

THE

# PERMACULTURE

# ACTIVIST

No. 42

\$6.00

## *Self-Reliance and Community Cooperation*

- *Holistic Politics*
- *Tools for Community*
- *Neighborhood Gardens*
- *Cooperative Economics*

... and more



# Self-Reliance and Community: Two Sides of the Same Coin

Toby Hemenway, guest editor

The meaning of words changes with time's passing, a phenomenon I've always watched with interest. It wasn't long ago that the ideal for back-to-the-land types was to be "self-sufficient." The phrase conjured up images of an off-the-grid house powered by solar, wind, or hydro technology, heated with a big Ashley airtight, and harboring an old floppy-fendered Chevy pickup that only rarely chugged to town for the odd tool or staple food. But our thinking, and the phrase's meaning, has evolved. "Self-sufficient" has slowly garnered the taint of beggar-thy-neighbor survivalism, an "I don't need anybody" isolation in which the individuals—usually rugged ones—believed they, living alone, were sufficing only with what they owned, made, and grew.

This turned out to be a lonely and dead-end road. As tool maven J. Baldwin points out in his article within, that nice solar panel uses technology that is underpinned by a whole civilization. The same applies to the Chevy truck and the wood stove. We can never escape being part of a human culture, and I hope we'd never want to.

We're not just technologically linked to humanity. Our social bonds are at least as important. A solar panel may require a slew of wage-earners to labor each day in a windowless industrial plant, breathing toxic metal dust amidst the noise and grime, and living just the life the self-sufficient abhor. That homey wood stove pumps out pollution, foisting emphysema and asthma upon your neighbors—how ever far away they live. And let's not even go into the social and environmental costs of the Chevy truck.

Hence the rise of the replacement term "self-reliant," which acknowledges that we choose to rely on ourselves as much as possible, but also implies that we aren't truly independent. John Schinnerer's article expands on this point, weighing the differences between dependence and *interdependence*, and introducing a new use of the term *sovereignty* that enlarges upon self-reliance.

This issue of *The Permaculture Activist* explores the link between self-reliance and community. The connection may not be obvious. Western society, with its cult-like worship of individualism, has—not surprisingly—fractured the bonds that build communities. Yet what advertisers exhort is not self-reliance, but a me-first, no-limits, aggressive egocentrism. True self-reliance isn't achieved by purchasing all the right tools, nor by clambering over the bodies of your colleagues. A self-reliant person respects and even cherishes the limits of the systems within which he or she lives, whether these limits be those of ecology, physical stamina, or the competence—or patience—of your friends and colleagues.

After watching many a community arise in enthusiasm and die in acrimony, or melt away simply because the members have changed interests, I'm convinced that to succeed, a community needs its participants to be self-reliant. By that I mean that each member must have several sets of skills that define a well-differentiated human being. The most obvious yet less important of these skills are those of livelihood: a training or proficiency that can be exchanged for other things of value and that complements the community's needs. But the crucial skills are more subtle: a spiritual or emotional maturity and depth that allows each person to work closely with others. This takes mindfulness of where your own issues and boundaries lie, and where those of others begin.

Many of the problems that divide communities have little to do with superficial, tangible needs like shelter or money, even when that seems to be the case. The rifts eventually erupt from deeper personal insecurities: fear of rejection, need for recognition, an accretion of too many unaddressed slights and resentments. When community meetings automatically fracture along familiar lines, you know that the real issues aren't being discussed. This is where tools for working in community can help.

Since saints and avatars are in short supply, and thus communities must be made of mere mortals, the first step for community building is to develop a set of techniques to help move through a crisis, to build trust. Tools like these are found in Tom Atlee's articles on co-intelligence, in Christopher Peck's piece on consensus building, in Joel Glanzberg's on the general core model, and in several other writings.

The long-term and much tougher solution is personal, spiritual, and emotional work. Teryani Riggs writes of Oregon's Lost Valley community's growth through Naka-Ima, a technique that allows people to connect more deeply. Vishu Magee describes the rewards in creativity and community from deep spiritual practice. Other articles in this issue show these principles in action: the effort of making communities function (more or less), the challenges their members face, and the joys and struggles of living in the human family. These, the invisible structures of a permanent culture, provide the foundation upon which our more tangible and familiar get-your-hands-dirty work must be built.

My thanks to Vishu Magee for the mandala art from his book *Archetype Design* that graces several pages of this magazine, and to Robin Clayfield and Skye for permission to reprint the playful drawings from their excellent workbook, *The Manual For Teaching Permaculture Creatively*. And of course, a thank-you to Peter Bane for letting me briefly take the reins of the *Activist* juggernaut.

## A Note from the Publisher

I HAVE BEEN ENJOYING the rare privilege, apparently accorded the editor of this magazine about once a decade, of stepping back from the job I usually perform to allow another permaculture journalist to blossom.

You are holding the fruit of a new collaboration in your hands. Toby Hemenway, whom regular readers will recognize as a steady contributor to *Permaculture Activist* for several years, has slipped gracefully into the editor's chair for this issue, freeing me up to build the house I've been struggling to complete for three years. The house still isn't done, though it's closing in fast—gaining walls, windows, and doors just ahead of winter's icy blast, but the issue's wrapped up. I think it's fair to report that both Toby and I have found the situation so satisfactory we're likely to repeat it.

If you've followed the *Activist's* career over the past few years, you'll appreciate how significant it is that we're on the verge of getting a permanent home. For in addition to the cottage that will house its publisher, this magazine stands to get a new office sometime next year, both buildings located at Earhaven Village in the Blue Ridge Mountains of North Carolina, and significantly, both village-built of local materials and powered off-grid. This is no mean accomplishment for a small-circulation journal without institutional backing.

Part of the building story appears elsewhere in this issue under my byline, as I report on the emergence of cooperative housing efforts at Earhaven. Another part remains to be told: The *Activist* will share office space at the Benchmark neighborhood common

*Publisher's Note continued on page 49*

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Mailing address for subscriptions, advertisements, materials for publication, and all correspondence is Post Office Box 1209, Black Mountain, NC 28711. Please see inside back cover for complete subscription information.

The publisher assumes no responsibility for unsolicited materials. Please send typescript or material on 3-1/2" diskette or via email to our address below. Manuscripts or artwork not accompanied by a stamped, self-addressed envelope will not be returned. Copy and artwork should be submitted two months prior to publication date.

An ad rate card is available upon request from:  
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Black Mountain, NC 28711  
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Cover photos courtesy of  
Arjuna da Silva & Peter Bane

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## Creating Holistic Politics

# Co-Intelligence and Community Self-Organization

Tom Atlee

*To our normal awareness a uranium rock is just a rock. But arrange its parts in a particular way, with the right processes, and it can blow up a city.*

*To our normal awareness a room filled with people is just a crowd. But arrange those people in the right way, with the right processes, and they can generate wisdom.*

*The experiment with human consciousness has reached a crisis: Will we design cultures that generate wisdom before our awesome physical powers destroy the laboratory, our world?*

*I invite you to consider "co-intelligence" as an antidote to blind human power, and a vital next step in our evolution.*

I'd been researching participatory forms of human community for years when I stumbled into permaculture in 1991. I was in Belize advising a nascent intentional community. Their organic farm nestled up against a rain forest. It turned out they weren't really interested in the sort of conscious, co-creative community I advocated. So I spent the remaining days before my flight home holed up with a few books from their library—among them, Bill Mollison's *Permaculture: A Practical Guide for a Sustainable Future* (a.k.a. *A Designers' Manual*). I realized that what I'd been trying to do with this little group of pioneers, they were already doing with their farm. I wondered if permaculture principles were perhaps easier to apply to gardens than to communities.

Permaculture soon became one of the guiding metaphors for my work—what I came to call "co-intelligence." Its spirit is captured in Mollison's evocative phrase: "Everything gardens," by which he means everything influences and is influenced by whatever and whoever is around it. Co-intelligence, then, is this dance of mutual gardening, of co-influence, of co-creativity.

I've been an activist all my life, so my primary interest was how *people garden people*: How they influence each other individually and collectively, especially through social systems. When people garden groups, organizations, communities, and societies, we call them "leaders." When citizens garden themselves collectively, we call that "democratic politics and governance." Occasionally such collective self-gardening dissolves into true self-organization, much like the ideal of permaculture, where ongoing design explorations seek ever more elegant synergies. In this article I'll share some principles and tools for doing more of that.

Mollison writes, "The role of beneficial authority is to return the function and responsibility to life and people. If successful, no further authority is needed. The role of successful design is to create a self-managed system." Co-intelligence involves forms of leadership that are in this spirit. In *participatory leadership* we, as leaders, are peers with the other co-creative organisms in the garden/community, as responsive as we are causative.

In *facilitative leadership* we arrange the designs, processes, and resource links needed for self-organization to emerge from within the garden/community. In *evocative leadership* we see the possibilities of the whole system and the gifts that each being has to offer that whole (and the gifts the whole has to offer each being). We motivate those beings to join into a living community where they can bring forth their fruit.

### The Co-Intelligent View

Intelligence, I propose, is the capacity of life to create and modify patterns in its search for what works and what satisfies it. We can observe intelligence as much in the highly-evolved patterns of forest eco-communities as in the worksheets of a college math student. Co-intelligence adds the idea that such patterning is mutual, multi-dimensional, holistic, and evolving. The usual idea of intelligence—individual rational intelligence—is part of the linear, fragmented, causational worldview. Co-intelligence is part of a fuller holistic, systemic, relational view of the world.

The political vision of co-intelligence was foreshadowed by John Dewey in a 1937 speech entitled "Democracy as a Way of Life": "The foundation of democracy is faith in . . . human intelligence and in the power of pooled and cooperative experience . . . to generate progressively the knowledge and wisdom needed to guide collective action. . . . [E]ach individual has something to contribute, whose value can be assessed only as [it] enters into the final pooled intelligence constituted by the contributions of all."

In 1982 Paul Hawken, James Ogilvy, and Peter Schwartz gave that pooled intelligence a name in their book *Seven Tomorrows*, writing, "We need a collective intelligence of a kind that may not have characterized the human species in the past." Such collective intelligence is, sadly, a rare phenomenon. Too often, even brilliant people like ourselves behave in ways that add up to collective stupidity in the form of arguments, alienation, global warming, Y2K—the list is endless. Usually we are herded into dysfunctional behaviors by dysfunctional patterns (structures, processes, and cultural agreements) that we don't even recognize as the source of our problems. If those patterns were made conscious, then collective intelligence could become a project of permaculture. We could



consciously design our society's systems for synergistic yield rather than drifting into dysergistic messes.

