

The Natural Farmer

Book Reviews, Spring 2002

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The Overstory Book: Cultivating Connections with Trees

edited by Craig R. Elevitch and Kim W. Wilkinson

Permanent Agriculture Resources, Hawaii, June, 2001

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also available on searchable CD for \$16.95 postpaid, or both for \$49.95 plus \$6.50 shipping

reviewed by Jack Kittredge

Craig Elevitch and Kim Wilkinson are tireless advocates for understanding the importance of trees on our globe. Craig is an engineer with experience in tropical agroforestry and forest management. Kim is a permaculture consultant and ecologist who manages a tree nursery. Together they have collected from others and co-written themselves a number of short articles on various aspects of agroforestry. These have been published on the internet in a free Email journal at www.overstory.org. Many of these have been republished in this book (although not all – I note that a very thoughtful piece by Bill Mollison, Permaculture's founder, is not in the print version although it is [on the internet](#)).

The book is organized by concept areas concerning trees. Each area contains several short pieces as chapters. Areas cover traditional knowledge, micro-organisms, animal connections, protecting land, saving water and soil, restoring land, growing trees, non-timber forest products, useful species, starting in on agroforestry, planting trees, designing with nature, income from agroforestry, human connections, and resources for more information. Each piece has a relatively short expository section of 3 to 8 pages, then gives credits and further references both in print and on the web.

One problem with this book for NOFA readers is that many of the pieces are more relevant to tropical or arid regions. A number are general purpose and of relevance anywhere, and a few relate specifically to temperate regions, but over a third are specific to regions where our conditions of moisture and temperature just do not exist.

The quality of the chapters is somewhat uneven. Some, like that of P. K. Ramachandran Nair on Tropical Homegardens, Alex Shigo on The Rhizosphere, or Michael Pease on Vegetative Erosion

Barriers are fairly technical and detailed. Others, like the USDA pieces on Buffers and Silvopasture, are quite general. In virtually all, however, there are some good insights to better management of woodland areas.

A particular favorite of mine was the chapter by Alex Shigo entitled "Twelve Tree Myths". The myths, and my parenthetical summaries of Shigo's much longer explanation, are:

1. **Forests are groups of trees.** (No, they are highly ordered connections of many living communities with trees – the connections with other life forms are essential.)
2. **Nature is balanced.** (No, it vibrates in a continuing state of dynamic equilibrium.)
3. **Wood is dead.** (No, wood is a highly ordered arrangement of living, dying and dead cells. There are more living cells in sapwood than dead cells.)
4. **Photosynthesis is most active during bright, hot days over 100°F.** (No, Photosynthesis decreases rapidly as temperatures begin to exceed 100°F.)
5. **Water causes rot.** (No, microorganisms cause rot. Too much or too little water will stop rot.)
6. **Roots are the most important part of a tree.** (No, there is a continuing dynamic equilibrium between roots and crown.)
7. **Ants speed up the decay process.** (No, ants actually slow the decay process. Ants live in the tree and eat elsewhere.)
8. **All insects and fungi that live on, in, and about trees are harmful.** (No, less than one percent of the insects and fungi that live on, in, and about trees are harmful.)
9. **A healthy tree is a tree free of infections.** (No, a tree can be very healthy and still have thousands of walled off or compartmentalized infections.)
10. **All wood-product problems start after the tree is cut.** (No, the patterns of decay in products usually follow the patterns set in the living tree.)
11. **Fertilizer is tree food.** (No, fertilizers provide elements essential for growth, but trees are able to trap the sun for the energy they need.)
12. **Anybody can plant a tree correctly!** (No, incorrect planting procedures have caused a multitude of tree problems worldwide.)

If you like trees and enjoy learning about them, I have no doubt that you will enjoy this book. It has numerous illustrations (although they are much larger and more effective on the CD than in the book). It makes ideal bedtime reading for those long summer days when a few pages at a time is all you can manage!

The New American Farmer: Profiles of Agricultural Innovation

Editor: Valerie Berton (no real author, different authors wrote different profiles)

Publisher: USDA's Sustainable Agriculture Research and Education program

Sustainable Agriculture Publications

210 Hills Building, University of Vermont, VT

05405-0082

Paperback, 159 pages, \$10, Published in 2001

Book available for free at www.sare.org, or CD-ROM available for \$5.

