

CORONADO SOIL & WATER CONSERVATION DISTRICT
FY17 WQ&C GRANT, Updated PO # 165002
4th Quarterly Report and Final Report
GULLY EROSION CURTAILMENT IN THE PLACITAS OPEN SPACE

The proposed project was designed to extend the intended impact of the watershed improvement techniques applied to the Open Space slopes through a FY2016 project completed by the Coronado SWCD. The FY16 project was designed to demonstrate the use of simple permaculture techniques applied with hand tools to slopes for slowing the sheeting run-off and increasing infiltration using a pattern of parallel swales and berms across four slopes. The FY17 project was carried out in the same general work area in the Placitas Open Space as the previous erosion control project.

Project Objectives. Following the observations of the previous project's technical consultant Jim Brooks, this FY17 project was designed to address the erosion-prone drainage areas between the slopes treated in the earlier project. A simple technique appropriate for slowing water in the as yet small but obvious natural rill patterns was applied in between three slopes in the project area. The intent of the design was to apply water-slowing techniques in the drainages, linked with the water-slowing function of the swales already in place across the slopes. The goal is to inhibit the likelihood of further incising in the drainage areas leading to the creation of full-blown gullies over time, due to the typical intermittent but often extreme run-off events. Slowing and spreading the run-off will reduce the amount of sediment being carried to the larger drainages, and make available more water infiltration for the restoration of natural vegetation to protect these drainage areas from severe erosion.



Treatment. The permaculture-type approach used for this task is referred to as one-rock plating. For this, rocks were laid in “plates”, about three feet long, one layer deep, and every five feet or more, depending on the contours of the rill area being treated. Rocks, relatively flat in nature, were gathered from nearby areas, fitted together by hand, and stabilized with hand pressure and gravel in the narrow cracks between the rocks. These plates were placed in the lowest areas and up the sides where past flow was evident.



Design. The FY2017 project was carried out in the Placitas Open Space, from December through April, on a schedule of twice a month. Volunteers were recruited to do the rock plating. Counting the participating members of the Coronado SWCD, there typically were 5 or 6 people in the work sessions. The instruction for the rock plating was provided by Mr. Jim Brooks, contracted to participate with the volunteers in an initial training session on the work site, and again at the end of the project to look at the areas where the rock plating had been applied.

Along with tools used for the FY16 project, the tool most useful and purchased for this project is a soil knife, several of which were purchased. Volunteers were also supplied with kneeling pads, which the project staff crafted out of thick carpet squares that had been donated to the CSWCD. One of the volunteers also demonstrated to the project team the usefulness of a rubber mallet for getting the rocks well seated in the soil, which he brought for the sessions he worked.



Evaluation. During the final visit with the project team on site, Mr. Brooks examined both the quality of the rock-plating installation and of the formerly applied swales and berms on the sides of the slopes. He provided the team with his insights on how well these had worked or might work when the spring precipitation occurs. Where the berms had been breached, the team was able to see more clearly what the drainage patterns were on the slopes and consider whether repair needed to be done to them. For the newly installed rock plates, there had not as yet been enough precipitation and run-off to observe the efficacy of the rock plates, but observation of these areas will continue across the summer, as team members visit the Placitas Open Space. Mr. Brooks provided suggestions for how to improve some of them, and where more plating might be of value.

Project Details

Carried out by:

Coronado Soil and Water Conservation District (CSWCD)

See web site: www.coronadoswcd.org/

Team:

Project Leader	Lynn Montgomery, Chair, CSWCD
Project Administrator and Volunteer	Carol Kennedy, CSWCD Administrator
Project Manager	Patricia Bolton, PhD., CSWCD Supervisor
Project Photographer	Zane (Cosmos) Dohner, Volunteer

Technical Assistance:

Project Subject Matter Expert and Instructor (contracted):

Jim Brooks, Owner,
Soilutions—Advanced Terrain Systems, Albuquerque