Although collective intelligence is the original core of co-intelligence, it is not the whole picture. Co-intelligence also includes collaborative intelligence—the heart of permaculture, the kind of intelligence that works with whatever life has to offer. As Mollison says, "Rather than asking 'What can I get from this land, or person?' we can ask 'What does this person, or land, have to give if I cooperate with them?'"

Another dimension of co-intelligence I call multi-modal intelligence—intelligence that includes all of who we are, all of our cognitive and engagement capacities: head and heart, reason and intuition; mind and body, as well as facts, principles, narratives, and ethics.

The final two components of co-intelligence I call wisdom and universal intelligence. Wisdom involves everything that gives us perspective—the big picture, the long term, the nuances, the gestalt, the depths, the ambiguities, the Other, the unknowns, the awe, and even humility and humor. Universal intelligence includes any phenomena that suggest that something vastly larger than us has a mind of its own—God's Will, the Tao, the self-organizing capacity of nature, call it what you will—that contains us, moves us, and often seems to want to work through us, individually and collectively. Integrating such "higher intelligence" consciously into our lives can have a profound effect on how meaningfully and successfully we engage with the world.

But in this article, I'll stay grounded in how to enhance the collective intelligence of communities.

### Designing Human Communities for Self-Organization

Here are some basic concepts to guide us in designing human communities for self-organization:

1) Intrinsic life energy is a powerful motivating force in humans, individually and collectively. Intrinsic life energy shows up whenever people are moved by their needs, values, natural inclinations, passions, possibilities, and so on. The more that *intrinsic* forms of life energy/motivation are tapped, the less that *extrinsic* sources are needed for fruitful human activity.

2) Life structures shape the flow of life energy. Human life structures manifest in many forms, including

- beliefs (both individual and cultural)—about what is real, possible, true, right, expected, natural, etc.;
- architecture and other spatial patterns, physical constraints, and channels;
- schedules, time demands, and other temporal patterns;
- collective processes (group protocols, market interactions, political institutions, etc.);
- physical, psychological and social habit patterns, both individual and collective;
- affinity patterns (e.g., aesthetics, attraction, reward) and their opposites (disharmony, repulsion, punishment);
- stories, myths and other narrative structures. (The word "narrative" describes more than just a story told. It describes a structure of reality—as in Muriel Rukeyser's phrase, "the universe is made of stories, not atoms"—which resonates strongly with intrinsic patterns of perception, thought, and meaning. Narrative patterns silently underlie our psychological and intellectual lives and influence our affairs. We shouldn't overlook or underestimate them as a source of resources, solutions, and possibilities.)

3) A healthy culture is an evolving, co-created pattern of life structures that help individual and collective life energies move through their natural cycles in ways that sustain each other and the whole system.

4) Diversity is a resource to the extent it is used creatively. "Every resource," says Mollison, "is either an advantage or a disadvantage, depending on the use made of it." Co-intelligence brings diverse perspectives into synergistic interaction—as in true dialogue—to increase the validity, comprehensiveness, and fruitfulness of the collective insights that emerge.

The story of the blind men and the elephant applies here. The blind men, feeling different parts of the elephant, argued over whether it was like a tree, a snake, a giant leaf, etc. If they'd started from the assumption that each of them had a piece of the truth, they would have gotten much further. As Mollison says, "Stupidity is an attempt to iron out all differences, and not to use or value them creatively." Using our differences creatively is a hallmark of co-intelligence. And it points us towards a design principle with which to create powerful wisdom-generating approaches to politics. Here's a practical example.

### Representative Diversity + Consensus Process = Political Wisdom

One weekend in June, 1991, a dozen Canadians met at a resort north of Toronto, under the auspices of *Maclean's*, Canada's leading newsweekly. They'd been scientifically selected to represent all the major sectors of public opinion in their deeply divided country. They were facilitated by Harvard professor Roger Fisher, co-author of the classic *Getting to Yes*, and two of his colleagues.

Despite being political and personal strangers and despite being continuously watched by a camera crew from CTV television, these diverse ordinary citizens managed to craft a consensus vision for their country in less than three days. It was published in four pages of fine print—part of the 39 pages *Maclean's* devoted to describing their efforts in the July 1st issue.

*Maclean's* editors pointed out that this process had proven more effective than numerous other forums run by the government for years, involving hundreds of thousands of Canadians at a cost of tens of millions of dollars. What made *Maclean's* process more successful was that its participants were

- a) selected for their significant differences and
- b) professionally facilitated to a consensus. Of course, this consensus was not a "you scratch my back and I'll scratch yours" compromise. It was an agreement that came from really understanding and connecting with each other and becoming partners in meeting their real needs.

This is important: We aren't talking about political representatives who are answerable to conflicted constituencies, debating and voting on proposals to come up with a majority decision. We are talking about people who are demographically representative of a population, exploring their way to a deep, shared understanding. The first approach is based on *power-over*—the ability of one part of the whole to influence and dominate other parts. The second is based on *power-with*—the ability of synergies within and around a system to generate desirable results. In this case the synergy was dialogue, wherein parts of the whole discovered deeper truths by understanding each other so well that a richer picture emerged that included them all.

Canada isn't the only country that has used this approach.

Several times a year the Danish government convenes about fifteen citizens selected to represent the diversity of the Danish population. They are instructed to study and make recommendations about a specified technological issue (such as the genetic engineering of food). They're given a summary of who believes what about the issue and why. They're helped to come up with a list of questions they want answered and a list of experts to answer them. Those experts—often representing opposing views—are called to testify to that citizens' council. As Frances Moore Lappé says, "the experts are on tap, not on top." When these diverse citizens have learned what they want to know, they are facilitated to a consensus about policy recommendations which they then deliver to the press and the government. The resulting wisdom embraces the facts and possibilities presented by the experts, as seen through the common sense, daily lives, and public values of the citizens. This allows each group (experts and citizens) to exercise their best roles in a harmonious way. They provide their culture with "protracted and thoughtful observation" (Mollison again) about new technologies.



councils are regular, the next council would be made up largely of people who had dialogued about the results of the last council, thus providing continuity in the unfolding evolution of the community's wisdom.

I believe this model is the most powerful form currently available to us to generate genuine community wisdom and coherence. For more information, see "Building a Culture of Dialogue (among other things)" at [http://www.co-intelligence.org/CIPol\\_CultrOfDialog.html](http://www.co-intelligence.org/CIPol_CultrOfDialog.html).

### Politics for Self-Organization

What would politics look like if we took wholeness, interconnectedness, synergy and co-creativity seriously? For our purposes, let us say that politics is how a community or society reflects on its circumstances, solves its problems, makes decisions and takes action on its own behalf. As this plays out in our culture it takes many forms, which I've arranged here in a "spectrum of politics," and the qualities that characterize them. Most of the effective action currently goes on in the power politics mode, against a background of apolitics, anti-politics and routine politics. Meanwhile, cooperative and holistic politics are growing as alternatives to the other, more fragmented modes. The qualities of these last two, which are less familiar to us, are described further down.

#### *Apolitics* (issues: personal issues, freedom, stability)

- "Living one's life as if politics has nothing to do with oneself."
- Consumerist absorption in personal affairs
- Denial about collective threats
- Politics as a spectator sport
- Obliviousness to underlying political dynamics
- Personal solutions to collective problems (e.g., water filters)

#### *Anti-politics* (issues: alienation, corruption, hopelessness, utopian visions)

- "Sick of the life-degrading dynamics of politics"
- Cynical pessimism, or passive confidence: "things will work out"
- Dismissal of politics
- Opinionated political spectatorism (often very sophisticated)
- Re-channeling of political impulses into other efforts (spirituality, relationships, psychology, groups)
- Ideological glorification of personal/small group approaches

What would happen if this "diversity + consensus = wisdom" approach—became the foundation of our political system? Two initiatives are already moving in this direction:

- Consultant Jim Rough (email: [jrough@olympus.net](mailto:jrough@olympus.net)) envisions an annual national "Wisdom Council" established by constitutional amendment and made up of two dozen citizens selected at random. This diverse group would be facilitated to a consensus about what "the people" are concerned about and what they want.

- A group called The National Commons (email: [steiner\\_king@earthlink.net](mailto:steiner_king@earthlink.net)) plans to convene major players involved with specific issues, from across the political spectrum, and facilitate them to a consensus about how their issue would best be addressed. Since these folks are already active on their issue, their consensus wouldn't just constitute a recommendation—they would act on it.

Any community could convene regular citizens' consensus councils of this sort, on specific issues or to articulate the "will of the people" to guide political dialogue and action. The more official, regular, and broadly publicized such councils are, the better.

This isn't "participatory process" in the "direct democracy" sense. Only a tiny fraction of the population speak in these councils, and those speakers are no way answerable to that population. However, the perspectives of each member of the vast majority of the population—the voice of their type of person—is not only heard, but actively integrated into a greater wisdom. So we're talking neither representation nor participation, but something else. We're focusing on and engaging the aliveness and intelligence of the whole system rather than on the opinions of the myriad individual parts (as voting and polling do).

For best results, however, there should be a subsequent participatory dimension to this process. Before it can become truly "the wisdom of the whole," the findings of a consensus council need to be worked over by the whole population. There should be widespread dialogue on the council's findings—discussions on talk shows and in bars, essays in schools, editorials in papers, theater performances and poems, the works. The collective mind of the community needs to reflect on what was said by these "wisdom representatives"—to digest it, adapt it, see where it fits. Then, if the

**Routine politics** (issues: information, fair procedure, majority rule)

"Playing one's prescribed participatory role as a citizen."

Voting

Following the issues of the day

Writing political letters

Contributing to causes or candidates

Tolerance of other's views

**Power politics** (issues: leverage, answerability, imagery, winning)

"Getting what one needs and wants in a competitive environment."

Political debates

Political campaigns for issues and candidates

Use of media, money, organizations, etc., for political ends

Strategic gamesmanship

Undermining opponents

**Cooperative politics** (issues: vision, common ground, participation)

"Working together to pursue shared visions and satisfy shared needs."

