

## Ravine Project SW corner of Circle Lake

Numerous ravines enter Circle Lake. During a moderate to heavy rain event, the water rushing down the ravines transports large amounts of sediment into the lake. Below are pictures of what was occurring in one ravine on the southwest corner of the lake.



A chunk of dirt the size of a full size car caving in from the side wall and falling into the ravine where water can readily carry it into Circle Lake. April 2014.



A sharp curve in the ravine. Water undercutting the embankment prior to erosion control structure installation. Late May 2014.

The solution to the above problem was to slow the water's down to reduce the amount of soil undercut from the sides of the ravine. To do this, a concrete berm and a series of log cribs were constructed in the ravine. Combined with the use of on-site brushy materials, these structures have succeeded in slowing the speed of the water, and significantly reduced the amount of sediment entering Circle Lake from this point source. In spite of extremely difficult working conditions, (it was a very wet June) our contractor, Sonnee Environmental Services, completed the project on schedule. Funding for this engineered project came from the Circle Lake Association, the Tri-Lakes Sportsmen's Club, and the landowners.

By our engineer's estimates, this ravine was contributing approximately 120 cubic yards of sediment annually into Circle Lake. **THAT IS NO LONGER THE CASE!**



A sharp curve now with log crib structure installed. Water pools up in front of the structure and no longer achieves sufficient energy to undercut the bank. June 2014.



An example of how the structures were installed in a sequential series to prevent water from gaining sufficient momentum to cause significant erosion. Also, on site brushy material used for additional erosion control assistance. June 2014.



Water pools in front of the one concrete structure in this project. The open area between the concrete blocks is to allow the water to move more quickly through this structure during high flow. This keeps the structure from being over topped.



The concrete structure during a high water event.