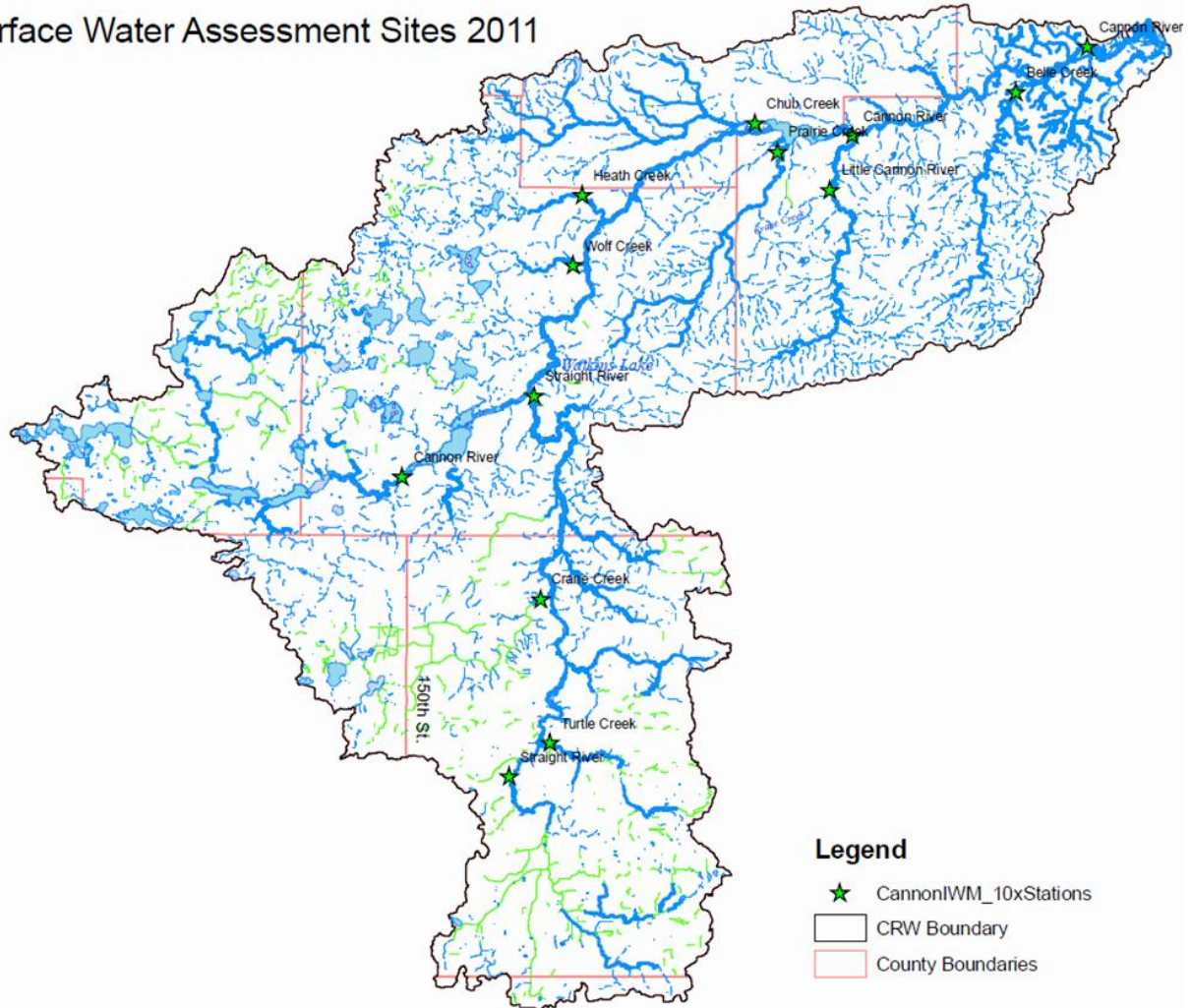




## Surface Water Assessment Sites 2011



### 2011 Surface Water Assessment Grant

The purpose of this water quality study was to assess Cannon River Watershed's surface waters for impairments. Currently, many areas in the watershed are listed on the Minnesota Pollution Control Agency (MPCA) 303(d) impairment list for turbidity, nutrients, and mercury. This project focuses on assessing lakes and streams that have not been evaluated to determine if they are meeting their designated uses. Some of these lakes and streams have water quality data for certain pollutants, but not enough to complete an impairment assessment. The river and stream locations sampled this year were located in Dakota, Goodhue, Le Sueur, Rice, and Steele counties. This project has been funded through a MPCA grant and will continue thru 2013. The water quality data collected from this project will enhance existing data sets for the water bodies noted above and determine if they need to be added to the impaired waters list.

**State of Minnesota lake water quality standards**

Eco-region	Total phosphorus ( µg/L)	Chlorophyll-a (µg/L)	Secchi Depth (m)
Northern Central Hardwood Forest (Lakes)	40	14	Not < 1.4
Northern Central Hardwood Forest (Shallow lake)	60	20	Not < 1.0
Western Corn Belt Plains (Shallow lake)	90	30	Not < 0.7

**Water quality results**

**Lakes Data:**

Water quality parameters for determining lake impairment are based on eco-region location (see table above). 30 lake water quality samples were collected during the 2010 & 2011 monitoring seasons, covering 3 lakes (Rice, Watkins and Goose). Water quality was assessed and impairment status is currently being review by MPCA personnel. The following are the results of the water samples collected at the above lakes.



- **Average total phosphorus concentration for Rice, Watkins and Goose lakes were 363, 158 and 165 mg/L, respectively.**
- **Average Chlorophyll-A concentrations for Rice, Watkins and Goose lakes were 72, 35 and 33 mg/L, respectively.**
- **Average secchi disc depth (m) for Rice, Watkins and Goose lakes were 1.1, 0.87 and 0.76, respectively.**

The above results indicated that a phosphorus impairment exists for the three sampled lakes. There doesn't seem to be a chlorophyll-A or secchi depth impairment for these three lakes yet, but it should be reassessed in the future to ensure that water quality degradation is not occurring.

**Stream data:**

Due to the fact that there are no water quality standards for streams in Minnesota yet, but are in the process of being developed. These are of the stream locations with the highest concentrations of some of the chemical parameters we had tested for.

- **Little Cannon River, Total suspended solids= 350 mg/L**
- **Prairie Creek, Nitrates = 6.4 mg/L**
- **Heath Creek, Total phosphorus = 0.32 mg/L**
- **Prairie Creek, E. Coli bacteria = 2,088 # per 100 mL**

It is important to note that these samples were not collected during storm event s, but were collected on a regular schedule due to utilization of citizen stream volunteers. Concentrations of these parameters could be significantly higher due to storm events.