Dialogue among diverse stakeholders or opinion leaders

Asset-based community development<sup>1</sup>

Consensus community organizing<sup>2</sup>

Participatory community planning efforts<sup>3</sup>

Listening projects<sup>4</sup>

Study circles<sup>5</sup>

**Holistic politics** (issues: synergy, insight, big picture, system dynamics)

"Generating the wisdom of the whole for the benefit of the whole."

Citizen consensus panels and wisdom councils

Redefining success<sup>6</sup>

Open Space conferences of elders on public issues<sup>7</sup>

Publicized scenario work by all stakeholders<sup>8</sup>

Multiple-viewpoint drama<sup>9</sup>

Satyagraha (Gandhian "truth force")<sup>10</sup>

Here is more information on these co-operative, holistic approaches:

1. Asset-based community development (ABCD). Citizens discover, map and mobilize assets hidden away in all the folks who live in their community, as well as in associations and formal institutions, and bring those resources out of the closet and into creative synergy with each other. See *Building Communities from the Inside Out: A Path Toward Finding and Mobilizing a Community's Assets* by John P. Kretzmann and John L. McKnight (Center for Urban Affairs and Policy Research, 1993); \$15 from ACTA Publications [800] 397-2282 and the Asset Based Community Development Institute at <http://www.nwu.edu/IPR/abcd.html>

2. Consensus community organizing. This identifies projects on which community organizations and "downtown interests" can collaborate, thus building relationships for future projects. See <http://www.cpn.org/COI/>

3. Participatory community planning efforts. Open municipal planning/visioning processes which attract hundreds of citizens to brainstorm, discuss and select improvements for their city/community. For an example, see <http://www.co-intelligence.org/S-Chattanooga.html>

4. Listening projects. Canvassing door to door with questions that invite citizens to explore issues in ways that transform their awareness and engage their interest and participation. Contact Rural Southern Voice for Peace (RSVP), 1898 Hannah Branch Road, Burnsville, NC

28714, (828) 675-5933, email: [rsvp@igc.apc.org](mailto:rsvp@igc.apc.org)

5. Study circles. Voluntary, self-organizing adult education groups of 5 to 20 people who meet three to six times to explore a subject, often a critical social issue. See [http://www.cpn.org/sections/affiliates/study\\_circles.html](http://www.cpn.org/sections/affiliates/study_circles.html) or The Study Circle Resource Center, PO Box 203, Pomfret, CT 06258. Phone (860) 928-2616, email [scrc@neca.com](mailto:scrc@neca.com).

6. Redefining success. A system's assumptions around, measurement of and rewards for success are among the most powerful shapers of thought, feeling and behavior, both individual and collective. Collective inquiries around the issue of "quality of life for all of us, including future generations" can evoke real wisdom. See <http://www.co-intelligence.org/P-qualitylifeindicators.html> and *Reworking Success* by Robert Theobald, online at <http://www.transform.org/transform/tlc/rsuccess.html>

7. Open Space conferences of elders on public issues. To generate collective wisdom, participants would ideally themselves be relatively wise and be able to carry on respectful, powerful dialogue—thus the reference to "elders" (which here refers to such people of any age).

8. Publicized scenario work by all stakeholders. Scenario work explores an unknown future—not to predict or control what happens, but to prepare ourselves to recognize and better work with it, whatever it may be. For more information, contact Douglass Carmichael at [doug@tmn.com](mailto:doug@tmn.com).

9. Multiple-viewpoint drama. Fiction or documentary, video or performance, the idea is to present compelling vignettes of the many perspectives in any situation so that all viewpoints can be heard by a wide audience. See <http://www.co-intelligence.org/S-multipleviewptdrama.html>.

10. Satyagraha (Gandhian "truth force"). While many believe Gandhian nonviolence is basically about resistance, Gandhi stressed that it involved adherence to truth and the effort to draw everyone involved into truth-seeking dialogue, where participants become more grounded in their own humanity and the welfare of the larger community.

The effectiveness of all these approaches can be enhanced by (a) combining them into synergistic programs, (b) doing them regularly (not just as one-time events), and/or (c) by having them sponsored by servant leaders at all levels of a community's formal power structure.

For a vision of how one might integrate some of these approaches, see "Raising the Quality of Dialogue About Y2K" [http://www.co-intelligence.org/y2k\\_dialogquality.html](http://www.co-intelligence.org/y2k_dialogquality.html) or "The Story of Pat and Pat—a view from the Year 2019" <http://www.co-intelligence.org/S-PatandPat.html>

Remember: All the approaches in this article and the next are pieces of an emerging puzzle-pattern for an entirely new way of being human—in powerfully self-organizing, collectively intelligent, wisely evolving societies grounded in the dynamic application of holistic, organic understandings. Permaculturists could help weave all this into coherent living cultures, so we can someday look back with amused relief at the politics that shackles us today. △

Tom Atlee directs the Co-Intelligence Institute, which studies collaborative processes (including permaculture), and focuses on how to create a holistic politics. For more information about co-intelligence, see <http://www.co-intelligence.org>. You can contact the Co-Intelligence Institute at [cii@mindspring.com](mailto:cii@mindspring.com) or P.O. Box 493, Eugene, OR 97440.

# A Co-Intelligent Toolkit for Working with G R O U P S

Tom Atlee

To put the ideas in the previous article into practice, here are three of my favorite large-group processes, followed by guidelines for dialogue in general, which can be used by any community to reflect on what it thinks, feels, and wants.

• **Open Space conferencing**, developed by Harrison Owen, provides a simple way for people to self-organize around their passionate concerns. Owen discovered that people attending conferences often liked the coffee breaks best. So his Open Space conferences have no keynote speakers, no pre-announced schedules of workshops, no panel discussions, no organizational booths. Instead, sitting in a large circle, participants (who must be passionate about the conference theme)

quickly learn how they are going to create their own conference. Anyone who wants to initiate a discussion or activity writes it in big letters on a large sheet of paper and announces it to the group. They choose a meeting time-and-place from a grid of post-it notes provided by organizers, and then tape their session announcement up on a scheduling wall. When everyone has announced and

posted their initial offerings, the conference begins. No one is in control. The whirlwind of activity is guided from within by the participants' passions and a few simple principles like:

- 1) Whoever comes are the right people.
- 2) Whatever happens is the only thing that could have.
- 3) Whenever it starts is the right time.
- 4) When it's over it's over.
- 5) The Law of Two Feet (my favorite): If you find yourself somewhere where you aren't learning or contributing, go somewhere else.<sup>1</sup>

• **Stakeholder gatherings** like Future Search Conferences can engage selected stakeholders representing specific constitu-

encies in reflecting on their shared past and the forces shaping their shared world. These gatherings differ from the consensus conferences in that they focus on stakeholders (who are often opinion leaders as well), and they usually set aside their differences in an effort to focus on their common ground and to co-create action plans and work teams together.<sup>2</sup>

• **The World Cafe**, where a large group can have the intimacy and engagement of small group dialogue without losing the broader understandings and group-feeling of plenary (whole-group) sessions. Stumbled upon by consultants Juanita Brown, David Isaacs, and Nancy Margulies, the World Cafe method requires space for groups of 4-8 people to sit in circles. It's useful to have circular tables, flowers, candles, quiet music, paper tablecloths, and marking pens (for writing notes on the tablecloth)—but none of these are necessary. After 30 to 45 minutes of conversation a bell tells tablemates to choose one of their number to stay behind while the others move to new tables to share what emerged from

their earlier discussions. At regular intervals the bell moves participants to new tables, but ultimately (or regularly, depending on how long the World Cafe is) they return to their original tables to share what they learned "out in the big wide world."<sup>3</sup>

## Building a Dialogue

The immense power of these techniques is further enhanced by the quality of communication that takes place within them. They are true "dialogues," embracing all that is most meaningful and fruitful in conversation.

Dialogue, as the term is used here, means shared exploration towards greater understanding, connection, or possibility. Many forms of communication fit this definition. But many forms

"People attending conferences often liked the coffee breaks best"

don't, including arguments, posturing, holding forth, defensiveness, bantering discussions, and other forms of communication where we don't discover anything new or connect with each other.

Here are some basic guidelines for dialogue which can be discussed and agreed to by a group and posted around a room to remind participants:

- We talk about what's really important to us—but we also like to have fun together.
- We avoid monopolizing the conversation. We don't talk overly long and we make sure everyone has a chance to speak.
- We really listen to each other. We see how thoroughly we can understand each other's views and experience.
- We respect ourselves and each other, making space for our differences. We say what's true for us without making each other wrong.
- We try not to get stuck in old thoughts and feelings. We see what we can learn by being curious and exploring things together.<sup>4</sup>

Dialogue can be fostered in *listening circles* (a.k.a. talking circles, council, wisdom circles, etc.), a form borrowed from tribal council circles. Participants' communication is mediated by a held object, often (but not necessarily) one with some special significance to the participants. An aesthetically pleasing, hand-sized stick or stone works well. In the simplest versions, the circle's convenor holds the object, welcomes people, makes some brief remarks about the process and spirit of the circle, and then makes his or her personal statement. She then passes the object to the person on her left who speaks (or can remain silent for a few moments), and then passes the object left, and so on, with each person speaking while the others listen. The object can travel around the circle many times with great benefit. There is no cross-talk or discussion, per se. In the most fruitful circles, people "speak the truth from their hearts," briefly and deeply sharing what they think and feel.

There are many circle variations, including:

- The circle can have a theme, or not.
- Turns can be timed, or not. The convenor can keep time, or pass a watch or clock right behind the object, so that each person times the person who speaks after them.
- Popcorn: Anyone can speak, but no one can speak twice until everyone has spoken once. Between turns the object is placed in the middle or is handed to whomever wants to speak next.
- Scrip circles: Each person gets several special slips of paper (or pebbles or poker chips), each representing an amount of time (usually 30 or 60 seconds). When they wish to speak, they "buy time" for their turn (putting some of their "scrip" in a hat that is passed to them)—or they can give some or all of their

scrip to someone else to use, at any time. This process generates lively group dynamics and contains the total speaking time.

