

Rethinking ye olde swale strategy

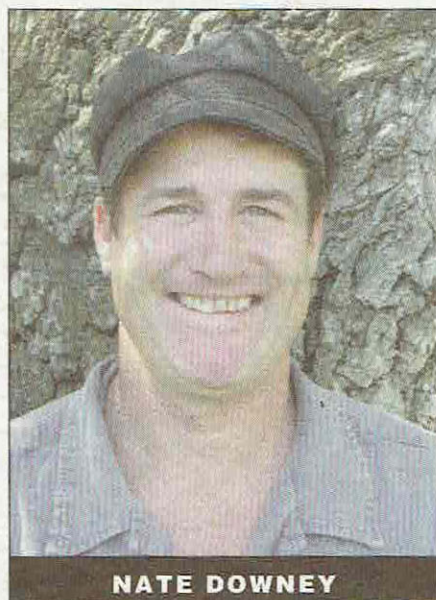
For two decades, I have been incorporating swale systems into Santa Fe Permaculture's landscape designs and installations. Swales are ditches dug along the contour of a slope with the dirt from the ditch placed and tamped along the downhill side in the form of a berm. When precipitation hits a slope, runoff slides into the ditch and is trapped by the berm. Vast quantities of water are harvested, and nearby plants are much happier than they would have been without the swale.

Often laid out in an interlocking fish-scale pattern, swales not only harvest rain and snow, they also control erosion along hillsides. Buildings, driveways, and even gardens can be protected by the ravages of a would-be arroyo. Valuable water resources are used rather than wasted, and downstream water pollution is prevented when sediment is held at bay.

However, based on my experience, my opinion of earthen swales is evolving. I am still a big fan in a variety of applications, but because of the heavily compacted berm left in the wake of every swale construction, I have increasingly realized that sometimes there are better techniques. On steep slopes where the dirt from the ditch would slough off and be incapable of forming a berm, one very successful alternative is to use straw bales that are tacked down with rebar and set deep into the slope.

Prefabricated products called *wattles* can also be staked to a slope. Often about 10 inches in diameter and more than 10 feet long, these sausage-like objects are filled with straw, jute, coconut, or other fibrous material. Usually made very far from Santa Fe, wattles are not inexpensive, especially when shipping is factored in, but they can be cost-effective given the right circumstances.

These days my favorite alternative to the earthen swale is a technique I call a *straw-book swale*. The berm of this kind of swale is made out of the integrated sections or



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slices of a straw bale, which are often called *flakes* or *books*. First, dig an eight-inch deep and four-inch wide trench along the contour of a slope. Next, insert the books into the trench so that about half to a third of the book sticks out of the ground. Pack some of your excavated dirt back into the trench to secure the book, and at either end of the book swale fabricate a couple of small berms that will direct runoff toward the trench. Finally, sow native seeds and/or plant drought-tolerant plants just above the book swales so that root systems can do the job of erosion control once the straw has decayed.

The benefits of straw-book swales are many. They are inexpensive to install, they bring organic matter to our barren soils, and they can slow the flow of runoff just like an earth swale. They also do not leave compacted soil behind in the way that the berms of earthen swales do, and they do not use nearly as many resources as straw-bale swales or wattles. The best techniques for water harvesting and erosion control cannot, of course, be prescribed by a column in a newspaper, but you can feel free to ask me questions about this and all things sustainable at my relatively new blog, www.backyarddigest.com.

Nate Downey is president of Santa Fe Permaculture, an ecological landscape-design, -consultation, and -installation firm. His book, Harvest the Rain, will be published by Sunstone Press this year.