Reviewed by Don Franczyk

USDA's [SARE \(Sustainable Agriculture Research and Education\) Program](#) has published a collection of profiles detailing sustainable agriculture practices on forty-eight farms across the United States. The book goes beyond simply profiling the practices of these farmers to discuss the effect that the sustainable practices have on broader financial, community, and environmental goals. SARE's aim in publishing the book is to show representative samples of what they call the "New American Farmer", farmers who are farming using sustainable practices and making it work.

The book is organized into four regional sections: the North Central, the Northeast, the Southern, and the Western. There are 11-14 profiles for each region with a total of 48 profiles in all. A pool of writers wrote the profiles but the profiles themselves were written to a standard template. Each farm profile addresses a standard topic list which includes: Problems Addressed, Background, Focal Point of Operation, Economics and Profitability, Environmental Benefits, Community and Quality of Life Benefits, Transition Advice, and The Future. At the end of each profile is the address and contact information for the farmer(s) profiled.

There is an impressive diversity of operations profiled in this book. Operations range in size from a 3 acre nursery in Massachusetts to a 3300 acre sugar cane operation in Louisiana. There is a healthy mix of livestock, rowcrop, and specialty crop growers profiled. Crops profiled include vegetables, cotton, grain, bananas, and citrus. Some of the growers profiled are organic, and some are not. Management practices that are repeated throughout the book include cover cropping, rotational grazing, pastured poultry, and elimination or reduction in the use of pesticides and herbicides.

Marketing of products grown on the farm is represented strongly in the profiles. The farms profiled use a variety of marketing techniques but for the most part are direct marketing their products. The profiles show a healthy mix of Community Supported Agriculture, Grower Cooperatives, and creation of value added products.

The strength and weakness of the book lies in the profiles. The quality of the profiles is uneven. At times reading a profile puts you right on the farm and you get a feeling that you know and understand the operation. Other profiles keep you at a distance and you never feel any familiarity with the operation. The selection process for the operations may have overemphasized diversity and variety to the point that it is debatable whether all of the forty eight operations are sustainable. Some of the larger operations especially seem to have been included in order to demonstrate that sustainability is achievable no matter what the scale, yet in reading the large operation's profiles I was not convinced that they were truly sustainable. Also, because there is such a range in the size of operations, only a fraction of the profiles are of use to any particular grower. Reading about sustainable banana growing practices was interesting, but nothing in that profile spoke to me as a small vegetable and livestock producer.

Regardless of their geographical region, the profiles of the small and mid size farmers seemed most useful to Northeast growers. Even with climate and crop production differences, the problems of small farmers anywhere in the United States seemed most translatable to the problems faced by farmers in the Northeast. Many of the small grower profiles sparked ideas of practices I want to implement and change on my own farm. The small grower profiles showed that small farmers could compete in the marketplace, and that sustainable agriculture practices and financial sustainability were not mutually exclusive. Because of the large number of operations profiled, and their overall diversity, there will be something of value in this book for just about any grower, there just might not be as much of it as he/she would like.

SARE has chosen to make the book [available for free on its website](#) in PDF format. Searches can be conducted on topics of interest in the profiles on the SARE website, and the whole book or individual profiles can be downloaded and printed out. Hardcopies of the book and CD-ROM copies of the book are also available for \$10 and \$5 respectively.

Weedless Gardening

by Lee Reich

Workman Publishing, NY

708 Broadway, NY, NY 10003

200 pages \$8.95 ISBN 0-7611-1696-6

reviewed by Michael O'Bannon

Lee Reich Ph.D. is a garden writer and an avid gardener. He writes for Associated Press, his articles regularly appearing in the NY Times as well as Fine Gardening, Organic Gardening, and Horticulture magazines. He has worked in soil and plant research for the USDA and Cornell University.

In **Weedless Gardening**, Reich takes his gardening methods directly from nature, forgoing that annual drudgery of rototilling or forking the entire garden. His method for this is simply 1. Minimize soil disruption; soil turning actually increases weed seed germination by bringing buried dormant seeds to the surface. 2. Protect the soil surface; a covered surface smothers weed seedlings and protects soil from the sun's drying rays and wind/rain erosion. 3. Avoid soil compaction through permanently designating walkways and growing areas. 4. Use drip irrigation; This method of watering supplies water in the amount that the plants actually need it and in the place they need it, not wasted on the paths. The benefits of this Weedless Gardening method are it is better for the soil, the plants and the gardener's back.

