

Greene County Emergency Watershed Project Completed



Greene County was one of many East Tennessee counties declared a federal disaster area in the aftermath of flooding produced by up to 21 inches of rain in August 2001. "Literally, the last stone was placed in a stream bank protection structure on Cassi Creek on February 25, 2005," said Mike McElroy, District Conservationist in Greene County.

The total cost of this Emergency Watershed Program (EWP) project is estimated at \$2.5 million. The Greene County government provided the 25 percent match, required to receive federal funding, in in-kind services.

Initially, the focus was on removing flood debris, which included everything from large trees to vehicles, and parts of houses and barns. After the debris was removed, the focus turned to stream bank stabilization.



Work was done by the Greene County Highway Department and 3 private contractors and included installation of gabion baskets on ten sites, rail piling on two sites, rock riprap on several thousand feet of stream bank using 3 ft. to 4 ft. diameter rock, and numerous v-weirs and j-hook jetties over the entire project area.

Installation of gabion baskets is very labor intensive. First geotextile material is put in place after the site has been excavated, and then gabion mattresses installed. Mattresses are 9 inches tall x 6 ft. x 3 ft. footers that must be installed at or below the bottom of the stream bank. The mattress is filled with 3-4 inch stone and each section is hand tied together. Then 3 ft. x 3 ft. x 3 ft. gabion baskets are placed on the footer. The basket is filled about one-third with 6-8 inch stone, and then a laborer has to hand place the rock so that it has a flat face on the exposed surface of the baskets. Then the same process is completed for the next third, and then the final third. The gabion baskets are hand tied to each other at each corner using PVC coated wire. Once all the gabions are in place, which may be 2, 3, or 4 baskets high, they are backfilled with crushed stone that is compacted with a whacker packer. Then that area is backfilled with soil material. It is a time consuming, labor intensive process.



One contractor installed rail pilings on Upper Paint Creek. This project included drilling 12 inch diameter holes in solid limestone on 2 ft. centers, installing 9 inch diameter railroad steel in the holes 9 ft. deep and grouting them in with concrete. Then highway guardrails were wired to the railroad steel and backfilled with rock.



"The Greene County Highway Department alone used more than 23,400 tons of rock for flood-related stream bank repairs," stated McElroy. "Many were the size of refrigerators and approximately two-thirds had to be placed one rock at a time."



This EWP project has been a cooperative effort of several entities including contractors, the Greene County Highway Department, and NRCS. "It has taken approximately 14 months to complete the project," McElroy said. "It has involved a lot of hard work, but thanks to the cooperative effort of everyone involved, what could have been a difficult job has been very enjoyable and rewarding."