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Prior Lake-Spring Lake Watershed District seizes carp

BY MAGGIE KARSCHNIA

Achieving good water quality is a complex problem to tackle. Not only does Upper Prior Lake receive fertilizers from runoff coming from residential lawns and farm fields, there are also nutrients stored on the bottom of the lake that have built up over time. When the lake bottom gets stirred up by bottom-feeding carp, these nutrients are released back into the water, contributing to algae blooms.

The extensive algae blooms reported by residents on Upper Prior Lake this summer and fall were a result of a combination of factors including carp activity, fertilizers and nutrients in runoff, and just the right weather conditions.

So, how is the Prior Lake-Spring Lake Watershed District catching the carp?

Beginning in 2015, the district was awarded a Minnesota Pollution Control Agency grant for carp management through the Clean Water Partnership. The grant covers three connected lakes—Spring, Upper Prior and Lower Prior. The project is part of an integrated pest management strategy that includes tracking the movement and population of carp, targeted carp removals, identifying spawning areas and installing carp barriers.

On Nov. 30, the district worked with a local commercial fisherman and WSB and Associates to complete a seining (netting) of carp. During this single event, 416 carp were captured. This was a momentous occasion, as it was the first time that Upper Prior Lake has ever been commercially seined for carp.

Previously, little information was known about the lake bottom and the locations of rocks and other obstructions that could potentially tear the net. Historically, fisherman have avoided netting the lake completely for this reason, and because Prior Lake is regulated for zebra mussels. Through the grant, the district identified an area that was clear of rocks and obstructions and to complete this unprecedented carp removal on Upper Prior Lake.

A total of 150 fish were marked with small Passive Integrated Transponder (PIT) tags and released back into Upper Prior Lake to help track their migration routes. Unwittingly working as spies, these marked carp will help the watershed district to determine where the carp are spawning each spring by recording their locations using receiver devices. By figuring out where their breeding grounds are, the Watershed District can cut them off from these areas, creating temporary barriers to limit their reproduction.

The remaining fish from the seine event were removed from Upper Prior Lake and taken to the Shakopee Mdewakanton Sioux Community's Organic Recycling Facility. An astounding 1.9 tons of carp were removed from Upper Prior Lake. The district will continue its efforts to seize the carp this winter, as it plans to complete a winter seine (netting) on both Spring Lake and Upper Prior Lake. This spring, temporary carp barriers will be placed on connections to wetlands or waterbodies where carp are suspected to be spawning. This comprehensive carp control effort will lead to long-term gains for lake users, Upper Prior Lake residents and all those living downstream.

WHY FOCUS ON CARP?

Many projects to improve the water quality of the lake have already been completed, while others are ongoing. Due to the poor water quality experienced on Upper Prior this year, the district moved quickly to ramp up efforts for this lake and completed a research project that recommended a multi-step solution. Controlling the invasive carp population is the first step and needs to happen before the next steps are implemented.

According to the Department of Natural Resources, "Common carp are one of the most damaging aquatic invasive species due to their wide distribution and severe impacts in shallow lakes and wetlands. Their feeding disrupts shallowly-rooted plants, muddying the water and releases phosphorus that increases algae abundance. Native aquatic plants diminish, along with waterfowl and fish who depend upon them."

Why not just treat Upper Prior Lake with aluminum sulfate (alum) like was done on Spring Lake?

The preliminary population estimates of carp in Upper Prior Lake are three to four times higher than recommended. Carp can have a big impact on the effectiveness and longevity of an alum treatment because their bottom-feeding habits can disturb the alum on the lake bottom.

Alum treatments are expensive and only a band-aid to a much larger problem providing a temporary fix. Removing the carp has the potential to greatly improve water quality by reducing the internal loading which may actually reduce the amount of alum needed to treat the lake and help the treatments last longer. EOR, the district's engineering firm, recommended two alum treatments over three years, at a cost of approximately $475,000 per treatment. With such large carp numbers and the cost of alum so high, it is more cost-effective to spend $5,000 per carp removal effort now and remove as many as possible before completing an alum treatment.

Has Upper Prior Lake always been impaired?

In 2002, a Total Maximum Daily Load (TMDL) study was completed that addressed the nutrient impairment for both Upper Prior Lake and Spring Lake. The goal of the TMDL study was to determine what needed to be done to help both of the lakes meet state water quality standards, which were listed on Minnesota's List of Impaired Waters.

The Watershed District put together a comprehensive implementation plan designed to attack the water quality problem on Upper Prior Lake from all angles. The plan included potential projects such as: reducing rough fish (carp) populations; treating water upstream at the district's ferric chloride plant; applying an aluminum sulfate (alum) treatment to contain the nutrients on the lake bed; controlling curlyleaf pondweed; retrofitting best management practices for city street and highway projects; and providing cost-share funding for residential and agricultural landowners' water quality projects.

WHAT CAN I DO TO HELP?

Part of the plan to improve the water quality of Upper Prior Lake includes participation from local residents. From rain gardens to lakeshore restorations to rain barrels to turf management, there are many things individual residents can do to help. See the district's website for more information about the different cost-share programs and incentives under the "Get Involved" tab: www.plslwd.org.

For more information, call the watershed district at 952-447-4166.

Maggie Karschnia is the water resources project manager for the Prior Lake-Spring Lake Watershed District.