

25 by 25 Water Quality Reference Worksheet

Speak up for water! Water advocates have compiled background information on some of Minnesota's most pressing water quality problems, along with suggestions for solutions. Please download and utilize this worksheet, along with available [water impairment maps](#) of your community, both in preparation for the 25 by 25 meetings and at the meetings themselves. It is important that we work together to ensure the state's decision makers hear the most factual and scientific information.

Links to online sources within this worksheet are formatted in [this style](#).



Provided by the Minnesota Center for Environmental Advocacy

Threats to Drinking Water

What are the problems to be solved?	What causes these problems?	What can we do about it?
<p>Lead</p> <p>Aging drinking water infrastructure</p>	<p>Older homes and buildings with lead pipes Over \$7.4 billion is needed over the next 20 years to replace and repair aging drinking water infrastructure in Minnesota</p>	<p>Test for lead Public utilities and schools should regularly test for high lead levels in drinking water, and ensure protective measures are taken</p> <p>Long-term plans for capital improvements Municipalities should start identifying new funding sources via rates, fees, and external support to fund future capital investment projects relating to improving water infrastructure</p> <p>Replace lead plumbing Municipalities and schools should identify where lead is located in drinking water systems and develop plans for replacement</p> <p>Funding Improve public federal and state support to address the most urgent water infrastructure problems</p>
<p>Excessive nitrate contamination affects human health, especially in children</p>		<p><i>Refer to further details featured in the next section regarding 'Threats to Water Quality in Lakes, Rivers & Streams'</i></p>

Threats to Water Quality in Lakes, Rivers & Streams

What are the problems to be solved?	What causes these problems?	What can we do about it?
<p>High salt level concentrations in groundwater and lakes harm fish, plant life, and contaminate wells. Once salt enters area streams, rivers, and lakes, it cannot be removed.</p>	<p>Road salt from roads, sidewalks, and parking lots, carried by melting snow and ice into nearby lakes</p> <p>Septic systems and wastewater treatment plants contribute to salt discharges because of home water softeners in some communities</p>	<p>Limit use of salt and replace with grit, especially during extremely cold weather</p> <p>Have sidewalk and street maintenance personnel complete the MPCA Smart Salting Training Program</p> <p>Increase funding for research and training to decrease salt use</p> <p>Public drinking water providers should install centralized water softening systems to eliminate the need for individual home water softeners</p> <p>Make liability protection available for certified road/sidewalk salt applicators to incentivize proper salt use while maintaining safety</p>
<p>Aquatic invasive species interfere with recreation, damage infrastructure, harm aquatic habitat, drive out native species, and decrease water quality</p>	<p>Infestations of non-native species, such as zebra mussels, Eurasian water-milfoil, and invasive carp</p>	<p>Increase watercraft monitoring and decontamination efforts Clean all visible aquatic plants, drain water-related equipment, dispose of unwanted bait</p> <p>Treat billions of gallons of ballast water that is discharged by Great Lakes cargo ships into Minnesota waters each year</p> <p>Increase funding for research to prevent the introduction and spread of aquatic invasive species</p> <p>Install barriers to prevent the spread of invasive carp</p>

Threats to Water Quality in Lakes, Rivers & Streams cont.

What are the problems to be solved?	What causes these problems?	What can we do about it?
<p>Excessive nitrate contamination affects human health, especially in children, and in fish</p>	<p>Cropland contributes 72% of nitrate pollution entering Minnesota's surface water Most nitrogen leaves cropland and enters surface waters through shallow groundwater and tile drainage. The biggest causes of this problem are the overuse of nitrogen fertilizer, and cropland that is bare most of the year.</p> <p>Municipal wastewater and septic tanks contribute 11% of nitrate pollution entering Minnesota's surface water</p> <p><i>Full report on nitrogen in surface water available here</i></p>	<p>Plant cover crops and perennial vegetation to reduce runoff and erosion</p> <p>Limit the over-application of farm fertilizer, including manure Follow Univ. of MN best practices</p> <p>Control and treat urban and agricultural drainage to remove nutrient pollution</p> <p>Reduce phosphorus and nitrogen pollution Upgrade wastewater treatment plants to reduce pollution, and repair or replace faulty septic systems</p> <p>Increase temporary storage of water to mimic natural water flow patterns</p>
<p>Runaway algae growth impedes swimming and other recreational activities</p> <p>Fish kills are caused by depleted oxygen levels, which result from algae blooms</p>	<p>Excessive nutrients cause increased algae growth Nutrients (phosphorus and nitrogen) run into lakes, rivers and streams from agricultural runoff and drain tile, along with runoff from developed lakeshores, and discharge from wastewater treatment plants</p>	
<p>Lakes filling with sediment threaten fish habitats</p>	<p>Urban development Storm water washes sediment from streets</p> <p>Runoff from cropland and disturbed land contains high levels of sediment</p> <p>Erosion Mega-rain events and altered water movement, resulting from man-made activity, causes erosion of streams and bluffs</p>	

Threats to the Availability of Water

What are the problems to be solved?	What causes these problems?	What can we do about it?
<p>Overuse Many portions of Minnesota use groundwater faster than it is replenished</p>	<p>Landscape and agricultural irrigation are the highest water consumption activities in most areas Water use increases dramatically during summer months</p>	<p>Eliminate unnecessary use and increase efficiency at home, and in industry and irrigation</p> <p>Capture and reuse rainwater, storm water, gray water, and wastewater for irrigation, drinking, and processes such as washing, cooling, and toilet flushing</p> <p>Protect groundwater recharge areas</p> <p>Actively recharge groundwater</p>

Threats to Wildlife

What are the problems to be solved?	What causes these problems?	What can we do about it?
<p>Drained wetlands Southern and western Minnesota have experienced significant wetland losses</p>	<p>Industrial and commercial development</p> <p>Agriculture</p>	<p>Restore, construct, or enhance wetlands</p> <p>Remove dams or construct fish passages</p> <p>Restore natural stream channels</p>
<p>Altered streambeds degrade local habitats and increase the flow of water and pollutants impacting downstream waters and communities</p>	<p>Dams, channeling, ditching and straightening of streambeds About half of Minnesota's 83,000 miles of streams have been altered through one of these means</p>	