

A lake minus carp adds more algae



Photos by KYNDELL HARKNESS • kharkness@startribune.com

Roger Scharf, an engineering consultant, and Mike Casanova, of the Riley-Purgatory Bluff Creek Watershed District, foreground, left the southern end of Lake Susan in Chanhassen after taking a look Wednesday at controlled water vegetation they have planted. Researchers are trying to clean up area lakes.

Algae supplant carp as problem

U's carp removal put Lake Susan in the clear, then the soup.

native plants to grow after carp are removed. Most clean lakes have an underwater meadow of native plants that provide habitat for game fish and keep algae and invasive species in check, said David Austin, task manager for lake restoration at CHM2Hill, a consulting company that acts as the Watershed District's engineers.

Without native plants to absorb nutrients, a lake is likely to turn green with algae as Lake Susan did, Austin said. Five plant species will be transplanted to Lake Susan from nearby Lake Ann. Some of the transplants will be caged off underwater to keep the carp and muskrats from disturbing them, Austin said.

"For plant restoration in these shallow lakes, the science isn't all in yet. We are still learning how to do this," Austin said. "This will be a pioneering effort at how to bring the native plants back and keep the invasives at bay."

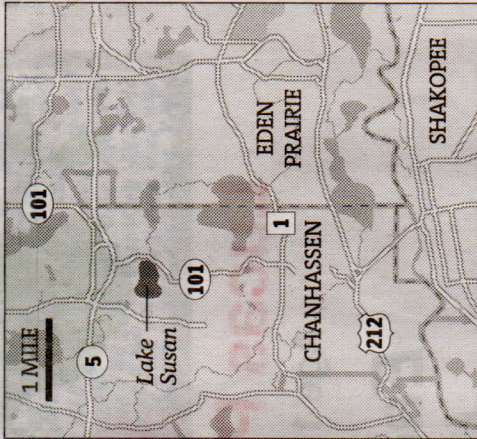
Lake continues on B7 ▶



This Northern Milfoil, which is native to Minnesota, is being reintroduced to Lake Susan in a controlled part of the lake. Researchers are trying to encourage native plants to grow after carp are removed.

sudden and so dramatic that we were stunned." Researchers are taking the development in stride, as just another challenge in cleaning up lakes.

The next step is to figure out how to encourage



Sources: ESRI, TeleAtlas

◀ LAKE FROM B1

'A work in progress'

The ongoing study by the University of Minnesota was commissioned by the district to improve water quality in carp-infested lakes in Eden Prairie and Chanhasen and to establish guidelines that could be used on other lakes.

In January, university researchers and commercial fishermen cut a hole in the ice at Lake Susan and used a 2,000-foot skein net to scoop out the carp. They figure they removed 78 percent of the carp that had populated the 100-acre lake.

With fewer carp churning up the lake bottom, water clarity doubled in depth during April, May, June and into July, said university biologist Peter Sorensen, who is leading the carp research project.

But by early August, all that extra sunlight cutting through the clear water had warmed the lake bottom enough to release nutrients that prompted the algae bloom.

"The benefit was all early in the season," Sorensen said. "Success was not total. It's a work in progress. We are learning."

Ray Newman, an expert on invasive plants, will oversee the plant restoration work at Lake Susan. He and Sorensen are both professors in the university's Depart-

ment of Fisheries, Wildlife and Conservation Biology.

Two-thirds of all Minnesota lakes, and all metro-area lakes, are infested with common carp, according to Sorensen. They can dig up to a foot into the muck at the bottom of a lake, uprooting good plants and stirring phosphorus on the lake floor back into the water, where it fertilizes al-

gae and weeds. Their own excretions further foul the water. Until carp are controlled, it's unlikely water quality will improve, Sorensen said. Although a second summer's results will be needed to be sure that the removal of carp, and not this summer's drought, improved water clarity in Lake Susan, Sorensen said, "I think it was highly likely it was the carp."

One especially encouraging finding is that young carp have not shown up to replace the older fish removed last winter, Sorensen said. Lake Susan carp spawn in an adjoining wetland, and the research team blocked the young fish from reaching the lake, he said.

The positive water clarity results achieved without removing 100 percent of the carp from the lake suggests there is a tipping point — a certain concentration of carp — beyond which lake water quality deteriorates.

To try to define that tipping point, the research team will remove another 10 percent of the lake's carp this coming winter, to see if benefits are the same or better next spring.