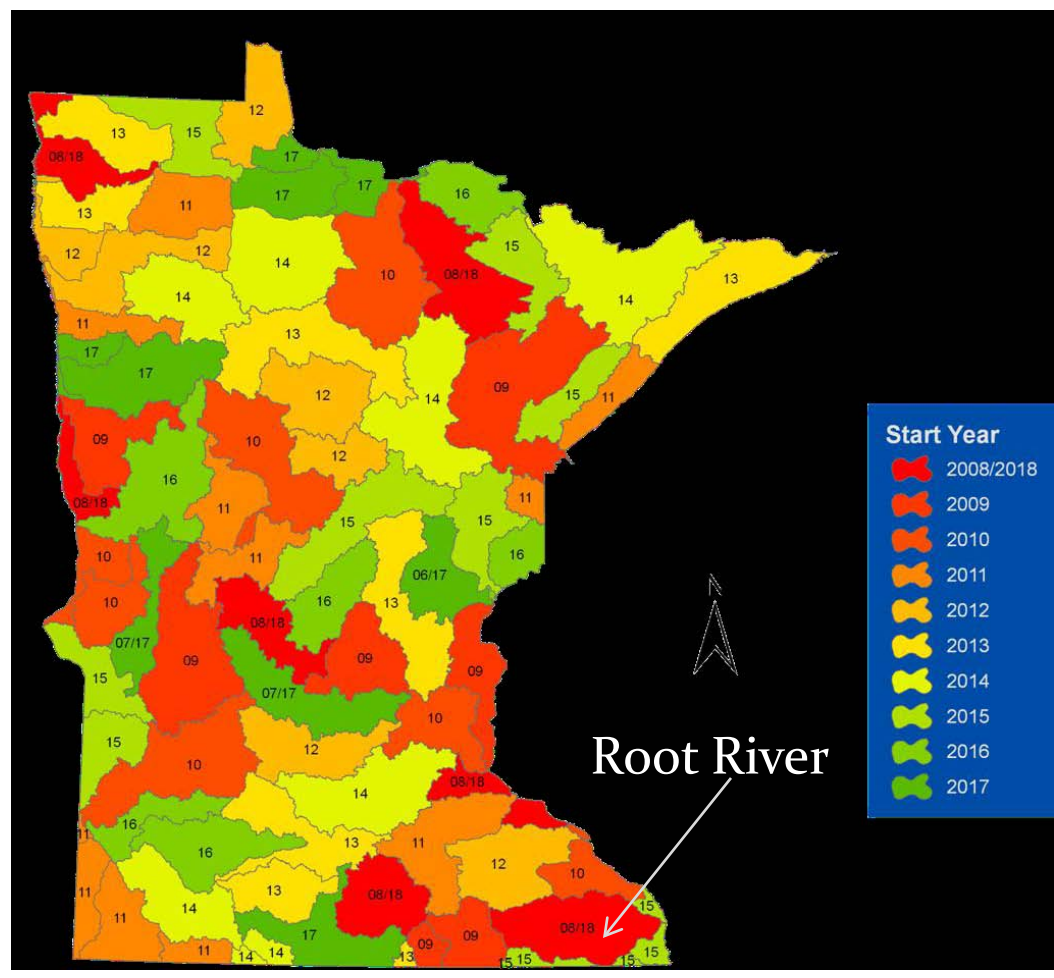


# STUDYING THE ROOT RIVER: A WATERSHED APPROACH

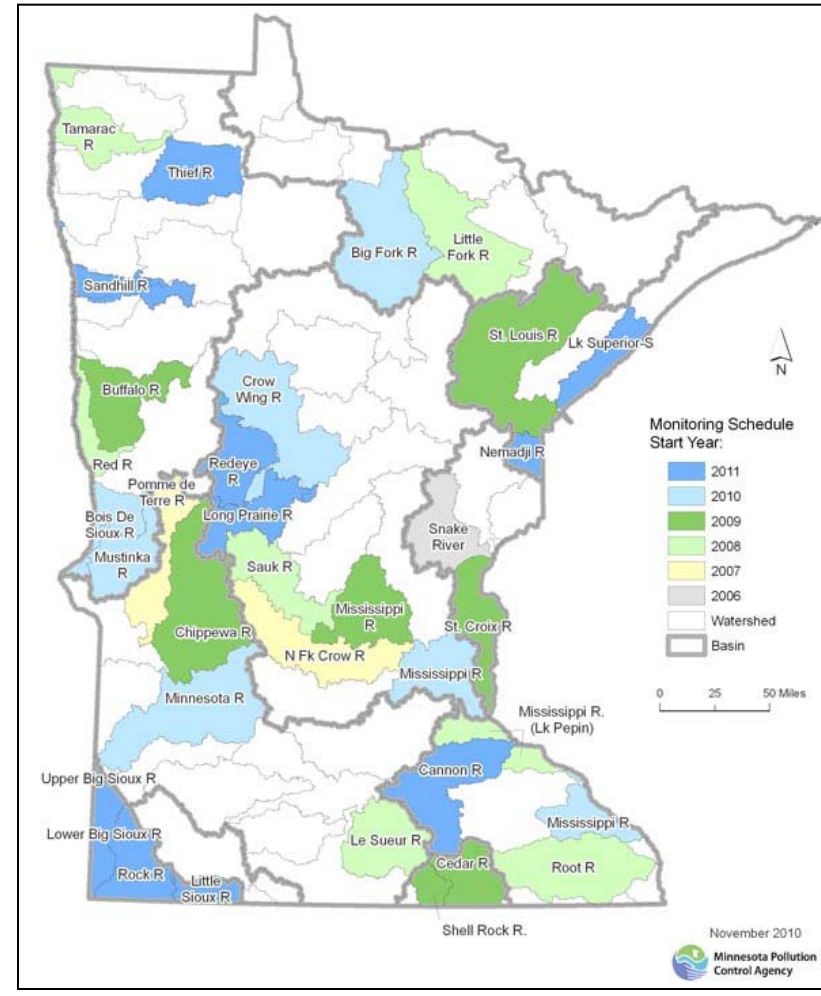
Minnesota Pollution  
Control Agency



## Major Watersheds in Minnesota

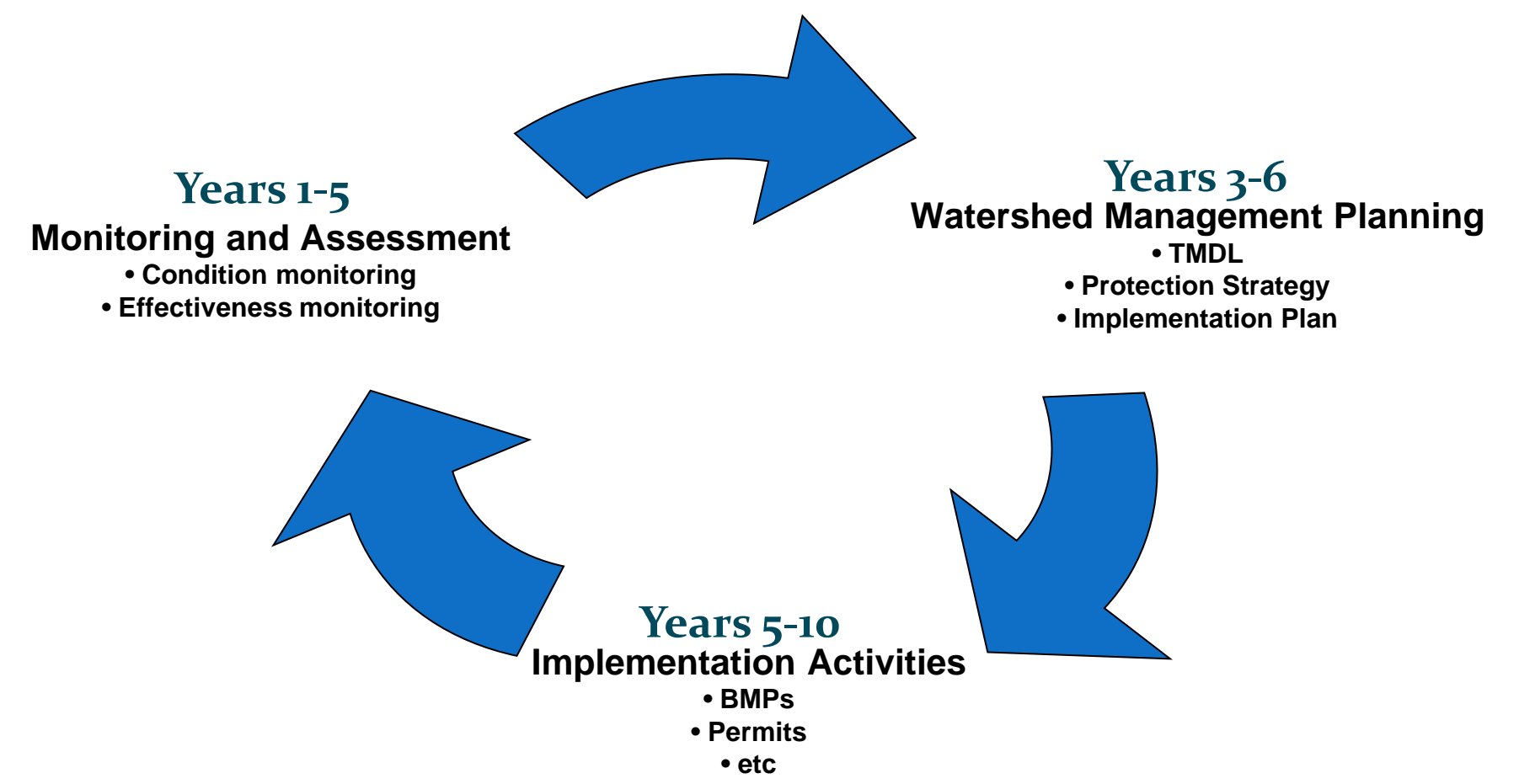


Schedule for next 10 yrs



Watersheds already underway

Rotating through major watersheds on a  
10-year cycle:  
Continuing cycle of activities



## Current Work Phase: Monitoring and Assessment

### Phase 1: Biological Monitoring (2008-2010)

This phase of the approach focuses on fish and aquatic insect surveys at numerous points (~ 120) throughout the watershed. Also, water chemistry samples are taken. Together, the data are assessed to determine if the streams are meeting their intended use (i.e. aquatic life, aquatic recreation, aquatic consumption).



MPCA Staff in the stream collecting fish data. Fish are brought to the surface with an electrofishing technique (Pic #1 and #4), then netted, recorded (length, weight, species) (Pic #2) and released. Aquatic insects are also collected by net (Pic #3).

### Phase 2: Stressor Identification (2010-2011)

This phase of the approach attempts to identify stressors to the biological community. Hydrology, biology, geomorphology, chemistry, and connectivity are all considered. Each watershed needs a tailored approach to best understand what is affecting the biota within it. Focus was placed on Willow Creek, Money Creek, and the North Branch Root Headwaters to obtain more detail and complete this phase.



Photos taken in the field during data collection. Water chemistry probes are used to monitor temperature, pH, and conductivity (Pic #1). Stream segments are measured (Pic #3) and features are noted along the way, such as eroding banks (Pic#4).

## Next Phase:

An Assessment of the Root River Watershed will be underway soon. This will tell us where we need to do any further investigation.

A Stressor Identification Report will then be completed to show what stressors are causing the impairments.

Finally, a Major Watershed Report will be developed that describes the state of the surface water in the watershed and recommendations for implementation plans and priorities.

In 2018, another round of sampling will begin to reassess the Root River and see if implementation is making improvements and where there are additional areas in need of improvement.