- Some groups enjoy opening rituals, such as placing something (a candle, personally meaningful objects, etc.) in the middle of their circle to symbolize a shared center. In these groups, closing rituals usually involve putting the candle out, removing the center-objects, and/or holding hands in the circle.
- Impromptu circles can be done by two or more people whenever they need or want, using whatever's handy (such as a stapler or salt shaker) as an object to pass around.
- Placing a chime and stone in the center can provide some benefits of dialogue without the constraints of a formal circle. If someone feels the group needs to center itself or move to a "heart space," they reach into the middle and strike the chime. All talking stops immediately until the sound fades, and then begins again. If someone picks up the stone from the center, they get the next turn after whoever is currently talking, and then return the stone. This enables quieter people to participate.
- Fishbowl process allows different sides in a disagreement to air their issues without the battle dynamics intrinsic in debates and arguments. Several people representing Side A talk together in a central circle while those from Side B (and others) sit in the surrounding audience without commenting. After a set period, Side A moves into the audience and Side B moves "into the fishbowl." You may need to give turns to other sides or those who have no side. It is usually necessary to repeat the full cycle with all sides several times. A moderator is occasionally needed to keep the conversation civil and productive.<sup>5</sup> Δ

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# Returning Power to the Community

## The Cooperative Economic Vision

Brendan Conley

In a forthcoming novel by Wendell Berry, the narrator, town barber in the rural community of Port William, speaks of "The Economy" as a powerful, elusive force working to change the character of the town. If most of us think of the economy in this way, as an uncontrollable entity that acts on our lives, we have good reason: in the mainstream view of economics, lives and communities are subordinate to the market. But the economy is simply the way our community, nation, or world chooses to manage our resources.

The dominant economic ideology throughout the world is free market capitalism, which is driving an economic movement known as globalization. The results of this movement have so far been a trend toward centralization of economic power, a rise in inequality of wealth, increased homogenization of culture, and a negative effect on the environment. But there is another movement afoot, one that seeks to return economic power to communities, protect the environment from harm, and help people cooperate to meet their needs. I call this movement cooperative economics, and I discuss some principles that distinguish it from the mainstream view.

One of the primary differences between cooperative economics and the globalization movement is in motivation. Mainstream economists preach the profit motive and place value on things that are bought and sold; the cooperative vision places human needs first. A good way to see how much value is placed on different things is to look at how they are measured. In modern economics, the nation's economic health is measured by the Gross Domestic Product (GDP). This measure is flawed because ignores at least two major contributions to the health of a community and its economy: the unpaid work of mothers and other care providers who work in the home, and the raw materials that the earth provides. These resources are not counted as benefits to the economy, and the pollution and social problems created by industry are not counted as costs.

Other measures, such as the Genuine Progress Indicator (GPI) have been devised to accurately reflect the costs and benefits of economic activity. Part of the vision for a cooperative economy is to create nonprofit alternatives to mainstream institutions. The focus of consumer cooperatives, credit unions, and other such alternatives is to meet the needs of people in the community, not to extract profit from them.

### Strengthening Local Economies

Globalization shifts economic power away from local communities and into the hands of transnational corporations and global financial institutions like the International Monetary Fund and the World Bank. The result is that choices about people's jobs, resources, and environment are made outside the community.

One way to empower a community economy is to promote community self-sufficiency. When the local economy is too dependent on outside resources, people are held captive to the vagaries of global trade; when we provide for ourselves, we ensure

greater security. Another important act for local economic power is supporting local, independent businesses. When we shop at chain stores, we allow transnational corporations to extract profits from our community; when we support small businesses, the money we spend is reinvested in our local economy.

### Economic Democracy

Our political system has flaws, but it is technically democratic. If our representatives in the government fail us, it is our responsibility to work to make the system function properly. But corporations hold an extraordinary amount of power in our society, and their power is profoundly undemocratic. Corporations are top-down hierarchies with no responsibility to the people whose lives they affect. Our society is supposed to be managed by the people under the principle "one person, one vote." But corporations vote with dollars, and politicians respond, further corrupting our political democracy.

Nevertheless, it is possible to bring our economy up to the level of a democratic system. The oldest and most powerful tool for doing this is labor organization. When workers organize to exercise control over their workplace, their needs are balanced with the goals of the shareholders and management, and inequality of wealth is reduced. Another method is through cooperative institutions, collectively owned and controlled, wherein economic power is used for the benefit of the whole rather than an elite.

Free-market ideology encourages us to look out for our own narrow self-interest at the expense of the common good. Globalization has thrown workers into an international competition to see who can work for the lowest wages. Governments compete for corporate investment by offering greater and greater tax cuts, and corporations themselves race to ship more jobs overseas and downsize faster than the competition. The competitive system is based on a falsehood: that an individual's self-interest is contrary to the community's interest. In a healthy economy, merchants and craftspeople are able to make a good living, and the community is able to make use of their goods and services. People in the same line of work can see each other as colleagues rather than rivals. Consumer and producer cooperatives encourage this shift in thinking by emphasizing mutual aid. It is a simple, powerful truth that what benefits the whole benefits the individual as well.

All over the world, people are taking action to create cooperative economic systems that benefit their communities and the environment. The movement comprises elements such as cooperatives, credit unions, worker-owned businesses, labor unions, community banks, microlending, community currencies, boycotts, and activism for corporate accountability. We'll be looking at these elements in more detail in future installments of this column. **A**

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# Where Did You Get Your AXE?

J. Baldwin

Stuck in traffic. Again. Hour-and-a-half to drive the thirty miles home from work every day. Noise. Lethal fumes. Acid rain. Clearcutting. Crime. Corruption. War. Despair. We know where the blame lies: Big corporations and their political protectors, advertising, and consumerism, and most of all, technology—especially computers—that gives all of them their power. Without the pervasive effects of technology run amok, we could exist as good earth citizens, doing honest work in harmony with the environment. We must get closer to nature, espouse Native American ways, live lightly on the land. We can forsake the hi-tech life that brings with it the ruin of environment and human spirit. We should return to the simple life.

Not long ago, I attended a lecture by a family that had courageously decided to do just that. They'd quit the California rat race by moving to, and squatting upon, a strikingly beautiful unnamed valley in what appeared to be Wyoming. Color slides showed a log cabin laboriously crafted on the shores of a sparkling lake, the logged trees selected to least disrupt natural forest patterns. There was a thriving vegetable garden, strips of deer meat on drying racks, a bushy Husky dog, and a little blond boy proudly holding up an immense fish. The family had even made the rowboat. They preached enthusiastically, celebrating their achieved goal of disconnection from the dehumanizing technological society that we, their unlucky audience, still endured. When the talk and slides were over, that audience (minus one) cheered lustily.

Questions from the floor centered around diet, raising kids in the boonies, and arduous flights back to civilization for supplies and emergency health care. There was chat about rifles and ammunition, radios, chainsaws, and wood stoves. Every question and every answer carried a direct or implied denouncement of hi-tech, and a warm approval of what the family had done to escape it. Nobody asked them what the remaining five billion of us should do. The subject of money was politely avoided.

Then I asked, "Where did you get your axe? And the slide camera and the stove, the flour, the nails, the books, the garden seeds, and the window glass? Isn't it bothersome to spend nearly all your time doing repetitious chores as if you were factory workers? Looks to me as if you've just traded positions as cogs-in-a-machine for being field hands!" I flamed along there for about a minute before being drowned in boos.

Those brave settlers were having a wonderful adventure, but it was not at all disconnected from the technology they were

working so hard to avoid. They'd merely lengthened the umbilical. The emergency medical facilities and the radio and floatplane that made the facilities available were about as techie as you can get. The axe is less obvious, but there is no way around the fact that there was a nasty steel mill somewhere in its past. That mill worked—messily—with ore, coal, and other resources, all of which involved environmentally despicable procedures.

By moving to the bucolic boondocks, that happy family dodged the undesirable effects of the technology that was supporting them even as they sneered. They dodged responsibility as well. I'm sure they are nice people, and they doubtless learned a lot. Certainly they are to be commended for actually trying their ideas; technophobes (including some famous ones) are notorious for living in a manner other than what they recommend. Nevertheless, the words *parasite* and *hypocrite* and *elitist* came to mind as I listened to the family talk. Most prescriptions for suppressing rampant technology sound very much like the slide show this family presented so proudly and self-righteously. Δ

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# Sculpting a Neighborhood

Marna Hauk

Mud-speckled and freckled, sun-touched, exuberant bodies work in tight teams at tarps of mud, sand, and water. Others grate straw and clay for finish plasters, and carry materials to rotating building teams. This is a long breath from an earlier moment: seventh-graders in a suburban Oregon middle school, in pristine clothes, disdaining the dirt, slouched in front of strangely half-transformed landscapes of pond excavation and half-laid path. And this is even farther from the original scene: an unused flat courtyard in the middle of the school—grass, poplars and a dead fir tree ringed by cement. And yet to come is the almost unrecognizable finished naturescape, "Mama Bear Meadow," replete with meandering paths through native planted vegetation, solar-powered recirculating concrete-rubble streambed and pond—duck and frog habitat—leading to a double-decker, sod-roofed,

wildlife-inhabited, earthen cob study bench.

Many creative projects of muddy hands in contexts urban and rural are expanding permaculture beyond the stereotype of elite gardens and homestead self-sufficiency, to inhabit the full range of possibilities of the generative earth. Dedicated permies working with folks in skateboard ramp parks and in homes for the "chronically mentally ill" are refining and expanding what permaculture means, while also spreading the good news about ecological systems design.

Permaculture contains and exposes us to several cultural paradoxes that help weave together self-reliance and community. Who is the "self" in self-reliance? Permaculture, being ecological, stresses *relationships*. If we take the deep ecological sense of Self—the ennobled and enlarged Self as part of the landscape and ecosystem, new insights into Self-reliance emerge. I prefer to unflatten the Western cultural polarity around self and community that occasionally appears in permie conversations. Let me explain.

## The Larger Social Body

Once, while teaching village design at a course, some of the students were affronted at the notion that permaculture might require of them more than going out and living a pure life on a secluded 40 acres, them and their organic garden, their goats and their zones and sectors. Sometimes we'd rather forget about the larger zones and sectors of the village, or designing with neighbors. In this view, "neighbors" are something we just put up with to avoid trouble, to avoid being reported to the local building authority for our creative construction techniques or outlandish composting toilet schemes. Neighbors are something out past the orchard and wilderness in some designs, out in Zone N—where no one ever goes! Neighbors (bless them all), their perceived strange ways, seeming ignorance, or un-permaculture practices, are really part of the larger body of our Self. So permaculture invites design with them as well, thereby cultivating Self-reliance.