Reich is familiar with the other writers that advocate a less labor-intensive manner of gardening. He briefly describes and dismisses such heroes of gardening/ farming as Ruth Stout, with her No-Work Garden Book; Masanobu Fukoka's One Straw Revolution; and Patricia Lanza, of Lasagna Gardening fame.

Reich describes in Chapter 2 the method he recommends for creating a new garden from lawn. This method entails nothing more elaborate than smothering the lawn (new garden site) with newspaper/cardboard, and then a thick application of organic mulch. This will kill the existing sod and begin the process for a healthy soil. Personal experience with this method convinced me long ago that this is by far the easiest way to start a new bed. Next we are told his methods for amending soils out of balance for the specific crops that will be grown, as well as how to detect and cure overly wet soils. This section includes a brief outlining of drainage tile installation.

Chapter 3's opening sentence states "Regular maintenance goes a long way in getting the Weedless Garden to almost care for itself". His own vegetable garden contains 2000 sq. ft. and requires less than 5 minutes per week to maintain its weed free status.

Other maintenance tips include when plants no longer are productive, i.e. beans no longer produce beans, do not just yank the plant out. Cut it out carefully, in order not to disrupt the soil. By not disrupting the soil he states that the next crop can immediately be sown or transplanted.

"Nature abhors uncovered ground and so should you" Reich states as he describes the benefits of mulching. Those are protecting the soil from erosion as well as feeding the soil as the mulch decomposes.

Next in this chapter he describes how cover crops can be used in the garden. One that interests me is a description of how June-bearing strawberries can be interplanted with a cover crop of oats. This crop will shade out weeds during the growing season; then it will flop over dead providing the mulch necessary for the strawberry to survive the winter.

A short description on personal techniques for weeding as well as useful tools for the task follows. Out of control weedy sections may require starting over with the newspaper and mulch, though.

Chapter 4 deals with requirements for fertilizing. Reich advocates applying nitrogen in the form of soybean meal anywhere heavy feeding plants grow, or in naturally poor soil. This he applies for all plants that he recommends applying once a year before laying out mulch of any kind.

Easy to read charts outline the NPK percentage of various organic fertilizers as well as common nutrient deficiency symptoms. The benefits of compost is discussed along with the secrets to buying good quality compost, or how to make ones own backyard compost pile.

In the next section Reich explains the basics of drip irrigation that is pinpointing the water to the exact spot the plants need it. He dispels the myth that "watering deeply and infrequently promotes deep rooting". He advocates "shallow watering and frequently" as the best way for plants to effectively use the water in the soil pores. This section was a bit too technical i.e. complicated for the beginning gardener, which is the audience I think this book is written for. An extensive description about pressure regulators, # of emitters, discharge rate per emitter worksheets for calculating minutes of watering per session, was just too much.

Chapter 5 talks about his views on garden layout, specifically bed width and how much space is wasted according to the amount of space dedicated to paths. Growing in wide beds allows for more plants, because more of the ground is devoted to plants, not pathways.

Again he writes of the need to leave the soil as intact as possible, even when harvesting root crops. Another aspect of garden layout described here is that of intercropping different plants together, both as a way of reducing insect pressure on the plants, and maximizing space.

Next is a description of how trellising is a method in which a gardener can grow more plants in a small space. Most gardeners think only of summer crops, that is peppers and tomatoes. However, succession planting is advocated as the way to spread out your garden harvest, i.e. planting spinach in the space before the tomatoes go in. The bounty of a spring and fall harvest are not to be missed, Reich writes. Lengthen your growing season through methods such as using cloches, wall o water, and row covers.

The rest of the chapter is about Reich's growing techniques for 40 of the most common vegetables along with a seed sowing chart. Throughout the book are lists of sources for various garden devices, seeds, and fertilizers.

There is a brief description about flower gardening and ground cover crops in meadows along with the joys of mowing with a scythe. Following that is a chapter on trees, shrubs, vines and fruit plants. Location is elaborated as the most important factor in predicting whether a plant will be productive or

not. Then come details about the planting hole, depth, to amend or not amend the soil. Tips and techniques for planting trees debunks some of the persistent myths about tree planting that have been around for decades. Watering tips and mulching options are explained.

Throughout the book, Reich maintains that the closer we as gardener mimic the methods that nature uses, the less we will fight her. By minimizing soil disruption and compaction, by keeping the ground covered with mulch, and with precision watering via drip irrigation, we will have less work in fighting weeds.

