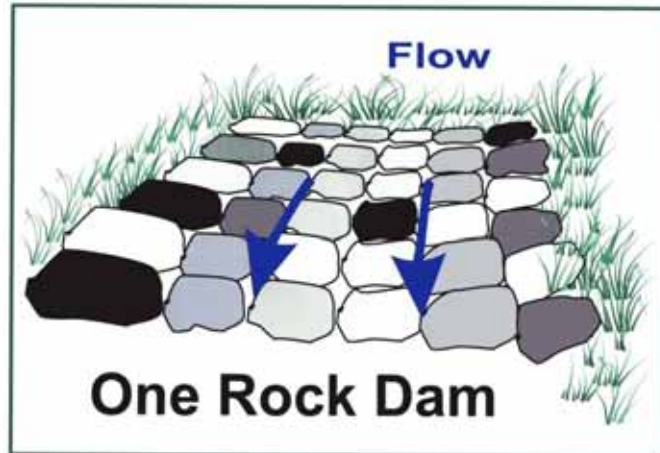


One-Rock Dam

A **one-rock dam** is so named because it is only one rock tall. The dam should be several rows of rock across from the upstream to the downstream edge. The dam should not be taller than 1/3 bankfull depth of the planned channel.



Stones should be selected, sized, and placed so that the completed structure ends up relatively level from bank to bank and flat from the upstream edge to the downstream edge. This can be accomplished by placing larger rocks in the deepest part of the channel, smaller ones to either side.

A **one-rock dam** is also a grade control structure. The primary purpose of a grade control structure is to keep a gully from eroding deeper. Properly used, grade control structures are the first step in reversing the erosion process and initiating sediment deposition, water harvesting, nutrient retention, revegetation, and bank stabilization. Grade control structures are especially important in harvesting water from storm flows in order to irrigate and nurture new plant growth and colonization in gully bottoms. Vigorous plant growth is critical to increasing channel roughness, trapping sediments, detaining and retaining organic debris, and capturing soil nutrients.



When using **one-rock dams** the emphasis is on keeping these structures low in profile and compact in form. This is in contrast to check dams which tend to be tall in profile and are designed to trap larger volumes of sediment and water, and are typically installed in steep mountain streams (>4% grade). Check dams tend to be vulnerable to undercutting and end-cutting when too much water is stored behind the dam.

A **one-rock dam** consists of more than one rock! The key to its success is that rocks are placed only one rock tall or one rock deep! They are not stacked. Rocks are placed in several, parallel rows across the gully floor and packed tightly together. A row of rocks should be of equal height and appear relatively flat or level from bank to bank. The elevation of the upstream row can be slightly higher than the downstream row so that the dam slopes gently from the top edge to the bottom edge.

Dams consisting of 3 to 5 parallel rows of rocks have considerable mass but minimal surface exposure to the force of moving water. Therefore, advancing flood waters slide across

the surface of the dam rather than pushing against it. Because the dam is low in height, the water drops only a few inches and has little power to erode a scour pool that might undercut the structure. Successive floods pack sand, gravel, and organic material between the rocks forming an excellent seed bed for new plants to colonize and grow. Moisture accumulates under the rocks to nurture the young plants. Soon the roots of the maturing plants bind the rocks of the dam together for greater resistance to successive flood forces.

