MINNESOTA RIVER ONGOING CONCERNS

Clean water is one of the most important signs of a healthy community and economy. There are many benefits to having plenty of inexpensive water for both drinking and industrial production. In the Minnesota River basin, there has been a lot of progress made toward cleaning up the rivers, with much more needed to be accomplished along with constant vigilance with ongoing and new pressures. Unfortunately as a society, we take this seemingly ubiquitous resource for granted, treating it like it is limitless and inexhaustible. Here in the Minnesota River basin we know what happens when we allow too much sediment, nutrients, bacteria and other pollutants into our waterways and the amount of money it costs to fix those problems. We are also faced with an almost constant onslaught of issues, ones that we have not fully grasped or understood. In order to protect the Minnesota River and continue the movement toward a healthier river for future generations, we have to continue to address and study these ongoing concerns. Listed below, in alphabetical order, are some of the concerns identified by government agencies, nonprofit organizations, citizens and others.

Arsenic – Odorless and tasteless, this chemical is both naturally and artificially produced, resulting in the contamination of groundwater. Arsenic poisoning over an extended period of time (people who consume water with arsenic levels over 100 micrograms per liter for many years) can result in many health issues including nervous system effects, diabetes, and several circulatory diseases.

Aquifers – One of the most important water sources in the State of Minnesota is underground aquifers, a major source of water for household and industrial usage. Currently little is known about how much these aquifers are being recharged (infiltration) from surface water. In addition to the concern about the amount of water found in aquifers, little research has been done about possible contamination of underground water sources.

Atrazine – This popular herbicide used for corn has some people concerned about levels of atrazine in the groundwater and protecting the public's drinking water supply. Some scientific research has linked development impacts and birth defects to atrazine. To keep track of atrazine levels in drinking water the Minnesota Department of Agriculture has called for additional water monitoring efforts.

Blue-green algae: Excessive nutrients including phosphorus flowing into lakes has resulted in blue-green algae blooms that produces thick mats on the surface. This type of algae becomes toxic as it decomposes it produces some of the most powerful natural poisons. People who come in contact with blue-green algae can experience skin rashes and other irritations. Numerous animals including dogs have died after swimming in lakes infested with blue-green algae.

Clean Water Act – Enacted in 1972, the goal of this law is to "restore and maintain chemical, physical, and biological integrity of the Nation's waters." As one of the most effective environmental laws it has been responsible for a major cleanup of the nation's waterways which is still ongoing. After a 2001 Supreme Court Decision, there has been an effort by some to weaken law by removing protection for headwater streams, seasonal rivers and wetlands.

Conservation Reserve Program – A major loss of acres enrolled in the Conservation Reserve Program (CRP) is happening across the Midwest after the high price of food and ethanol pushed farmers to plow up more land to meet this demand. Most of the land put into CRP has been marginal for farming and provided both water quality and wildlife benefits. In 2009, Minnesota lost an estimated 61,000 acres of CRP land according to the USDA's Farm Service Agency.

Drinking Water – The Minnesota Department of Health is responsible for drinking water issues and in its most recent report it said the state has high quality drinking water but there needs to be constant vigilance. Minnesota's public water supply systems are tested on a regular basis for bacteria, nitrate and other inorganic chemicals, radiological elements, and up to 118 different industrial chemicals and pesticides.

Dirt – cultivation has increased the erosion process either by blowing or washing away sediment (dirt) much more quickly. This life-giving material also wears out easier than people realize, especially by expensive, high-tech machinery compared to smaller farms producing a variety of crops.

Drainage – Formed by glaciers ten thousand years ago, the Minnesota River Basin is blessed with some of the richest soils and as a result one of the most intensively cropped regions in the country. Much of the landscape has been ditched and tiled in order to produce crops for human and animal consumption along with increasing biofuel demands. Millions of feet of subsurface tile lines have been installed dramatically increasing how quickly water flows off the landscape as water levels on rivers bounce up and down at a faster rate. Urban areas also contribute to the drainage issue due to more impervious surfaces like buildings, streets and parking lots. Most of this increased drainage allows untreated water carrying a wide range of pollutants into the water bodies.

