

CRYSTAL COVE LAKE

Community ...

South Sioux City's **Crystal Cove Lake** is a 30-acre sandpit lake similar to many along the Platte and Missouri Rivers in Nebraska. It exhibited relatively good water clarity, had steep slopes from shallow to deeper water and was heavily used for recreation and fishing. It did, however, become choked with rooted aquatic plants that annually occur at high enough levels to limit recreation and stunt sport fish populations. Because of this, Crystal Cove became a candidate for bottom barrier treatments to reduce aquatic plant growth.

Challenges ...

South Sioux City set six main goals for the Crystal Cove project, all of which were achieved over the course of the project: 1. Demonstrate proper use of bottom barriers and their benefits. 2. Use the project as an educational focal point for lake users, property owners and managers on the most recent lake management approaches, including bottom barrier use. 3. Raise public awareness on bottom barriers. 4. Erect a sign at the lake identifying it as a demonstration/education project and provide basic information on bottom barriers. 5. Produce a bottom barrier use fact sheet outlining methodologies and anticipated benefits. 6. Produce an illustrated lake management guide including sections on current pond management techniques using bottom barriers.

Solutions ...

Crystal Cove was treated with bottom barriers in April 2002. Because of differing bottom topography,

shallow water areas and shallow-to-deep transition areas were selected for treatment. Each area received varying lengths of barrier material randomly arranged in parallel rows. Members of a local dive and rescue club helped stake or weigh down barrier strips where wading was impractical. Monthly water quality sampling was done to compare to pre-treatment conditions. Over the long term, barrier strips were left in place for visual monitoring of their effectiveness.

Results ...

Burlap and TAC-150, used in the barrier strip experiments, both proved to be effective at controlling aquatic vegetation. All of the random strips, no matter the material used, were 100 percent successful at controlling vegetation growth. One big difference was in the longevity of the materials themselves. One year after the test strips were placed on the bottom of the lake, the TAC-150 manufactured material remained in excellent shape, whereas the burlap, being a natural material, had begun to decompose. The total cost of this project was \$2,626. Of this amount, CLEAR provided \$1,026 while South Sioux City and the Siouxland Dive and Rescue Team provided \$1,600.

