

## LETTING NATURE DO IT FOR YOU

Toby Hemenway, author of *Gaia's Garden: A Guide to Home-Scale Permaculture*, (314 pp, Chelsea Green, 2009), wants us to create yards and gardens as nearly like wild forests as possible -- because those need zero care. Everything needed to sustain life, cycles endlessly there. The only inputs are air, sunlight and water. Imitate nature and you can sit back and enjoy the beauty and the bounty, at home with the earth goddess Gaia.

What's nature up to, then? She's trying, everywhere, always, to become as mature as possible given the local conditions – maturity being strikingly different in, say, oak chaparral in California and rain forests in the Pacific Northwest. In a typical sequence, opportunist annuals move onto bare ground; those annuals eventually make way for taller perennials, then shrubs, and finally trees, in an inexorable succession. In contrast, humans too often try to maintain landscapes in permanent youth or adolescence. Nature's "lawns" are prairies, or savannas, kept from maturing by low rainfall, heavy grazing and frequent fires – none of which we provide.

A mature landscape maintains itself through the diversity of its mutually supporting species, each with multiple functions, constantly renewing and recycling nutrients and retaining water naturally. It can "be beautiful . . . shelter wildlife, feed people and animals, purify the air and water, store carbon and be an asset to Earth" – an ideal for us to emulate.

Most of the book tells us in detail how to do this.

Let's start with the soil. Grade, plow or till at the beginning if you must, to get what you want, perhaps a branching, spiral or network pattern – whatever the site suggests to let wind and water flow most naturally – but after that let mulching and cover crops do the work. Tilling introduces oxygen and vastly increases surface area, which fuels a frenzy of soil life – but depletes the soil if repeated. One tilling burns more calories than a year of vegetable yields.

Hemenway urges mulching – either sheet, using up to a foot of material over cardboard or newspaper, or living mulches – rather than composting, which he finds just too much work. Especially on weed-infested ground, sheet mulching suppresses weeds, helps retain moisture, and enriches the soil; also it's possible to plant directly into the mulch. Cover crops, including nitrogen-fixing clovers, can work nutrients deep into the soil. And within it are the soil's organisms, "plant and soil microbes which are miners, sluicing down rocks with caustic substances that carve away precious life-supporting ores." Hemenway concludes that "with nutrient-accumulating plants in the garden, the task of spreading fertilizer will dwindle to almost nothing."

The best place to store water, Hemenway says, is in the ground. Water introduced to a landscape covered with plants or mulch tends to linger. In dry-summer areas like Redding, ditches filled with woody and grassy debris (called *swales*) and backed by berms also trap and hold water, as do shaded areas. Since most of the earth's fresh water is inaccessible, locked in ice or deep in the ground, the 0.375 percent available on the surface is precious.

Diverting flows from sinks, tubs and laundry (greywater) onto the roots of landscape plants is another water saver. One pattern sends it into a tiny wetland, then into a succession of tiny ponds, and finally into a bigger one, to create a water feature. Greywater can provide 100 gallons a day – water otherwise flushed to the sewer.

If you struggle, as I do, to keep plants alive on our triple-digit summer days, you'll find the book's advice for creating microclimates intriguing. Starting with the edges of a site, plant tall-growing, drought-tolerant trees; in their shade add shorter trees and shrubs, fruit bearing or ornamental, and, toward the center, protected from harsh sun and wind, smaller bushes, flowers, and vegetables, themselves interspersed with shading plants as necessary – a human-created oasis.

Nature combines plants in mutually supportive guilds – our oak chaparral is an example – which Hemenway suggests we should imitate, using everything from simple combinations like nitrogen-hungry fruit trees and nitrogen-fixing clovers, to more complex polycultures. Nature abhors a monoculture; she's prolific, carefully mixing sizes, families, species, early and late maturers, fast and slow growers. And so should we, to achieve plant succession, long harvest, shade, and avoid light and root competition. Such a garden should demand very little beyond water and someone to prune and harvest it.

But which plants to use? Hemenway suggests the “shotgun method: Plant everything under the sun.” Plant whatever provides the services you want – fruit-bearing, nitrogen-fixing, pest-repelling, shade-providing – whether native or exotic, as long as they support each other.

He even has a few good words for exotic species. “You could fill every yard and city park with native plants and not even begin to stanch the loss of native species and habitats.” The areas are just too fragmented, too small. Anyway, thanks in part to birds carrying seeds in their guts and the mud on their feet, “the planet has been awash in surging, swarming species movement since life began. . . . That it is not one great homogeneous tangled weed lot tells us intact ecosystems are very difficult to invade.” Furthermore, exotics, he says, may naturalize within a decade, and often bring with them their own insects. “Given a welcoming environment, exotic insects, like exotic plants, eventually become part of their new ecosystem.” One of Hemenway's key models is the vacant lot, though without the frowziness.

*Gaia's Garden* will not be for everyone, especially those who think nature's there to be tamed. Not everyone though, will want a food forest or wetland for a yard. (I notice, for instance, that Hemenway doesn't mention the critters that wiped out my black grapes while I was on vacation, letting nature take its course.) But there's much useful detail for those willing to be nature's pupils. Hemenway believes, for instance, that “our own yards can allow us to reduce our incessant pressure on the planet's health.”

As one scholar says, “Perhaps the ancient Greek conviction that Nature is a moral being, suffering under human ignorance, is one that the return of Gaia to our language will help us to remember.”

May your gardens go wild!

-- Bill Keep