

What Do We Want to Happen to Rainwater and What Does Cedar Have to do with It?

I think most everyone will agree that we like to have rain, at least in amounts that do not result in flooding. But when asked what we want to happen to those raindrops, we many find several different opinions as well as some blank stares from those who have never thought about it.

Some will say they want it to recharge the aquifer or maybe increase spring flow. Some will say they want it to nourish the vegetation. Some will say they want it to flow into a river and fill a reservoir. Some of these answers are not mutually exclusive, but some are.

Let me start by discussing what I think is the current thinking among professionals and folks who have studied the issue. I think that for the good of the habitat, the vegetation, the health of riparian areas and for our water supply, most of these people will say they want the raindrops to reach the ground and soak into the ground.

Once water gets into the ground, some of it will be taken up by vegetation and used for photosynthesis to grow larger plants and/or for transpiration to transport water and minerals from roots to the leaves. Some of it will likely flow underground downhill until it reaches the riparian zone where it may either add to the local watertable which makes for the base flow of the creek or some of it may come out of the ground as springs or seeps. Some of the water in the ground may seep deep underground to help recharge an aquifer (a minor amount in some cases, more in other cases). The base flow of the river (the flow in between rain events, which is most of the time) is maintained by spring and seep discharge and by the water in the watertable along the banks in the riparian area adjacent to the river.

Those that agree that the above-described process is the desired fate of rainwater will likely agree on several conditions that will enhance the process of getting water to soak into the ground. First, we know that all vegetation (living and dead litter) above the ground will get wet with the first raindrops, but once each leaf is as wet as it can be, all subsequent rainfall will reach the ground. The size of the plant and the surface area and texture of the leaves will determine how much rainfall it takes to completely wet each leaf before the rest of the raindrops reach the ground. And cedar bushes, being larger plants and with leaves better able to hold water, will intercept more water than, say, native grasses. So will large oak trees. So replacing cedar with native grasses should lead to more water reaching the ground and a healthier native habitat.

We also know that raindrops falling on bare ground may dislodge soil particles and cause the water to carry it off resulting in silting of rivers and lakes, so bare ground is undesirable in terms of getting water to soak into the ground. Also, the soil is more porous under native bunch grasses than under bare ground which facilitates water soaking into the ground under grass.

Those folks who would rather see the rainfall run off the land and into the creeks and reservoirs are generally more interested in having full reservoirs for the public to use. So those with this view will probably agree that by removing cedar we are removing one impediment to water reaching the surface of the ground where it can, under the right conditions, flow off the land into the rivers. This view is less concerned about the health of the vegetation or the riparian zones or the native habitat and more interested in getting as much of the rainfall to run off as possible to keep the lakes full. Folks with this view are more likely to think the amount of cedar interception is greater than folks with the differing view, and in fact there are government programs to help landowners clear cedar based on this belief.

I am obviously biased in favor of the first group described above, so I probably have not done a balanced job of presenting both sides of the argument. My main concern with maximizing the amount of runoff is that taken to its logical conclusion, building more dams and reservoirs and paving more watersheds would be the logical solution to our water problems—but who would want to live in a Hill Country covered with concrete?

Until next time...

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