implications of Changes in Wetlands

Loss of Wetlands

If the Metropolitan Council model is correct we estimate a loss of approximately 52% of the wetlands identified on the National Wetland Inventory.

Projected Coon Creek WD wetlands if Met Council Model is correct



Permanent Loss of Organic Soils

The general drying out of the watershed through declines in surficial groundwater levels and changes in precipitation are contributing to a permanent loss of organic soils through oxidation and decomposition. An aspect of this is the soils becoming hydrophobic and losing their ability to absorb water and thereby incrementally decreasing the amount of soil water storage occurring in the watershed and therefore increasing runoff.

Land Subsidence

As organic soils decompose, land subsidence can and will occur. Depending on the size, location and degree of decomposition, subsidence can range from a curiosity to a major threat to the structural integrity of infrastructure such as pipes and roadways as well as buildings.

More Involved Delineations

With changes in hydrology and soils as well as invasions or changes in vegetation, jurisdictional delineations will become more involved and potentially more difficult.

Management Needs

Encourage Groundwater Recharge

The Retention and detention of water o water and the encouragement of infiltration equal to or greater than predevelopment rates is needed either assist in recovering the surficial groundwater or slowing its decline

Discourage Drainage where its not Needed

There will remain areas within the watershed that require drainage for their continued use. However, land that is not drainage dependent does not require the same efficiency

of drainage and therefore do not need to be maintained to the same degree as drainage dependent and sensitive lands.