

# Permaculture and Horticulture: *Gardening with the Future in Mind*

by Dale Hendricks

**P**ERMACULTURE HAS BEEN AROUND since the late '70s and has been growing, changing, and adapting. Its name is a combination of the words permanent and agriculture. It was conceived as a science- and observation-based system for designing restorative or beyond sustainable human habitats. As it is about how we live, eat, interact, garden, and provide shelter for ourselves, it's been called "revolution disguised as gardening."

It is often defined as an ethically based design system working to build productive, diverse, and resilient habitats for humans that are in harmony with all of creation. Permaculture (sometimes called "Future Care") has three core ethics: Earth Care, People Care, and Fair Share.

## **Nuts and Bolts**

**Earth Care** is, as much as possible, always learning and seeking to be completely renewable, reusing all we can, and operating as organically and restoratively as possible. It means building soils; learning and sharing about building a low carbon, high joy world; and enjoying our roles as respectful, aware, and dazzled cocreators here on, in, and with the living earth.



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The author making biochar while cooking at home.

**People Care** starts with taking responsibility for and best care for us and others. It may look like leading with love, awareness, empathy, and respect rather than our unaware fears, expectations, privilege, and insecurities. It's also designing lives, businesses, and relationships in such a way as

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"Perhaps we seek to recreate the Garden of Eden, and why not? We believe that a low energy, high yield agriculture is a possible aim for the whole world, and that it needs only human energy and intellect to achieve this."

—Bill Mollison and David Holmgren in *Permaculture One*, 1978.

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to fully respect and bring out the best in everyone.

**Fair Share** can be seen as frugality, modesty, and simplicity—using only what you need, living lower on the consumption chain, restoring rather than extracting, doing all we can for those with less, as well as for future generations

and the rest of creation. It might include making sure that classes and workshops are respectful of, available to, and thoughtful of all folks.

What is also good, as well as tricky, about permaculture is there's no central command, no hierarchical organization or city hall that decides what these terms mean. Each person is free to define them for his or herself. Observation and critical thinking are deeply imbedded in this culture, something uncommon in today's mainstream media-rich society.

An important part of this is continuous learning or skill sharing. There are lots of workshops offered, from mushroom-growing outdoors, ethical foraging, natural building,



photo © Dale Hendricks

Pawpaw fruits landing on a cushion of native nitrogen-fixing groundcovers, *Amphicarpaea bracteata* and *Chrysogonum virginianum*.

biogas<sup>1</sup>, biochar<sup>2</sup>, and food forests to growing beyond organic nutrient-dense foods. A network of folks, some in other overlapping fields, some explicitly permaculture-oriented, have decided that nothing is stopping them (I suppose I should say “us!”) from moving ahead and working to build the kind of world we want to live in.

Gradually we are beginning to see lots of people, who are not waiting for the government or the marketplace to save us, jumping in and working to foster an interconnected, loosely knit, localized and worldwide network to create the beginnings of a hopeful and resilient culture. In this way the moniker “radical empowerment” would seem to fit

<sup>1</sup>Biogas—a natural, gas-like fuel, often used for cooking, produced by anaerobic (without oxygen or very low oxygen) digestion of food wastes or manures. Visit [solarcities.blogspot.com/2012/04/pushing-envelope-for-providing-power.html](http://solarcities.blogspot.com/2012/04/pushing-envelope-for-providing-power.html) for more information.

<sup>2</sup>Biochar—charcoal purpose-made for adding to soils. It holds nutrients and water, provides habitat for beneficial soil fungal and microbial life, and lasts for a very long time in soils. For more information, visit [www.biochar-journal.org/en](http://www.biochar-journal.org/en) or [articles.philly.com/2015-01-19/news/58204783\\_1\\_soil-carbon-public-garden-landscapes](http://articles.philly.com/2015-01-19/news/58204783_1_soil-carbon-public-garden-landscapes)

There are a dozen or perhaps up to twenty permaculture principles. Although we can't get to them all here, “use small and slow solutions” is worth a mention. It gets tricky as we see a myriad of seemingly intractable problems all around us; many think the only way systemic change will happen is if lots and lots of people do it in their own unique and creative ways.

### **So how does this impact my gardening style and choices? What are some techniques and examples?**

Here's what I did, and please remember that your bite of the apple will surely look and be quite different. I began with the plants I already had in the landscape—pawpaws, *Asimina triloba*, in this case. I thought they'd be happier in a diverse polyculture. It turns out that plants are not just “takers” of soils and nutrients but both givers and takers, and that “guilds” (supportive diverse designed plantings) can help plants grow healthier, provide nutrients, and supply numerous other benefits. We started with 10-year-old mature trees and in their shady understory settings, we added ground bean, *Amphicarpaea bracteata*, a native nitrogen-fixing groundcover; ramp, *Allium tricoccum*, for later seed or edible harvestings; *Chrysogonum virginianum* for beauty and attracting native pollinators; toothwort or native wasabi, *Cardamine diphylla* (syn. *Dentaria diphylla*); giant

Solomon's seal, *Polygonatum biflorum*; and others. This planting approach has other benefits.