Of course in permaculture, we're not talking so much about doctrine as about confluent streams of passion, vision, and interest. One would hope even reclusive Thoreau, if alive in modern times, would consider permaculture a friend. Thoreau had a profound understanding of his presence inside larger social bodies. His wisdom can serve as a good teacher. What Self-reliance yields is an honoring of *relationships between interdependent wholenesses*. And what permaculture yields is design by and with this larger Self.



*Marna's Portland Neighbors stomp some cob.*



*Medusa Organica takes shape in a Portland front yard.*

There are formal moments that exemplify this, when grants and good design-process leverage meaningful and creative urban experiments into useful demonstration sites. Then there's the unplannable magic of synergistic Self-reliance. Last year, in my front yard in inner Northeast Portland, this meant that a flat south-facing, sloping lawn became a small community design ground, with Americorps volunteers slathering very experimental cob mortars on old broken sidewalk, creating a two-tiered, heart-shaped concrete rubble retaining-wall, behind which two keyhole garden-beds nourished perennial herbs, potato, chard, and whatever other starts and seeds made their way to our hands. This, in a neighborhood suffering from litter, untended ground, empty bottles, and the wreckage of urban poverty.

A few young people out in the 'hood looking for lawns to mow became sheet mulchers, weeders, and creeping-thyme planters. At the juncture of the two sweeping curves of the wall, we piled old dried cob, rocks, and anything else we could find. Here we were making a wishing well for passersby, and something of local visual interest.

### **Medusa Organica Shapes Up**

Young people and friends came and mixed earth, sand, and straw while doing karaoke and rap. Passersby were initiated into earthen construction. Earthgoo in the hands of the many rose to become a benevolent-faced Medusa whose arms descended from the retaining wall to embrace an old wok, which, filled with water, became a bird bath. I had envisioned a roof tiled with tiered printing press plates to protect the earthen sculpture/bird bath from the rain. The bath would be built on a base of larger

branches rising through the roof to provide cat-safe, bath-friendly bird roosts (some function stacking here). That all became very complicated—and that's when the kind of magic that can't happen isolated in a design room took shape.

In a fit of creativity we decided to cover Medusa with living things to avoid rapid erosion of the roofless cob. Grass, dandelion, oregano, and chives, pinned in with bamboo "barrettes," became her outlandish hair. Having heard that buttermilk and shredded moss, whipped together and pasted on a surface, would grow into a sheet of moss, we mashed up organic soy yogurt (the closest thing to hand) and bits of the extensive moss colonies that persisted on the south face of the cement stairs and gave Medusa Organica a facial—and her skin. This goo also served as glue for the larger layers of the moss that dappled her face.

Teachable moments abounded: When did moss harvesting cross the line into ransacking? How friendly were the worms? Was dirt dangerous? What birds lived nearby? And local, neighborly wisdom helped create Medusa Organica's beauty: Where was the stickiest clay? Where were the best rocks for her eyes?

Two ten-year-olds had made small dolls woven from pulled grass and weeds. The doll "Pineapple Woman," magicked up with ten-year-old powers of strength, humor, and friendliness, decided to inhabit Medusa's head. The next-door neighbor's driveway nursery provided some garden plantings and growing expertise. Help arrived at the critical times. We lacked straw for the last batch of cob—being mixed in a sudden hail—and a neighbor went home and borrowed some straw from her potato bed for this last batch.

Medusa Organica's regal, ancient mossy visage shone by mid-afternoon. Ideas for bird-attracting plantings abounded. Many hair stylists turned weed into wild 'doos. What had been a pile of dirt and rubble became green and alive. And in the particular magic that collaborative efforts like cob building provide, sometimes Medusa Organica was as much about how we can be good to each other as about how we can be good with the Earth.

(A postscript: Medusa Organica was so distinctive that our landlords, who decided to sell the house soon after her creation, changed their minds about their "Be creative with the yard—go for it!" point of view. They wanted Medusa Organica removed before realtor time, worrying that she would detract from their investment's value. They feared potential buyers would prefer lawn to garden, and no ornament to fantastical bird baths. Sadly, no amount of neighborly creative suggestion or discussion saved the integrated permaculture garden and Medusa Organica from being reincarnated as lawn. Perhaps Medusa Organica was ahead of her time, but she is waiting for her next life in a yard or garden near you!) △

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## A New Tool for Community Work

# Archetype Design and the Greater Circle

Vishu Magee

How easily we fall prey to the cultural weakness of becoming so absorbed in the process of solving outward problems that we neglect our inner process. Even in permaculture we often stand apart from the environment and study it from a distance with the analytical mind. If instead we apply a different set of techniques and expand the sense of self to merge with and include the environment, we get both good permaculture and a process of personal transformation. We are able to grow beyond the usual sense of body-and-ego, and become greater human beings. This approach to personal growth, called Archetype Design, can unlock the heart of permaculture—but it is perhaps even more relevant to the collective self: to community.

### The Perspective of Archetype Design

Archetype Design is a new method of design that proposes that a sustainable lifestyle is fundamentally the expression of advanced spirituality, and that work in sustainable systems and in community is therefore best done hand-in-hand with rigorous spiritual work. The essence of spiritual work consists of constantly enlarging one's sense of self, of dissolving the ego into identification with ever-greater collective selves. While this may sound rather lofty, it actually has immediate and important implications for permaculture. For as the sense of self expands to include others, we will inevitably treat other people and our surroundings as we would treat ourselves, displaying the kindness and harmlessness which true sustainability requires.

Archetype Design takes its name from the fact that underlying human nature and all natural phenomenon is a field of archetypes: patterns, templates, or pathways which govern the operation of visible consensus reality. Chief among these archetypes are the ordering principles of nature—and here the pivotal fact is that these same ordering principles underlie both Mother Nature and our own human nature.

An archetype familiar to permaculturists is the cycle of death-and-rebirth, which shows itself in nature as the turning of the four seasons, seen in the annual cycle of the plant which matures and flowers, dropping its seeds in death in order to be regenerated in the womb of the earth. We experience this same archetype in the psyche as the process of ego-death and renewal—the oft-painful but nevertheless essential dynamic of spiritual growth by which we ourselves die to old, outmoded ways of being and awaken to new levels of the self.

Countless other archetypes exist—Gaia, Kali, Kokopelli, Coyote, the interplay of Masculine and Feminine, of Shadow and Light, to name only a handful—that can provide new insight and richness in both our creative work and inner life. By accessing deep archetypal realms within the psyche we may directly experience the primal energies of nature, which allows us to harmonize ourselves with the natural world at the deepest possible level.

Rather than focus on problem-solving or technique, Archetype Design emphasizes opening up creative and healing channels so that images, forms, and inspiration may spring from sources far deeper than those usually touched by design practice. While conventional design—and frequently permaculture—emphasize *mastery*, in this work we emphasize *mystery*, placing stock in the inner journey into the intuitive, the feminine, and the right-brain realms. In this way we may align ourselves with immense primal energies that can join us in community rather than separate us.

Bringing the archetypal realm into our selves, our designs, and our communities gives us a core method to weave the parts into an integrated whole, and does so through an individual and collective creative process in which the result expresses our vision and dreams. Long before we select methods of organization, communication, or decision-making, we will have deeply grounded ourselves



*Bearing the primal element of fire, the hearth is perhaps the most powerful example in architecture of archetype. This fireplace is a ceremonial as it is inviting.*

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in universal, fundamental templates that are common to us all.

Archetype Design suggests that the healing of the environment, of the community, and of the individual is in effect the same healing, and that our success in resolving outer conditions in the world depends entirely upon healing the inner conditions of fear, greed, and aggression that created social and environmental illness in the first place. As we struggle to free ourselves from a consumerist lifestyle and move towards wholeness, deep inner work is actually the most important contribution we can make to the collective well-being.

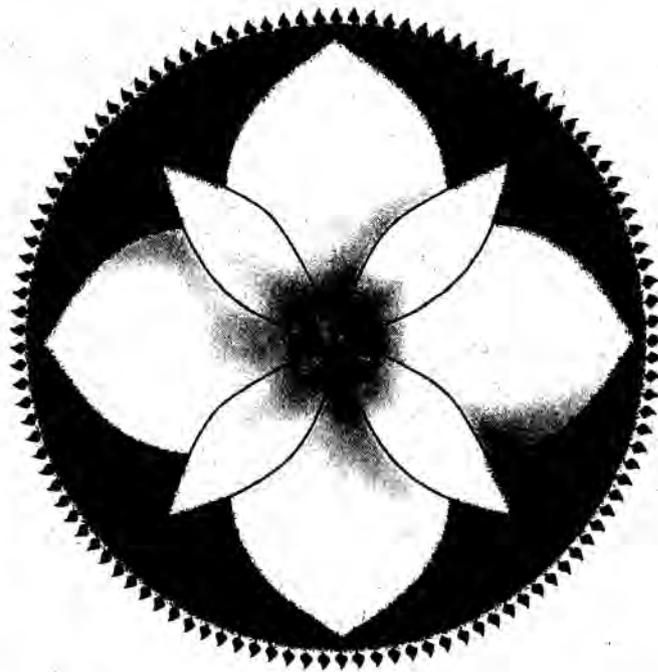
### Individual and Community

While it is important to appreciate that the circle of community is symbolically and functionally an extension of individual awareness, it is equally important to forge concrete pathways by which the individual can expand outwards to the greater circle and in turn be nourished by the community. Such pathways are opened up by the nitty-gritty spiritual work of basic awareness and self-reflection.

By developing clear awareness through meditation or other practices, we can begin the work of inquiry and self-discovery that might, for example, help us realize that thoughts and actions create results, and that we have a hand in creating the next experience by the choices we make right now. Gradually our intentions begin to shift, and we quite naturally begin to make choices which favor less suffering and greater happiness. While at first we may be concerned only with ourselves, as inner work continues we inevitably realize that any lasting happiness must include the well-being of all. Typically we begin by extending our concern to our loved ones, then perhaps to greater circles of friends, acquaintances, and eventually to the community. In this way successful community is the result of healing work done at the individual level, which is then projected outward in relationships with the other individuals who together form a new, collective self.

