



Bringing clarity back to Detroit Lake

October 2016 Snapshots



Looking out from any of the many lakeside restaurants in Detroit Lakes during the summer months reveals hundreds of people enjoying lake life, the beautiful mile-long city beach, dozens of boats cruising up and down the shorelines, and fishing in the city's namesake waterbody – Detroit Lake. The value of this and several connected bodies of water is unquestionable, as the town swells from a base population of 8899 to welcome some 650,000 visitors each year, racking up \$72 million in tourism sales annually according to Explore Minnesota (2013). Add this to the property values of summer cabins, seasonal homes, and residential lake homes, and the economic impact becomes even clearer. And when it comes to water – clarity is the name of the game.



A study conducted on the upper Pelican River watershed determined that even a one foot decline in water clarity would result in an average \$11,500 loss in property value per parcel on the lake. With 390 parcels, that's a whopping \$4.5 million economic impact on real estate values alone. Given this, it's likely no surprise that in the early 1990s there was significant concern when residents and visitors started noticing a marked decline in water quality in Big and Little Detroit Lakes. Algal blooms increased, water clarity declined, and nuisance vegetation began to impact recreation and aesthetics.

The Watershed District

The Pelican River Watershed District was formed in 1966 to take on water quality issues. In 1995 when concerns were raised about the water quality decline of Big and Little Detroit Lakes, the District took action. It started with a sequential water quality monitoring program to identify problem sources and gain the scientific background needed to correct the problems. Projects like the installation of city sewer around the lakes to minimize septic failures, upstream stormwater detention basins within the city to collect urban runoff, and the implementation of the Watershed District's Water Management Rules in 1997 requiring stormwater mitigation practices for residential and commercial development were put into place. Much progress was made toward reversing the trends, but Big Detroit Lake in particular wasn't showing the water quality improvement everyone had hoped for.

Rice Lake

Upstream from the city of Detroit Lakes is a large wetland complex named Rice Lake. Partially drained over a century ago, Rice Lake now occupies a total area of about 1000 acres split between a small open-water portion and a larger wetland portion filled with a floating cattail bog. Through diagnostic studies, the District determined that during heavy rainfall events the cattail beds rise, providing access to nutrients usually trapped in the root systems. Those nutrients flush out of the wetland and into downstream Detroit Lake, negatively impacting water clarity and raising residents' concerns. To prevent the "flushing" phenomena, a higher level of

water needed to be maintained on the wetland, similar to the conditions that likely existed before the wetland was hydraulically altered in 1915.

Partnerships Provide the Key

Even the savviest of implementers knows that when a big project needs to be done, you can't expect great results by going it alone. Such is the case with the Detroit Lake Targeted Watershed project grant awarded to the Pelican River Watershed District this year. The Watershed District acquired flowage and other easements on all the affected land surrounding Rice Lake. They installed 14 best management practices upstream to help reduce inputs into the wetland. But the largest, most significant portion of the project still remained untouched – control structures allowing for the stabilization of the Rice Lake water levels to prevent nutrients from flushing out downstream. Through a \$1.5 million award from the BWSR Targeted Watershed grant program, the Watershed District teamed up with the Natural Resource Conservation Service, the Becker Soil and Water Conservation District, Department of Natural Resources, and BWSR to engineer, implement, and complete the Rice Lake project. Upon completion, the project will not only reduce nutrient contributions by 50% to Detroit Lake, but also provide significant impacts to downstream lakes including Sallie and Melissa which are also destination lakes for the area. A PL-566 study conducted on the project anticipated a total economic impact of \$13 million over the lifespan of the project. As the Pelican River Watershed District celebrates their 50th anniversary this year, their citizens have plenty to celebrate too.