Since I'm crazy about pawpaws, I planted a new row nearby in full sun, in an area converted from lawn. I felt some soil building was in order. Compost, enriched with biochar, as well as sea minerals, was added, next with a layer of cardboard, topped with 2" or so of well rotted woodchips. Since this area was sunny, I supplemented the earlier successional plantings with a completely different suite of plants: *Baptisia australis* and cultivars for beauty and nitrogen fixing; comfrey, *Symphytum* sp., for soil building and compost enhancing, nutrient rich tea making, and income-producing divisions; lemon balm, *Melissa officinalis*, for pollinators; perennial vegetables such as Turkish rocket, *Bunias orientalis*; everbearing raspberries, *Rubus idaeus*; garlic *Allium sativum*; and several others. These have become low maintenance and beautiful (at least to my eye!) gardens that produce much of their own nutrition, build soil carbon, and provide fruit, seeds, and divisions for the micro-enterprise nursery. In addition

### **Books of Relevance**

*Cows Save the Planet: And Other Improbable Ways of Restoring Soil to Heal the Earth*, Judith D. Schwartz

*Gaia's Garden*, Toby Hemenway  
*Permaculture: Principles and Pathways Beyond Sustainability*, David Holmgren

*The Biochar Solution*, Albert Bates  
*Edible Forest Gardens*, Dave Jacke and Eric Toensmeier

they serve as a laboratory and demonstration for continuing learning and plant selection and a venue for folks to visit, teach, learn, and browse. What's not to love?

Fifty years ago our twelve acres was an overgrazed and abandoned farm. For the first few years, the focus was on helping the deciduous mixed forest to return. Recently we've begun a bit of rewilding—adding appropriate plants and seeds and growing new populations of plants to the forest and edges. Ramp, *Allium tricoccum*, seeds, gathered in autumn 2010, now have yielded thousands of small and happy plants. Watercress, *Nasturtium officinale*, has spread from one small patch to two other seeps, Virginia bluebell, *Mertensia virginica*, (edible leaves, beauty, and future seeds) is germinating happily, American and Chinese chestnuts and hybrids are growing in bright clearings



photo ©Dale Hendricks

Native ramps, *Allium tricoccum*, happily recolonizing four years after seed scattering, with trout lily, *Erythronium americanum*.

A view to permaculture also offers the gardener a bounty of new and refreshing ways to look at plants and human/ecosystem interactions: Is that weed a nitrogen fixer? Why not make garlic mustard pesto? Maybe

when I dig out the Japanese knotweed roots, I could take them to my buddy for healing tinctures? Can I border the raised beds with logs and plug them with edible mushrooms?



photo ©Mark C. Psoras

Carrots grown in high carbon soil in Landenberg, PA.

The importance of soils and the pressing need to spread soil-building, carbon-friendly techniques and knowledge cannot be overemphasized. Many are aware of the frightening economic, geopolitical, and environmental implications posed by our current mainstream agricultural practices. At the moment we use 10-15 calories of fossil fuel for every calorie of food produced, while at the same time oxidizing our topsoil, thereby contributing mightily to the overload of atmospheric carbon. Some brilliant and holistically oriented scientists are illuminating the many living interrelationships that well managed diverse gardens, pastures, and plantings can use to rapidly build soils, improve water holding capacity, tilth, and productivity (see: [www.amazingcarbon.com/PDF/Jones\\_ACRES\\_USA%20%28March2015%29.pdf](http://www.amazingcarbon.com/PDF/Jones_ACRES_USA%20%28March2015%29.pdf)). With this in mind, many stress the importance of reducing tillage and

bare soils while adding as many perennial crops to our gardens and diets as possible.

## Gardening and Integration

The native plant and sustainable landscape movements have been most successful in broadening the scope of what we care about as gardeners. These plants, projects, and gardens are beautiful and beneficial for wildlife; they improve water quality and are unique to their bioregions. There's still quite a way to go on our journey—I can picture us moving past the current “leave no trace, stay out of nature, mankind has always been so destructive” worldview.

An integrated approach based on observation and applied ethics might help point us to a spot where we can see that it's possible for us to become native here, to live in ways that nourish, reinvigorate, and enhance nature and humans together.



**Dale Hendricks** has been growing and propagating plants professionally since 1975. In 1988, he cofounded North Creek Nurseries, Inc in order to propagate and grow perennials and grasses with an emphasis on natives and garden selections of natives. He served on the founding board of the Sustainable Business Network of Greater Philadelphia and as cochair from 2004–2007. He also served on the founding Steering Committee of, and remains active with, the Native Plants in the Landscape Conference at Millersville University, June 4–6, 2015, [www.millersvillenativeplants.org](http://www.millersvillenativeplants.org).

In 2008, he founded Green Light Plants, LLC to consult on carbon friendly and fecund landscapes and to grow native, woodland, and permaculture plants renewably, organically, and joyfully. He has been a permaculture advocate since 2010 and enjoys life and lives with his family, gardens, propagates plants, and makes biochar whenever he can in Landenberg, PA.

Ed Note: For a full-color version of this article, go to the HPS/MAG web site, [www.hardyplant.org](http://www.hardyplant.org).