Gaia's Garden: A Guide to Home-scale Permaculture

by Toby Hemenway

Chelsea Green Press, 2001

\$24.95, paperback, 222 pages

Gaia's Garden: A Guide to Home-Scale Permaculture, is about turning a conventional, resource-intensive, tightly-controlled yard and garden with a few isolated species, into a productive, beautiful, self-supporting, ecologically dynamic blend of plants and animals.

Although this is definitely a book about organic gardening, what sets it apart from many other books about organic gardening is that Hemenway is educated in and committed to permaculture, a far-reaching approach to the design of human communities. In terms of gardening, permaculture suggests a heavy reliance on perennial plants, and a focus on the interactions between various plants and animals and their environment. The gardens that Hemenway describes include tree, shrub and herb layers, produce food, flowers, and wildlife habitat, are pleasant and welcoming places to spend time, and require little in the way of outside inputs. They also tend to alter the surrounding climate in whatever way the particular location requires - more heat, less heat, more water retention, better drainage, or less wind - and even create varying microclimates for different plants.

Hemenway's basic method is to emulate and work with nature. In nature, diversity creates stability; massive population outbreaks of any one species are generally prevented by preexisting predators and competitors. Similarly, in the gardens described in Hemenway's book, a carefully chosen diversity of plants creates complex miniature ecosystems that hold possible pests in check. In nature, fertility sufficient for growth generally comes from within the community. Similarly, Hemenway's "ecological gardens" rely on plants that fix nitrogen, draw minerals from the subsoil, or drop a heavy leaf litter to create fertility.

In a conventional garden, there are times and places where a lot of sunlight is not captured, and weeds tend to spring up to take advantage of the excess. In an ecological garden, multiple layers of perennial plants capture more sunlight and thus reduce weed problems. In this situation, nature's tendency to fill in space and capture all available sunlight becomes a benefit.

In permaculture, plants are selected partly on the basis of their interactions with other species. Hemenway advocates planting not one species, like an apple tree, but a miniature community of plants that help and serve each other at the same time that they help and serve humans. An apple tree can be planted with daffodils, comfrey, artichokes, yarrow, nasturtiums, dill, fennel, dandelions, chicory, clover, and fava beans. These other plants provide food and flowers, attract beneficial insects and birds,

keep out invasive grasses, create mulch, and accumulate nutrients. In permaculture, this group is called a "guild."

Each plant in a guild performs multiple functions, and each function is fulfilled by multiple plants. In the apple guild, for instance, clover fixes nitrogen, attracts pollinators, and creates mulch.

After giving a couple of examples of guilds, Hemenway provides a guide to creating your own guilds on your own land. There can be no recipes for guilds, because every piece of land and every person is different. The goal is to find out what guilds grow naturally in your area, and adapt them to fit your needs.

In recognition of our affection for certain annual vegetables, Hemenway also describes annual herbaceous polycultures that take advantage of interactions between plants in the same way the tree-centered guilds do. Again, these are not recipes but examples, and Hemenway follows the examples with principles for creating your own polyculture.

Also included in the book is a discussion of soil fertility, tips for catching and conserving water (which might not have seemed relevant to New England before the endless drought which began last spring), and an introduction to greywater recycling systems.

Hemenway grows lyrical at times in his admiration for natural ecosystems and for gardens that are based on natural ecosystems. He also tends to anthropomorphize. Soil organisms, he says, eat humus "grudgingly," and turning a compost pile involves "murdering millions" of microbes, "smashing their homes" and "bludgeoning them and their children."

I will immediately add that Hemenway himself sometimes turns compost piles, and he is generally a practical and forgiving writer who offers his readers lots of encouragement.

My only criticism of this intriguing book is that Hemenway's explanation of ecological principles is sometimes simplistic. In particular, his explanation of the edge effect does not take into account that some species (most famously the northern spotted owl) require large tracts of a single type of vegetation. Hemenway does not seem to recognize that a single-minded attempt to maximize edge will mean the disappearance of some species.

At the very end, Hemenway makes an intriguing reference to a garden "popping," which is the moment, after a few years of designing, planting, and tending the garden, when it suddenly begins to thrive. The necessary climatic modifications have begun and the interactions between plants are established, and the garden becomes far more productive and requires far less labor than it did in the early years. It is this persuasive promise that makes the whole attempt seem worthwhile.