



# Lake Rebecca – a small lake with big improvements

## August 2013 Snapshots

It took more than ten years to accomplish, but 254-acre Lake Rebecca in Hennepin County is finally cleaned up.

First listed on the state's impaired water's list in 1998 for excessive mercury, Lake Rebecca was also listed in 2008 for excess nutrients, limiting recreation on the popular west-metro lake. At one point, the excess nutrients (phosphorus) caused so much algae that the swimming beach had to be curtained off to allow for summer fun.

Richard Brasch, senior water resources manager at Three Rivers Park District, said that a substantial part of the pollution affecting Lake Rebecca can be considered "legacy" impacts of poor land use management practices that probably severely affected the lake even prior to the time the park district purchased the land in the 1960s.

"Foremost among these was probably the wintering of cattle on the ice of Lake Rebecca, which may be single biggest causal factor in the high internal loading rates in the lake," Brasch said.

Managed by Three Rivers Park District and Hennepin County Environmental Services, staff worked for years to target sources of pollution and install a series of best management practices (BMPs) that would decrease nutrient loading.

One of the bigger partnerships staff developed to address lake pollution was with the Zuhrah Shriners, who own a nearby ranch. Pinpointing runoff issues, staff worked tirelessly with the Shriners to identify solutions and install feedlot and manure best management practices. Additional projects on the property included exclusion fencing, easement acquisition, buffers, waterways, clean water diversions, runoff ponding areas, and a manure containment stacking slab.

Hennepin County Environmental Services Senior Scientist Jim Kujawa said the Shriners take serious pride in personal responsibility and therefore have been receptive to changes in their operation. "We have assisted them for more than fifteen years and they really like the projects," Kujawa said.

More work was needed to clean up the lake. Three Rivers Park District installed stormwater BMPs in the park such as pervious pavement and shoreline improvements as part of park upgrade projects. Finally, the Three Rivers Park Board treated the invasive curly-leaf pondweed for three consecutive years, funded by a DNR Aquatic Plant Management grant. The third year's treatment also included an alum treatment which binds the in-lake phosphorus to the bottom. Outdoor Heritage Funds (from the Clean Water, Land and Legacy Amendment) partially funded the in-lake treatments.

Other funding sources included Hennepin County, Hennepin Conservation District, and Pioneer - Sarah Creek Watershed Management Organization, which paid for Hennepin County staff to remain persistent working with the Zuhrah Shriners. Construction costs for the runoff control and feedlot projects were split between Hennepin County's Natural Resource Incentives for Critical Habitat (NRICH) cost-share program, federal NRCS funds, and the State Cost Share Program (Board of Water and Soil Resources).

Brasch said visitors to the park have responded positively to the changes in the lake. "Most gratifying is that a 2012 survey of repeat beach users indicated that almost 2/3 of those surveyed indicated a noticeable improvement in water quality in the lake and 3/4 of all of those surveyed gave water quality in the lake a school grade of 'B' or 'A'," Brasch said.



*Post-alum treatment picture of Lake Rebecca. According to Three Rivers Park District, more than 187,000 people visit the park annually.*