Ripple Effect #34

TOO MUCH PHOSPHORUS

Phosphorus is a natural element. It is found in the rocks and soil in the Red River Basin. However, phosphorus in its natural form is not easily dissolved and available to plants for use. Most phosphorus that causes water quality problems in the basin comes from human sources.

In a 2004 study, the Minnesota Pollution Control Agency showed that a significant source of phosphorus comes from the atmosphere – in other words through the air. Airborne dust particles from wind erosion of fields is deposited into rivers and lakes and the phosphorus chemical attached to the dust particles is then deposited in to the open water. Other significant sources come from land erosion by water, especially where fertilizer has been applied and there is no vegetation or sediment traps to stop the overland flow from entering the water channels or lakes.

Human waste water and residential storm sewers also contribute phosphorus to the streams and lakes in the basin. Deicing agents used by many state and local road departments use substances that may add up to 1000 to 10,000 times greater phosphorus than would salt or sand used for deicing compounds. Residential use of dishwasher detergents can add phosphorus to the waters in the basin. Waste that is put down the garbage disposal is another source of residential phosphorus. Over fertilizing and over watering lawns in residential areas contributes to phosphorus in the storm sewers which during rain events become a point source of phosphorus pollution into the Red River and tributaries.

Phosphorus that is used by plants to grow our food crops is an essential nutrient. Excessive phosphorus that enters the water system, be it lakes or streams, can turn the water into a green slimy mess. Worse, it potentially threatens aquatic life and humans who want to recreate in the lakes and streams. In Lake Winnipeg, the end point for the Red River, filamentous blue-green algae explodes with growth in the summer due to the abundant phosphorus that is found in the water and sediments flowing into the lake. The blue-green algae is toxic to fish, humans and other wildlife that come into contact with it. When algae decays in the fall and winter, the decaying process robs the water of oxygen which further decreases the health of the water body for aquatic life.

How can you help protect water quality? Don't over apply fertilizer to your lawn or fields; install a vegetative bufferstrip between your fields edges and water ways to slow the water and trap the sediment; install wind breaks or use conservation tillage to reduce wind erosion; read the labels on the dishwasher detergent that you buy and try to use one that is below 4% content; and encourage local leaders to enact storm water programs that include retention ponds to filter trash and deposit sediment before it goes to the streams. Do your part to reduce phosphorus sources in the Red River Basin!

Until the next Ripple Effect,

The Red River Basin Commission (RRBC)

The RRBC is a grassroots organization that is a chartered not-for-profit corporation under the provisions of Manitoba, North Dakota, Minnesota, and South Dakota law. Our offices in Moorhead, MN and Winnipeg, MB can be reached at 218-291-0422 and 204-982-7254, or you can check out our website at www.redriverbasincommission.org.