Of course, it is important to support such healing with skillfulness in the form of effective communication, decision-making and conflict resolution. These and similar social skills are used by many therapists and organizational consultants and, while such skills may be difficult to practice, usually they are readily accessible. The same is true of many forms of spiritual practice and discipline by which one can overcome the selfishness that undermines community efforts. These practices allow the individual to experience and resolve old wounds, to release blocked psycho-emotional energy, or to regain lost or fragmented aspects of the self. Thus, through a combination of therapy and spiritual practice, the individual may take his or her place in the community, fully present and available for the group.

However, it is the deeper spiritual underpinnings of community which are more difficult to access and which are the focus of Archetype Design. For example, the archetypal perspective suggests that the template for community already exists in each of us—after all, we evolved for millennia in wandering bands, tribes, villages, families, and clans. For how many hundreds of generations have our ancestors sung and danced in circles, sat for councils or storytelling around the central fire, or pitched teepees and huts in the round? In how many thousands of ways has our place in the



*The Quadrated Circle as a flower. The sacred circle is twice-quadrated through the unfolding of a flower, which symbolizes the sustaining nature of death-and-rebirth through the cycle of plant, blossom, and seed. At the center is the bindu dot representing the individual consciousness that flowers into the awareness of its own wholeness (community).*

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circle of the life been expressed in art, sacred symbols, song, dance, ritual, and architecture? In short, we are already programmed to function as groups of all sizes as well as to elevate the condition of the individual through service to the greater circle. Centuries of individualism and materialism have obscured this programming, and thus reconnecting with this archetypal patterning is a relatively new kind of work. It can take the form of drumming, dancing, singing, or meditating in the round. Talking circles, fire circles, healing circles, medicine circles, rituals, breathwork, sweat lodges, or eating around the archetypal table are other methods. Art and dream-groups are powerful vehicles for connecting with collective energies. When group awareness is being cultivated, virtually any form of collective work or play can serve to stimulate and reawaken the deep, powerful and comforting sense of collective self.

In turn, community feeds back to the individual, supporting and inspiring individual healing and effort. The experience of community lends meaning and value to life, and so like moths to the flame we are drawn to community, which is itself a microcosm of ultimate Wholeness. △

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# Bebop into Community Building

Christopher Peck

I have discovered something that I believe will revolutionize the teaching of permaculture. I think it will change the world for the better too. It's a simple technique that anyone can learn in an afternoon, and it helps easily convey the core of permaculture. This exercise subtly inoculates regenerative community dynamics into a course and into a community. It is known as the Consensus Building Process.

The core of the process is a set of three questions: What are the worst possible outcomes? What are the best possible outcomes? What are the beliefs and behaviors necessary for the best possible outcomes to come about? These questions can be asked at any scale, from an individual thinking about their small business to a large group of people planning for community self-reliance. I've been calling the process the Wopout-Bepout-Bebe exercise, which is short for "worst possible outcomes, best possible outcomes, beliefs and behaviors." I like the way it sounds, but even Wopout-Bepout-Bebe is too long, and in a recent permaculture design course in Patagonia, Arizona it was shortened to "the bebop exercise." Hence the title of this article: a new way to start swinging our way into a harmonious future.

**"You can lead a horse to water, but you can't make him drink."**

Before I give you the details of the process, a little background is necessary. I graduated from a very small college with a unique teaching approach: no lectures, read books, talk about them. At my first permaculture course I had a very difficult time sitting through lectures of almost any length. I was frustrated because I wanted to *do* permaculture, not have someone tell me things I had already read in a book. When I began teaching seven years ago, however, I immediately began doling out the permaculture liturgy in lecture form! I tried to include some discussion sessions and as much hands-on work as possible, but the feeling never left me that lectures were not up to the radical vision permaculture offers the world.

One of my assumptions about teaching comes from the familiar horsy saying above. I interpret this in our context to mean that what we are trying to teach cannot be taught—it can only be learned. Dramatic shifts in paradigm are even harder, if not impossible, to teach. Sailing is a good analogy. If I regale you for hours about great sailors, recount tails of sailing lore, or even

sing and dance some provocative sailing songs, do you learn to sail? Obviously, no; you can only learn to sail by sailing. You may become excited about the prospect of learning to sail, but if you're really going to learn how, you must grab the rudder and face the wind.

I have been working on the permaculture curriculum directly for the past couple years. Part of what motivates this work is my curiosity about what would happen if we applied permaculture principles and process to the teaching of permaculture. What if we had teaching methods and learning experiences that modeled the resilience and connectivity of natural ecosystems? Does such a question make any sense? What would such a "learning experience" look like? What is, to coin a phrase, "regenerative learning?"

We can play with this idea by creating some comparisons, similar to how we compare conventional agriculture to permaculture, which I have done in Table 1 below.

When I had satisfied myself that regenerative learning is real and possible, and I had some idea of what it might look like, I needed some way to detect it and talk about it. The learning circle (or talking circle) is example of regenerative learning (for more on this subject



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see Tom Atlee's article, *A Co-Intelligent Toolkit for Working with Groups* elsewhere in this issue). Here both the learning environment and the relationship between course participants are modeled after the circle or web, practically as well as metaphorically. The circle suggests and enhances equality between the facilitator and the participants, and between all participants. It visually reinforces the notion of a web of relationships between everyone and helps strengthen the community. It also honors the need for diverse sources of information and inspiration, and builds a cohesive and comprehensive whole. The learning circle has as its focus a group intention for learning.

With the above list in hand and the learning circle in mind, I had outlined the ideal. Now, what about the reality? I needed specific exercises that brought the concepts of the learning circle and regenerative learning to life. To make sure that the search didn't get too easy I added some other criteria. The exercise should:

- stack functions, accomplishing multiple outcomes at once. For example, the exercise could be a good stress-relieving movement exercise that also reinforces permaculture principles.
- be relatively low-tech, not requiring an overhead projector or slide projector. The exercise itself and the participants are the technology.
- be easily duplicated—participants should learn the exercise and facilitate it later without difficulty.
- be easily improved upon.
- carry the "DNA of permaculture," a phrase coined by John Wallace of Permaculture Drylands Institute. It means that every exercise, even if short and not necessarily connected to a permaculture course, should contain and convey the essence of permaculture. No small task!

**"Circle up the wagons, we're gonna build us some consensus."**

Wandering around with the notions of the learning circle and regenerative learning and all these criteria, I stumbled over a process that rises beautifully to the challenge. At a conference for Holistic Management educators, one portion was facilitated by Jeff Goebel, a Holistic Management educator. Jeff led the group through what he called "The Consensus-Building Process," developed by a retired Forest Service employee from Washington State named Bob Chadwick. Chadwick, tired of the endless polarized arguments so common in Forest Service work, developed a way to build consensus and move groups beyond conflict. His process is a

**Table 1. Conventional versus Regenerative Learning**

	CONVENTIONAL EDUCATION	REGENERATIVE LEARNING
<b>PROCESS</b>	Teachers teach/students learn	Everyone teaches, everyone learns
<b>ATTITUDE</b>	I'm the expert/you are ignorant, I am full/you are empty	Community rules/we know it all, We are full and we share freely
<b>METHOD</b>	Lecture	Group teaching-learning, immediate use
<b>CONTENT</b>	Technical solutions	Paradigm shifts ==> behavior changes
<b>METAPHOR</b>	Machine	Complex natural ecosystems
<b>ENERGY FLOW</b>	Source to sink	Multiple cycles create yields
<b>VECTORS</b>	One-direction flows	Webs of relationships
<b>PATTERNS</b>	Linear	Beneficial edges, guilds, rich feedback
<b>DISSEMINATION</b>	Slow	Rapid and competent
<b>LEARNING STYLE</b>	Limited	All styles embraced and empowered
<b>BRAIN USE</b>	Left brain	Whole brain/whole person
<b>OUTCOMES</b>	Perpetuates hierarchies	Empowers everyone

series of simple exercises and questions with quite profound effects.

Driving home from the conference I realized that the Consensus Building Process was an example of what I had been looking for. It creates the learning circle environment, stacks functions, builds community and the necessary webs of connections, and is easy to learn. The emphasis is on *building* consensus, not necessarily on *reaching* consensus. This process is not a decision-making tool, but more accurately a trust-building tool. It can be seen as a communication skill-building or vision-building exercise as well.

Briefly, the process consists of three questions that are answered in turn by each person in the class. The three questions are "What is the worst possible outcome?", "What is the best possible outcome?", and "What are the beliefs and behaviors necessary for the best possible outcomes to come about?" The questions can be rephrased to

focus on the relevant event or time span. For example, a teaching team may be thinking about the weekend workshop they are facilitating. Here the three questions would become "What is the worst possible outcome of this weekend workshop we're teaching? What is the best possible outcome? What beliefs and behaviors do we need to have and practice for the best possible outcomes to come about in this workshop?" The process can be used with great effect as one of the opening pieces of a permaculture design course.

Here's more detail on how to do it.

Break the class into small groups of no more than about ten people, and choose a facilitator and a recorder within each group. Explain the roles and responsibilities of each. The facilitator makes sure that each person in the group gets a chance to speak, and that respectful listening is the standard. The recorder writes down each person's reply exactly as it is said. This is very important: No one, including the recorder, should edit, paraphrase, or summarize anyone else's comments.

Then, within each group each person in turn answers the first question: "What is the worst possible outcome (of this course, workshop, etc.)?" Encourage the students to speak as honestly and freely as possible. On a flip chart, the recorder writes exactly what each person says, without paraphrasing or editing. The recorder should ask for confirmation and corrections from the speaker if necessary. The facilitator insures that everyone speaks.

Once everyone has spoken and added comments, the small circles merge into one and the recorder from each group reads the statements to the entire class. This process is very important and serves several purposes. Each person first has the experience of being respectfully listened to by everyone in the small group. Then each person has their words recorded precisely and heard by the entire class. All this reinforces the voice of each person in the group and simultaneously builds group identity and trust.

After the first round, collect the worst possible outcomes sheets from each group and set them aside. If there is a fireplace or fire circle I usually put them there for fire starter an opportunity for a ceremonial burning of these "worst possible" thoughts). It is important for everyone in the group to express these possibilities, but equally important that the group not dwell on them.

