

# Carp Project Summary

February 2013

2.5 years ago the lake association began a project to try to limit the number of carp in Circle Lake and improve the overall water quality. Carp are detrimental to our lake in several ways as they destroy vital lake vegetation that helps clean the water and provide cover for game fish. They also greatly increase the biomass of the lake which increases algae levels. Our project has an aggressive four prong approach:

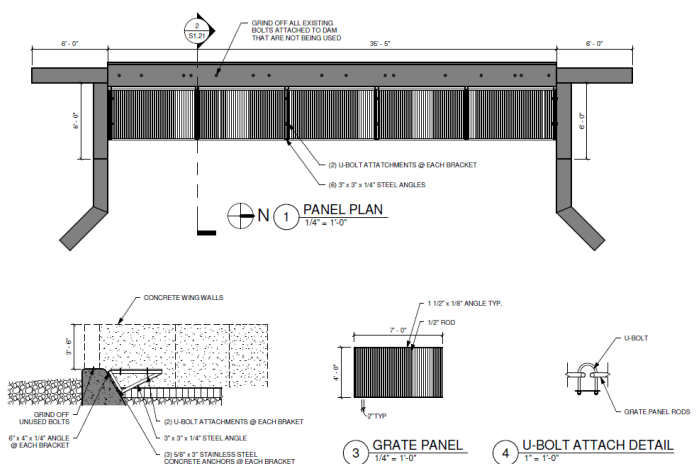
- Reestablish a rough fish barrier at Wolf Creek to help prevent carp from entering the lake from the Cannon River.
- Limit spawning locations for carp around Circle Lake.
- Increase numbers of game fish that feed on carp eggs.
- Remove adult carp from Circle Lake through seining.



In 2012, our team made great progress on each of these initiatives. Reestablishing a fish barrier at Wolf Creek has been an ongoing task with many incremental steps. In the Spring of 2012, we received permission from the county and DNR to install a temporary, proof of concept, barrier in Wolf Creek. The temporary fish grate proved two things: 1) a fish barrier in Wolf Creek does prevent mature carp from entering Circle Lake, and 2) a temporary solution is not robust enough to stand up to the varying levels of water and debris in the creek. An image of the temporary carp barrier is shown in Figure 1.

Figure 1 Temporary Carp Barrier

Throughout 2012, we continued to seek permission for installing a permanent carp barrier on the dam. Through numerous meetings with the county and DNR, an approach was approved that required the lake association to hire an engineering firm that would design a carp barrier that would meet both the county and DNR's requirements of being structurally sound and not increase the water level of Circle Lake. In mid-2012, the lake association hired a local engineering firm to design such a system.



The initial design included reusing the existing carp barrier that was originally built in the mid-90's and mounting the hinged system on the back of the dam. The DNR rejected this design as they did not believe it would eliminate the possibility of increasing the water level of the lake. The second design

Figure 2 Permanent Carp Barrier

concept was to mount a non-hinged system to the back side of the dam. This system will not be as effective in high water conditions, but does offer a path forward for approval by both the county and DNR. The engineering firm is currently working to receive approval to fabricate and install a fixed system. A drawing of this design can be seen in Figure 2. The new system will include provisions for a hinge that could allow for the barrier to rise as water level rises. The lake association will work with the county and DNR for approval of a hinged concept, if the fixed concept proves to be ineffective.

In the spring, carp seek shallow spawning locations in ponds adjacent to the lake. In 2012, the lake association limited access to a major spawning location on the East side of the lake by installing temporary carp barriers across access points. This action effectively stopped spawning carp from entering this area and reduced spawning activity. We plan to continue this effort in 2013 with a more permanent solution.

Game fish, such as Bluegill, limit carp population by feeding on their eggs in the spring. In 2012, the lake association researched the possibility of stocking the lake with bluegill to reduce the number of carp eggs. The lake association was ready to stock the lake in the Spring of 2012; however, the DNR encouraged us to wait as they were conducting a lake survey later in the Summer that would accurately count the number of each type of fish in the lake. The lake survey showed that Circle Lake has a healthy population of Bluegill as 21/trap net were caught in 2012, which was up from 10/trap net in 2007. In 2013, the lake association will continue to work with the DNR to ensure a healthy population of bluegill remain in Circle Lake.

Carp seining has proven to be an effective way of removing adult carp from the lake. In the past winters, thousands of pounds of carp have been removed. Due to unusually warm temperatures last winter, the ice did not reach a depth that allowed for seining equipment, so no seining occurred. The lake association will continue to work with the DNR and commercial fisherman to encourage seining when possible. We are also looking into other carp removal concepts, like a carp bow-fishing tournament in the Summer of 2013.