

Terra Bite 13: Under All is the Water

“Good stewardship” means taking action steps to hold the runoff and protect the waters

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When we choose to own a thin slice of Cape Cod real estate we are not merely accepting stewardship of the home but also for the land; and most critically, the water upon which it rests. While we may not all have waterview, we all own waterfront; the water of our aquifer that lies just below our feet. But the choice is not whether we are stewards; the choice is whether we will be good ones or bad ones. And to be frank, in these times of great ecological challenge, if we choose to be indifferent, we are choosing to be the latter.

Since the 1960s, global temperatures have steadily risen ½ degree F per decade. Hardly noticeable. But that has added up so that we are now 3 degrees warmer than we were in the 70s. When we used to enjoy an 8” February snow, we are now terrorized by a 1” February rain; and our dormant landscapes can’t hold it. As a result, all that nutrient-laden water and soil slams into our waterways. And it is we who are responsible, by law, for the stormwater that leaves our property. Since we can’t change the climate over our heads we must act now to change the climate below our feet; by learning to guide the runoff water to behave as if it were slowly melting snow.

Under all is the water. It is what drives our very lives and livelihoods on this fragile Cape. Our collective and individual missions must be to keep the water blue. We can do that by turning the destructive winter runoff that flows over the soil into nourishing, winter “walkoff” that flows through the soil.

The challenges are many, the time is now, and the actions are small, beautiful, cheap, and ancient. They are actions that all we good stewards can do. It simply takes a bit of extra work; to take action to watch and learn how to use the brown to allow the soil to hold the water which will keep the land green, and the water blue. While under all is the water, the answer lies in the soil, leaves and wood of the surface. And the simple first step we can all take is to learn how to create a PRB, a permeable reactive barrier, underneath our downspouts. Seems too small to make a difference, but I assure you it is not.

Hold an apple in your hand and imagine it is the earth. We are holding the answers, and they are simple and accessible to all: gravity, subsoil moisture recharge, microbial activity and photosynthesis. This is our apple, our earth; our little blue planet, swirling in space. Blue because 75% is water. But of all that, a mere 3% is fresh, and half of that is locked in ice. The remaining quarter is the land of which 75% is covered in ice, dessert, city buildings, highways and country roads. Now peel the skin from that tiny remnant, the size of your fingernail. It is that thin sliver, which is the vital few meters of the land that we actually have access to within our own landscapes, farms, highway medians and city parks. It is not

much but it's all we've got across the globe. This is why what you do at your downspouts, hillside and driveway matters! Are you a good steward who wants to learn how to be a great one?

It is that mere thumbnail sliver within which we can act; where we choose to take the simple steps that allow the runoff from our roofs, lawns and roadways to slowly sink and spread through the soil, rich in organic matter, where it can be purified and saved for those times when the rain does not fall. We can all learn how to begin; how to turn runoff into walkoff; how to sing with the climate and dance with the weather.

We do this by creating a carbon-rich barrier that allows water to permeate, be held purified on its slow journey to the aquifer. We create that permeable reactive barrier as part of a downspout keyhole garden and later as a hillside terrace. Carbon is the basic building block of healthy soil. It binds free flowing nitrate; it hosts fungal mycelium that grasp excess phosphate and detoxify road runoff; and, it is the essential strata within the forested fringe vital for wildlife and pollinator habitat. Carbon is the stuff that feeds, heals and purifies dormant season runoff while in turn mitigating summer drought and winter flood. It is the simple answer to our complex problem. And its right at our fingertips.

And all you need is a shovel to dig a small, well-placed hole and fill it with gravel, and surround the hole with a garden bed of soil deeply infused with old leaves and wood chips. It can be planted with native groundcover and flowers. Water that used to run will now soak away from the foundation through the carbon rich soil of a robust, but tiny garden. It is from this small success, seen every time it rains, that we can then begin to expand; to accept the challenge of the hills and roads; in much the same way.

As good stewards of our tiny slice of the apple, we can choose to act now to slow the runoff, to guide it through stone and healthy soil brimming with carbon. The answer lies in the leaves for under all is the water. It is our job to simply put all the pieces together to hold that nutrient-laden water close to our homes where it will serve to enrich our landscape rather than poison our precious fresh water lakes, bays and harbors. Under all is the water. It is up to us to act, not just talk, to protect it.



Two runoff capturing keyholes surrounded by deep, carbon-rich PRBs planted with flowering perennial groundcovers that will provide 'soft landings' for sun, rain, runoff, birds, bees... and your eyes. Visitors Welcome.