

Coast Range Association

Special to the Upper Left Edge

◆ Start ◆ with the Soil

Watersheds & Forestry



The beginning of an official process between the City of Cannon Beach and Hanson Natural Resources, owner of most of the Ecola watershed, to discuss protecting the watershed, has more significance than people realize. The city is interested in protecting its water quality and quantity along with its watershed. I believe city officials also have a real concern for the ecological health of the basin.

Just getting this far has been a major accomplishment. We all owe our thanks to Cannon Beach residents Paul Visher and Frank Little for initiating and fostering the dialogue. Mayor Schwab and City Manager John Williams have also played important roles in the process. Hanson (known in the county as Cavanham) must be given credit for its part. Recently Hanson appointed a new local manager who seems more conciliatory over stewardship issues.

Overall, Hanson appears to be no better or worse than other Coast Range industrial forest owners. They follow a forestry tied to the bottom line. So great is the gulf between ecosystem advocacy organizations like the Coast Range Association and industrial foresters that we almost never speak to each other. Perhaps valuable opportunity has been lost.

Those who have heard me speak on the issue of industrial forestry, or have seen the book *Clearcut*, know the depth of our disagreement over the timber industry's land management practices. Private property rights are not the issue. The issue, as we see it, is responsible ownership that will pass on to future generations the resources we hold as common: the soils, wildlife and forest health. The Hanson Company is but a temporary owner of values that are held in public trust.

As can be seen by the content of this insert section, we place a premium on the soil. The connection between abundant rainfall, great forests, salmon and river health all comes together in the soil. The forest's great vitality and productivity is located in the soil. Scientists are now beginning to understand how the decline of salmon and loss of river health is driven by soil disturbance due to logging related activities.

We have all seen the crystal clear waters flowing from intact forests and the chocolate brown rivers of logged landscapes. Intuitively, we know they are connected. Robert Ziemer's article on steep-land erosion is a must read for those wishing to understand the complex relation of logging to ruined river systems. After a century of coho salmon decline, most of it due to freshwater habitat loss, the final blow might very well come from ocean conditions and overfishing. But the timber industry is the main culprit in the salmon's decline.

The long term recovery of salmon will only happen when we practice a new forestry in our coastal basins. The new forestry will have different incentives and regulations for small woodlot owners than for large owners. Small woodlot owners need not suffer short term economic loss. False fears raised by the wise use movement are being fanned to protect the powerful interests of the few.

I want to thank to Billy Hults for allowing us to place this special section in the September issue of the Upper Left Edge. I hope it is read and enjoyed by many in the community. On a final note, I would like to thank Shelley Majors of Cannon Beach for all the work she has done in the past year. This fall she will be leaving Cannon Beach to attend OSU. Without her help and consistent effort the Association's effectiveness in the north coast would have been greatly diminished. Thank you Shelley and good luck at the university!

Sincerely,

Chuck Willer

The following article is from a talk by Mike Furniss, entitled *The Importance of Topsoil*. Mike delivered this talk at the Western Forest Conference in Ashland, OR this past February. Mike Furniss is a hydrologist with the Six Rivers National Forest in Eureka, CA.

Topsoil is the balance wheel of the ecosystem

In temperate forests most of the nutrients and organic matter are in the topsoil. The topsoil is like the flywheel that keeps the system moving. Recycling is a crucial function in the ecosystem, and topsoil is where most all that happens.

Think of topsoil as a reservoir

Every watershed, whether it has a dam or not, has a large reservoir, and that is because soil has a lot of empty space. In a typical foot of forest soil, the solid particles only take up about 43% of the space. The rest of that, when it rains, fills up with water and most of it does. Gravity water (28% of soil volume) is that part that drains out through the soil and into the streams and rivers. That's what gets the rivers through the summer, and everything in the rivers that depends on water. The capillary water (about 29% of soil volume) is that which is held by the soil against gravity. It will never drain out. That's what gets the plants through the summer.

Think of topsoil as the watershed surfaces.

When we think of land, too often we just think of the surface and the vegetation. But the vast majority of the surfaces in a watershed are in the soil. This is basic soil science. If you've taken a soils class, you've probably heard that the little bit of soil in the palm of your hand has acres of surface area. So think of topsoil as surfaces of the watershed.

Topsoil is headwaters.

What is the source of the river? Where do they first start? Well, there is no answer to that because the headwaters are the soil surface. The soil pores are the smallest streams. That's where the rain enters the watershed, and the vast majority of the pathways that the water must follow through the watershed is moving through these soil pores. They are hidden from our view, but they don't have to be hidden from our imagination. So topsoil is a headwaters.

Think of topsoil as old-growth

Most people, when you say old-growth, think about big old trees. They are old compared to how long we live, but not old compared to the topsoils, the biological systems that bring them forth. If you accept the idea that soils are very old, you may also conclude that if we lose the topsoil, the time that it takes to replace it is very long. You might think of a roadcut as a topsoil stump. To replace an old-growth topsoil may take something on the order of 50,000 years.

We can think of topsoil as capital

It is easy for us to do; we are living in a capitalist country. The trees and crops and forage and wildlife habitats are the profits. And of course the cardinal rule of capitalism is not to spend the capital. It is a good rule to even put some of the profits back into the capital account. Those that do spend their capital are guaranteed to lose their enterprise. Soil is capital.

We can think of topsoil as tissue

It is like a living tissue, and it kind of looks like an organism turned inside out. It has bones, there is mineral fraction of the soil with rock and sand and silts and clays and whatnot. This forms a skeletal system. And there is living matter everywhere, zillions of creatures that live everywhere in topsoil, thickly interacting. Vast numbers and great diversity. Far and away the greatest diversity that you will find in terms of numbers of species and interactions in an old-growth forest environment.

Topsoils respire, as all the organisms in the soil respire. The whole soil breathes. Energy flows in many pathways. The water in the topsoil is the blood. The soil pores are capillaries that feed into larger and larger channels and then into streams and rivers, which are like the arteries, which carry the blood to mother ocean. We can think about fish as living in the arteries in the organism.

On people

I would just like to wrap up with talking about people. There are lots of diverse views about the forest. When we try to come to agreements on things, I think it can be very valuable if we start with values that we all share. I think the value of the topsoil is a good place to start.