



# Sauk River Watershed

## Clean Water Accountability Progress Report

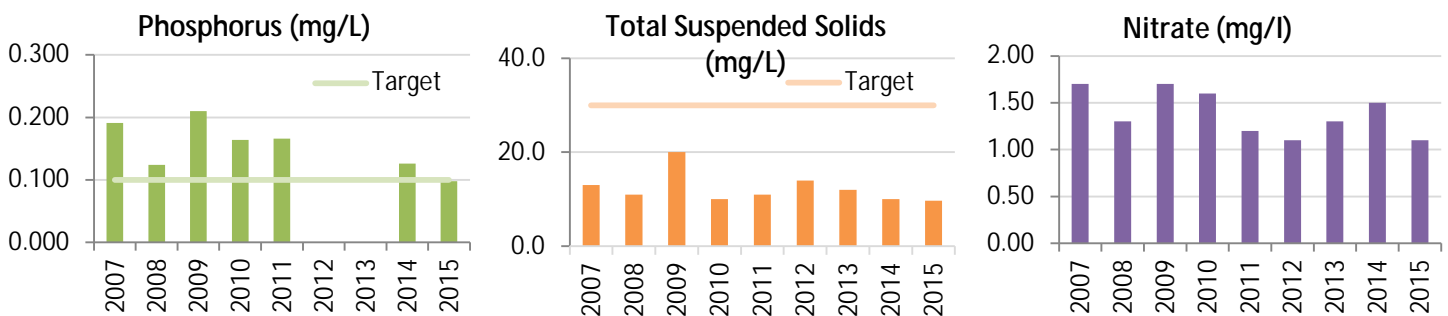
The Sauk River Watershed is located in the Upper Mississippi River Basin of Minnesota covering an area of 667,513 acres. The watershed is located in the north central forest ecoregion, which is the transitional zone between the state's northern forestlands and southern agricultural lands. It contains 371 established lake basins and 586 perennial and intermittent streams. The watershed is affected by agriculture and urban development with phosphorus and sediment as the primary stressors.



Of the 371 lakes, 58 were monitored by the Sauk River Watershed District as part of Clean Water Partnership and Surface Water Assessment Grants. Of those lakes, 31 were found to be impaired by excessive nutrients. Of the 568 stream reaches, 42 were assessed for support of aquatic recreation and/or aquatic life uses. Fourteen stream reaches were impaired for aquatic recreation use, 20 were assessed as non-supportive of aquatic life, and 8 as supportive to aquatic life. Practices used to restore water quality in the Sauk River Watershed include stormwater retention and diversion, feedlot improvements, shoreland restoration, septic system upgrades, erosion control projects, and vegetative buffers.

### Water quality measurements

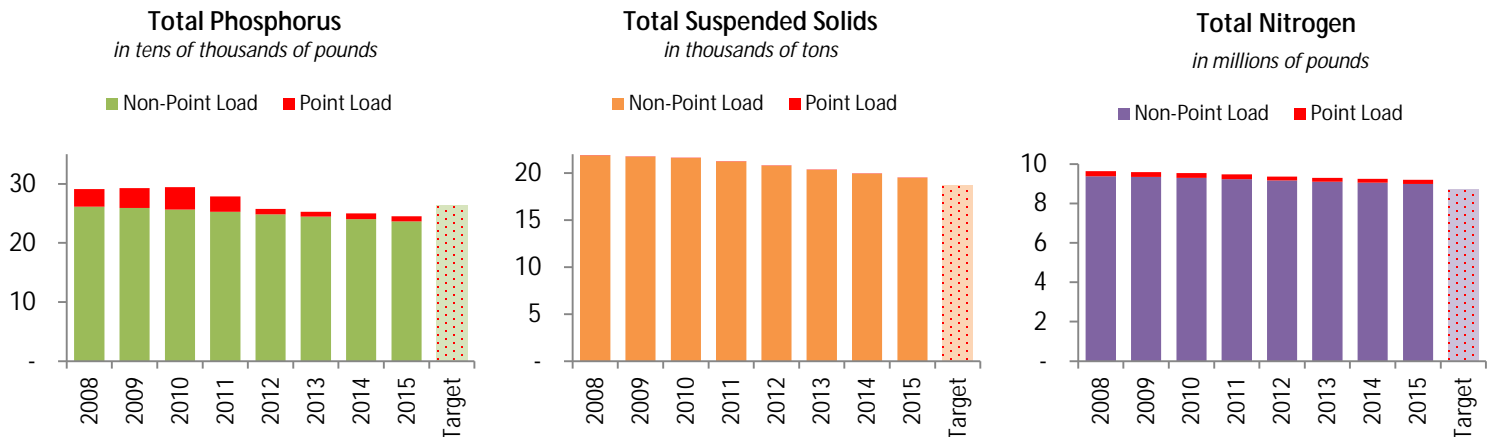
The graphs below show the annual flow weighted mean concentration (FWMC) of total phosphorus (TP), total suspended solids (TSS), and nitrate, measured at the Sauk River near Sauk Rapids at the outlet of the watershed. FWMCs help to normalize pollutant loads across years with varying precipitation. The target identified for phosphorus and TSS is the water quality standard. There is no surface water quality standard for nitrate. Gaps in the graph indicate years where the amount of data is insufficient for comparative purposes.