Do not take a break after the "worst possible outcomes" round as this can reinforce the negative possibilities. Move along quickly and maintain focus on the positive alternatives. Follow the same process for the next two questions: "What are the best possible outcomes?" and, "What are the beliefs and behaviors that support these best possible outcomes?" Again, rephrase as needed for the context.

Each group changes their facilitator and recorder for each of the three rounds, allowing as many people as possible to take roles of responsibility within the group.

The main role of the teaching team or facilitator of the class (you, I presume) is to hover about, watching for any editing of an individual's comments. This is a critical role, as people will frequently allow themselves to be summarized or paraphrased incorrectly to avoid conflict. Watch carefully to ensure that everyone in the group can speak freely.

Collect the responses from the final two rounds and post them on the wall of the classroom. This creates the center of focus for the class, and sets standards to live up to throughout the event.

Give power to the group. Charge them with the responsibility of creating their reality and living up to the posted statements.

"It slices, it dices, it removes unwanted facial hair, it wins the election . . ."

I have used this process in courses over seven times in the last year and a half, and the result is a high level of respect and respectful listening. Rarely does anyone interrupt others. The jockeying for position and attention so common early in a course seems to effortlessly dissipate. The whole tone of a course is different—it feels nurturing and supportive. The few times that I have not used the process since then have been jarring. Perhaps I notice people's interruptions more now, but the difference seems significant to me.

This exercise is an excellent example of "scale-linking," meaning a technique that needs only minor modifications for projects at different sizes or scales. It can be used at the personal level. Ask yourself what the best possible outcomes are for your life. How do you have to behave and believe for that to happen? It helps to voice the worst possible outcomes too—once I do, I feel more committed to the project I'm working on. It clears away the cobwebs of doubt and fear. This process also works nicely between two people, particularly in a conflict or a looming crisis that is scaring everyone. The largest group I've worked with is around 250; I don't know the upper size limit. It is easy to subdivide a large group into groups of 10 or so. I think it could work with 2000 people, though it might be cumbersome and take all day to complete the three rounds.

I've used the process interpersonally, when dealing with a seeming crisis or problem, also with great results. When my sister unexpectedly became pregnant a year ago, she was frightened to tell my parents. We went through the consensus building process, each voicing our vision of the worst possible outcome, the best possible outcomes, and how we each needed to behave and what we needed to believe for those best possible outcomes to come about. As it turned out (and as I knew), my sister's fears were unfounded; our parents were ecstatic. My mother's first words were "Thank you, God." She had been praying for grandchildren for years.

As I write this, I sit at my computer with a picture of my niece, in which she's holding my drum and looking as if she's wailing out her heart's beat. I cannot think of a better possible outcome. The beat goes on, down the generations, as we bebop our way into a harmonious future. △

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# Designing for Sovereignty

John Schinnerer

We often dream that by achieving self-reliance—whether individual or communal—we'll escape all kinds of outside interference: economic, political, social, perhaps even become independent of rainfall and landform. In a sense, we're asking for sovereignty. But what does it mean to be truly sovereign—collectively and individually—and how might this sovereignty be created by design? We can begin with some dictionary definitions of sovereignty:

*Freedom from external control: autonomy. One that is sovereign; especially: an autonomous state. The power of self-government, with independence from outside control. A state, territory, or other political body that governs itself. Supreme power, especially over a body politic. Dominion; sway; supremacy; independence. Supreme and independent political authority.*

## Politics Is Not Enough

These definitions focus on the political aspects of sovereignty. A sovereign nation, state, or government is in charge of its own laws or absence of laws, manner of governing, internal policies, and political processes. It need not defer to outside authority in determining these elements except under extreme threat or physical force.

Political means alone, however, are not enough for genuine sovereignty. Politics, as an element of culture, exists only in relations with myriad other elements of culture.

Laws—codes of conduct created through “political” activities—don't completely control people's actions. People break laws or change them over time. Different people interpret laws differently. So declaring one's community, state, bioregion, neighborhood or home to be sovereign—even if a government will accept the declaration—may well be an empty political gesture.

Even long-standing political sovereignty is no guarantee of “independence from outside control.” For example, the European Union (EU) member nations recently banned hormone-treated beef. They assumed they were sovereign nations—as they had

been for centuries—and thus could determine their own internal policies. If foreign affairs entered the picture, they negotiated directly with other sovereign nations.

The United States' beef industry, which had previously been selling hormone-treated beef to the EU, complained to the World Trade Organization (WTO). The WTO told the EU that their ban was, in the newspeak of global power-brokers, a “barrier to free trade.” They would have to either change their laws, pay compensation to the US, or face trade sanctions.

The EU nations were learning that their sovereignty in determining their laws and trade negotiations could be overridden by the WTO. If, when they collaborated in the creation of the WTO, they imagined that this could not happen, they have now learned otherwise.

A simpler example is the declaration of independence by the former Europeans living in the original thirteen colonies of the US. Creating and signing a declaration of independence was a political action. Actually establishing a sovereign nation with its own government and laws required a war. Sadly, this pattern, wherein an assumption of sovereignty runs afoul of real-world constraints, repeats throughout history, East Timor being only the latest example.

## Living Sovereignty

The ability of a political entity—whether nation, bioregion, community or individual—to actually “live sovereignty” requires much more than political will, declarations, or even permission. It requires robust systems that support self-sufficiency and local sustainability for meeting essential needs.

By “living sovereignty” I mean life in which autonomy and self-sufficiency are properties of daily life that are not readily disrupted or controlled by “external” events. This means having the flexibility to adapt to external forces rather being compelled to “lose sovereignty” or disintegrate. I don't mean “American rugged individualism,” survivalism, or reliance on isolation, force, or negating others' rights.

An entity living its sovereignty meets its own needs, but values appropriate and healthy interdependencies with other



sovereign entities. These relationships must not become unbalanced or one-directional dependencies.

Interdependencies and dependencies are vitally different. Interdependence is integral to being part of a complex system of interrelated complex systems, and almost impossible to avoid. Dodging interdependence didn't work for Japan, Albania, the Branch Davidians, the "tune in, turn on, drop out" generation or any of countless other isolationists. "No man is an island," nor is any city, state, community or bioregion (even those that are, in the geographical sense, actually islands).

In contrast, dependence predicates the well-being or existence of one entity upon the approval, support, or permission of another, without any reciprocal relation. When the EU chooses not to depend on US beef, it is presumably saying it can do without or find substitutes. But the US beef industry faces economic hardship if the EU stops buying. Therefore, the US beef industry is dependent on the EU, not the other way around.

Hawai'i offers another example. Organizations in Hawai'i are working towards political sovereignty for the islands, but Hawai'i is almost completely dependent on external sources for food, building materials, petroleum (and electricity produced by burning it), natural gas, transportation infrastructure, and much more. Hawai'i also enjoys a multitude of "hidden" subsidies as one of the United States. If Hawai'i became a politically sovereign nation tomorrow, its material dependencies would carry far



*This young Hawai'ian man is living in the garden at Pacific Neem Mission on the Big Island. Is sovereignty taking a stance? Or being supported by your surroundings?*

more weight than any political pronouncements in determining the new nation's actual freedoms and possible courses of action.

### Design Considerations

To design for sovereignty we must look and act beyond visible political systems. As in any design, we need to understand our underlying assumptions, where they lead, and whether that is where we want to go.

Here's an unnerving example of how unspoken assumptions push us toward or away from sovereignty. When the UN deter-

## **"Dodging interdependence didn't work for Japan, Albania, the Branch Davidians, the 'tune in, turn on, drop out' generation or any of countless other isolationists"**

mines "quality of life" for "developing nations" (note how even these terms carry powerful cultural biases), they measure the "ability to buy basic goods and services." Thus implicitly the UN considers that consumerism and the emergence of a money-based production-consumption economy evinces a higher quality of life, dismissing a culture's ability to satisfy its own needs without cash and from local sources.

To live sovereignty, an entity must do more than simply fill the basic needs of food, water, and shelter. A design for sovereignty must also include social needs, and spiritual, intellectual, mythical, mystical, and communal ones. Since human needs are interdependent with those of larger ecological systems, a human culture whose survival "needs" require the eventual destruction of the systems that supply those needs will not long be sovereign (and will not long continue to exist).

In autonomous traditional or historical cultures that I would call sovereign, activities that meet tangible needs such as food and shelter simultaneously meet less tangible needs, creating and maintaining both physical and non-physical community. Celebration, ritual, and passage of knowledge from elders to children are integrated into essential activities. These practices also preserve the human community as part of an ecosystem and support the continuation of sovereignty.

With basic needs met, a sovereign entity can trade or give away goods that are truly surplus: goods that are in excess of the entity's needs and are sustainably produced. Exporting a true surplus does not reduce sovereignty. Replace "sovereign entity" with "permaculture system" and you have the ethic of "contribution of surplus" in action.

To assess needs, to define surplus, and to help increase awareness of what is and is not produced locally, surveys of bioregional resources and production could be used. Even the most environmentally aware among us could use a reminder of where our water, food, electricity, building materials, and so on come from. For the sovereignty movement in Hawai'i, for



*Kahoolawe Island, a symbol of Hawaiian sovereignty. Bombed for decades by the U.S. Navy, it has been recently returned to native Hawai'ian control. A low island once covered with trees, it dried up when mountain forests on neighboring Maui were cut for cattle and sugar plantations. With the trees went the clouds which had carried rain across the channel. Goats and explosives did the rest.*

example, I would include questions that point to the hidden benefits of statehood: "In the independent nation of Hawai'i, where would funds to build and maintain facilities currently supported by US government monies come from?" or "How much would (whatever mass-market commodity you think you can't live without) cost when purchased by a small business in the independent nation of Hawai'i instead of a nationwide US business?" (in the Hawai'ian vernacular: "How much you gon' pay fo' one case Budwisah, wen' she no mo' one domestic beeah?").

### **The Problem is the Solution**

The dispute between the EU and the US beef industry via the WTO is of course rife with opportunities. New possibilities for more localized, ecologically appropriate domestic production of beef—and perhaps of imports withheld by a vengeful US—may emerge in the EU. These could completely bypass the whole tangle of global trade power brokers. Likewise, US producers could cultivate local markets instead of depending on exports (and, we hope, be told by an informed local public that hormones are still a no-no!). Both of these possibilities might restore the face-to-face links between food providers and their communities that in most places have only recently vanished.