Endocrine Disrupting Chemicals – Pharmaceuticals, hormones, pesticides, personal care products, and compounds or Endocrine Disrupting Chemicals have made their way into the state's lakes and streams with the consequences on the health of living organisms mostly unknown at this time. According to a MPCA's study on these compounds, there is evidence of vitellogenin (feminization of male fish) in some of the 12 lakes and four rivers and that the fish "are probably being affected by estrogenic chemicals."

Ethanol – Minnesota is one of the largest producers of this type of biofuel in the country. To produce a single gallon of ethanol gas it takes four gallons of water not counting the amount of water – 2,500 gallons per 1 gallon -used for irrigation of corn. Studies have also shown there is negative effect on wildlife and water quality as land is removed from CRP and other grass-based crops for the production of corn.

Groundwater Contamination – At least 35 communities in the Twin Cities have found groundwater laced with chemical pollution leaking from landfills and industrial sites. Wells are being contaminated as this polluted water is sliding beneath lakes, flowing through stream banks and slipping across subterranean valleys. These chemicals have included 3M's perfluorochemcials or FCS, a degreaser TCE, and vinyl chloride.

Hard Rock Mining – The demand for gravel and rock to be used in road, structure and other construction especially in the Twin Cities has created a high demand for granite outcroppings found in the Minnesota River Basin. Many of these granite outcroppings support numerous endangered and threatened species in Minnesota along with unique habitat including wetlands. Once the granite outcroppings are mined they cannot be restored back to their original form.

Hypoxic Zone – Excessive nutrients including phosphorus and nitrogen have spurred the growth of filamentous algae in the Gulf of Mexico, choking out sunlight needed for vegetation that benefits marine organisms. Eventually, the large amounts of nitrogen-fueled phytoplankton die off, sinking to the bottom where bacteria feed off the material and in the process use up all the available oxygen. This so-called dead zone kills off all living animals including fish and clams.

Individual Septic Systems – There has been an ongoing effort to upgrade out-of-compliance septic systems through low interest loans, incentives and by regulation. Some progress is being made with most counties still reporting an estimated 50 to 60 percent out-of-compliance septic systems. Few counties have produced a complete inventory of septic systems.

Lake Pepin – Located downstream of the Minnesota River, this lake on the Mississippi River has been placed on the U.S. EPA's Impaired Waters List for too much sediment and nutrients. Lake Pepin is filling in with silt at 10 times the rate as pre-settlement meaning it could completely fill in within 340 years. A number of studies have identified the Minnesota River as the biggest contributor of sediment (about three quarters) and phosphorus (close to half) to Lake Pepin.

Out-of-State Pollution: Minnesota has the power to regulate and also provide cost-share funding and technical support for pollution problems in its borders. This isn't the case when it comes to those areas that fall outside state lines including areas of the Minnesota River Basin in South and North Dakota and Iowa. There has been some effort to collaborate with organizations in these three states to tackle water quality issues but it has been limited.

Pharmaceuticals – Proper disposal of pharmaceuticals including out-of-date pills, old cough medicine and unused drugs have become a concern as residue from these products especially the endocrine disruptors are showing up in the state's rivers and lakes. Few counties or cities have the resources to properly collect the pharmaceuticals, which should be incinerated.

Pesticides – More than 28 million pounds involving a couple hundred different types of pesticides are sold annually in Minnesota. Most of the pesticides don't have a set water quality standard to allow for judging environmental impacts. The U.S. EPA has been slow in providing states with the scientific research needed to establish these water quality standards. In addition, responsibilities for overseeing the pesticides have been divided among many agencies.

Road Salt – In order to provide safe driving conditions during the winter huge amounts of salt have been dumped our roads, directly impacting the state's waterbodies including lakes, streams and groundwater. An estimated 350,000 tons of salt is used in the Twin Cities on an annual basis according to the University of Minnesota. All of this salt can produce high levels of chlorides in waterbodies, which can interfere with fish reproduction and even cause death in some animals.

Wetlands – A loss of wetlands continue to outpace restoration efforts in Minnesota despite the state spending millions of dollars. The U.S. Fish and Wildlife Service estimated a net loss of more than 96,000 acres of wetlands since 1980. The study pointed out most of the loss is due to maintenance on old farm drainage systems that improved drainage and emptied wetlands.