Compared to other watersheds in the state, the Sauk River Watershed exhibits lower than average water runoff, even when factoring in precipitation variability. For water quality, phosphorus levels near the mouth of the Sauk River were lower in 2014 and 2015 as compared to earlier years. Whether these lower levels will continue is difficult to say at this time. No trend is apparent for TSS or nitrate, although it is worth noting that TSS is measuring below the standard.

## Progress toward load reduction targets, 2008-2015

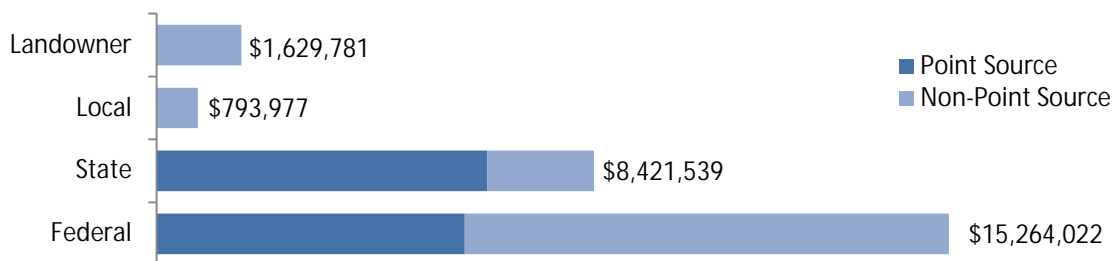
The Sauk River Watershed Restoration and Protection Strategy Report calls for a minimum 10% reduction in nitrogen, a 10% reduction in TP, and a 15% reduction in sediment in order to achieve water quality goals. These charts display the annual load reductions for nitrogen, TP and TSS estimated as a result of best management practices (BMP) reported to the U.S. Natural Resources Conservation Service and to the Minnesota Board of Soil and Water Resources, for the period of 2008-2015. These charts do not take into account factors such as land use changes, climate change, or privately funded BMPs. The modeled load for 2008 serves as the baseline load, with the estimated reductions shown relative to that baseline.



## Top non-point source BMP activities in the Sauk River Watershed, 2008 – 2015

BMP Type	Projects	Acres	N reduced (lbs)	P reduced (lbs)	TSS reduced (tons)
Nutrient Management	3,125	107,457	295,962	4,254	0
Residue & Tillage Management	259	10,161	18,741	2,610	295
Ag Waste Management	132	-	3,150	1,574	0
Water & Sediment Control Basins	129	1,698	6,674	513	77
Permanent Vegetative Cover	127	455	5,516	116	9

## Water quality improvement spending in the Sauk River Watershed, 2008 – 2015



The figures in this report are based on data from several agencies. For details, see: [www.pca.state.mn.us/water/clean-water-fund](http://www.pca.state.mn.us/water/clean-water-fund).