

Intro to Permaculture Patterns of Soil and Water Video Transcript

It's not just water that moves in this watershed tree pattern. Soils follow this pattern as well. The upper watershed is weathered over time, and soils are moved and distributed by water. So oftentimes soil maps will reflect the same branching drainage pattern. This is a soils map for a property south of where I live in Corvallis, Oregon. The red color represents a heavy clay soil type, which occupies the thin, branched drainages, as you can see here, as well as the ridges in between them, which showed up in white.

Here is an area south of Corvallis, Oregon where two streams come together amongst farmland. I have highlighted the property divisions in red, where we see roads and fence lines on a grid. But look at the natural drainage pattern that transcends the property grid. The natural drainage pattern and property grid have no correspondence.

Here's another property that I did some design work for south of Corvallis. The property is outlined in yellow, and the natural drainage patterns of the surrounding area are outlined in blue. There is a small creek running through the property, and the area appearing in red is the watershed for that creek. This property is surrounded by conventional agriculture, so when chemical fertilizers and pesticides are applied to that area in red, it can flow downstream into the design site, along with eroding soils. This is an important watershed for this farm to be aware of, because their water quality depends on it.

Remember that we are answering the question "Where am I?" So where are you located within the watershed? What is upstream and downstream of your location? How does this affect you and how do you affect others? These are foundational questions to ask and answer before we ever get to doing a Permaculture design, and this information will be the basis on which our design choices are made.

Assessing your watershed in the urban environment can be incredibly challenging, because the landscape has been so altered by the grid. Look at this image of San Francisco, California. You can see how the grid is plopped down over undulating hilly terrain. Creeks are put underground with pipes and culverts, and the natural hydrological patterns are completely interrupted. Roads become the new waterways, funneling water down hills at speeds and angles, which dehydrates the land underneath. The water used to soak its way down into streams and aquifers. Now in urban areas it is channeled into the nearest river or ocean, without the benefits of a natural water cycle.

We can't rearrange the whole grid now that it's been put down, so often in cities, the main job of the Permaculture designer is retrofitting the landscape to absorb water where it can, and restore natural patterns in bits and pieces.

In Permaculture, we are restoring natural patterns to support ecologies, which in turn support our own systems of sustenance like food and water. In a bit we will look more into the connection between our own survival and the health of the watershed.