Hawai'i, too, has countless opportunities to design for living sovereignty. Local and appropriate food production systems are the most urgent need, as 80% or more of food is imported. Forests for wildlife, biodiversity, water retention, and other needs must be restored and increased. Settlements must cease to sprawl, and become less dependent on the automobile. And much more, of course. Happily, there is a rich legacy of appropriate land use, habitation patterns and "pre-permaculture" permaculture system designs to draw on. Political sovereignty

could synergistically encourage reestablishment of land use patterns that work with—not block—natural energy and material flows, if the political will is there. And even without political sovereignty, increased lived sovereignty in the islands will result in an ever-greater local say in what happens, and reduce the need to sell the soul of the place and its people for the sake of survival.

An advantage of living in the most isolated human-inhabited archipelago on the planet is that one can more directly and immediately see the consequences of one's actions, for better or worse. There's not a lot of land to sprawl over, nowhere is there a very far "away" to throw things to, and everything that doesn't come from Hawai'i comes a long way at great cost, even in the false economy of cheap fossil fuel. Also, individual actions can ripple out more fruitfully, small examples look bigger, and the "seven degrees of separation" are reduced to about three. Imagine your community, city, county, state, bioregion as an island thousands of miles from any other land—it may be quite a useful design exercise!

### **Patterns That Connect**

To design holistically for sovereignty is to design for self-sufficiency, autonomy, and independence while engaging in appropriate interdependencies. In other words: self-reliance and community cooperation! A cooperative and self-reliant community will manifest the essence of living sovereignty, whether or not that community is a politically sovereign entity. A politically sovereign community lacking cooperation and self-reliance will manifest little that is recognizable as living sovereignty.

Now consider the patterns and relations laid out thus far, and reflect on your place as an individual, sovereign human being. What is your personal balance of self-reliance and community cooperation? What are your necessary and appropriate interdependencies, and what are your dependencies? Your local support system? Your hidden assumptions? How are you designing for your own sovereignty, and thereby, that of your community?

What we are designing here is not a building or teapot or sculpture. In designing for sovereignty we are working with patterns, relations, and interactions involving living beings—humans included—in all their (our) complexity. We need to bear in mind and body that in the systems we are designing, change will be the only constant.

We will be working with and through constant change, not limited to the relatively predictable sort found in designs that involve topography, material flows, plants, and animals other than humans. This is, rather, the type of constant change that has woven the fabric of human history in all its variety, complexity and mystery. It will not yield its wisdom to casual or careless inspection, nor to thoughtless and protracted labor. We ourselves are the most complex and mysterious elements we must work with in our designing. △

*John Schinnerer is an iconoclast who tests software for money, writes (usually) for free, rides a recumbent bicycle, gardens where the front lawn used to be, likes to sing and play guitar, and has an M.A. in Whole Systems Design and land in Hawai'i.*

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# SIMPLE and Sustainable in SAMOA

Will Hooker

**L**ike the mariners of the eighteenth century, I believe that we've landed in Paradise. In case you're wondering, paradise is located on the small island of Manono in Samoa (called Western Samoa on maps and by outsiders). Here we've found perfect weather: mostly sunny and around 85° F, with gentle sea breezes and comfortable nights. The vegetation is tropical and lush, providing locally grown food that is plentiful and delicious. The people are beautiful, open, charming, and polite, and lead productive yet relaxed lives. The afternoon nap has been elevated to an art form. With no cars, dogs, or power tools on the island, the tranquillity of the days is marked simply by gorgeous sunrises and sunsets. The star-filled nights are beyond description. As Robert Louis Stevenson once asked, "How will we ever leave?"

On a year-long study leave from North Carolina State University, I'm visiting a variety of permaculture settings and practitioners around the globe. Traveling with my wife, Jeana Myers, and our now 20-month-old son, Eli, we scheduled a two-month stop in the South Pacific to rest, relax, and for me, to write. What we did not anticipate was potentially the most important lesson of the trip: learning of the cultural richness that goes hand in hand with simple living.

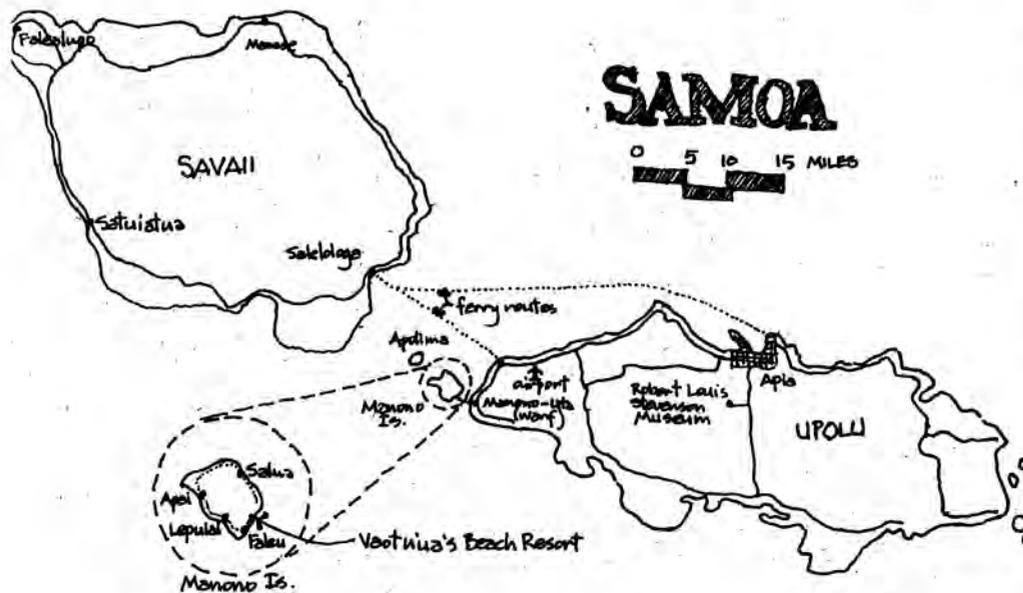
Samoa, located about half-way between Hawaii and New Zealand, has been independent since 1962. The nation comprises primarily two large islands, Upolu to the east, and Savaii (the site of the last sunset of the millennium). Between these are several small islands, including Manono, where we stayed. Manono is reached by a 15-minute ferry ride from Upolu, and is about one mile wide and two miles long.

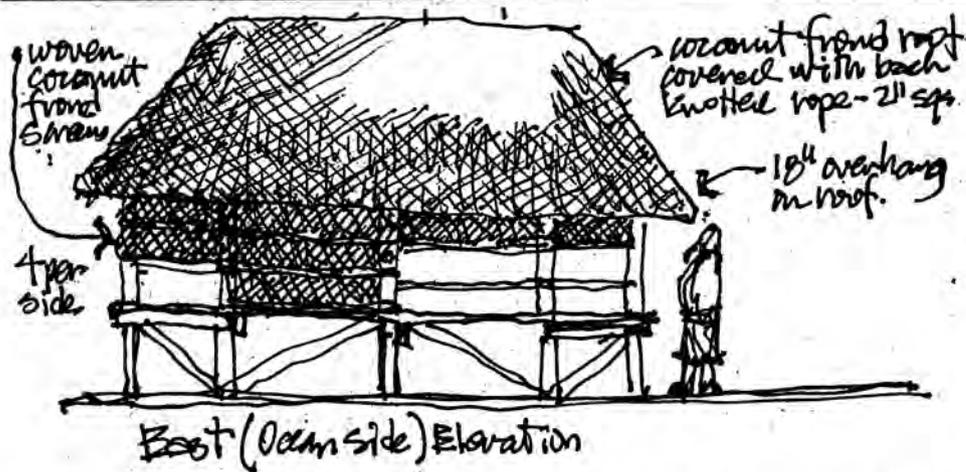
The roughly 800 people of Manono live in family compounds clustered in four small villages along a five-mile path that encircles the island. The islanders hope to be completely self-sustaining by the year 2000. While they probably will not meet this goal, their mostly traditional, village-centered lifestyle makes them the most sustainable culture that I've ever encountered.

## A Smoothly Choreographed Community

The Manono islanders' relationships with the five major physical systems (energy, water, wastes, food, and shelter) could be a model for the world. These relationships work primarily because of a subtle and highly complex social system that places a higher value on the good of the community than on the wishes of an individual. Most important, from our short-term observations, there is great peer pressure to be polite and generous in all acts of daily living.

To ride a bus is to witness these social expectations in action, where they flow like a smoothly choreographed dance. Children and teenagers, who always defer to adults, relinquish seats near the front for anyone who is older, or shift into adjacent laps when all seats are occupied (I once carried a 200-pound teenage girl for 45 minutes!). Being foreigners, we are burdened with too many "things" (three carry-ons, two day packs, and Eli's stroller). When we get on or off buses and ferries, many hands pitch in to help us. They don't do this in hopes of receiving money, but simply because everyone helps everyone else.





*The traditional house, or fale, is an open-sided, raised sleeping platform covered with thatched roof. Sketches by Will Hooker.*

Such thoughtful consideration, seen in all that the Samoans do, allows an easy transition to the motto for Manono Island: "Respect Our Environment." Simple and powerful, this is put into action, for instance, by the posting of signs in the villages which say, "Do not harvest baby fish; allow them to grow big to produce the next generation." With fish as the main food staple, the long-term benefits of this are obvious.

Similar vision guides their choice of plants, which have been carefully selected over hundreds of years. All plants have at least one important use, while most have multiple functions. The coconut palm is the prime example. The fruit is the basis for many delicious dishes and drinks, while the debarked tree-trunks furnish posts for traditional houses (called fale, open-sided, raised sleeping platforms covered with thatched roofs). Coconut fronds are used everywhere. Woven in different ways, they can be used for roof thatching, (water-proof despite the visible holes!), wind screens, baskets, traditional dinner plates, or they can be made into hats, visors, or a variety of children's toys (Eli loves his coconut-frond pin-wheel). The spines of the leaflets, when separated and cleaned, are bound together to make the ubiquitous brooms and whisks.

One of the most clever palm products, yet also the most time-consuming to fabricate, is the 'Samoan rope' made from the fibers inside the husks. To make it, the Samoans first separate the husks from the nut and soak them in the sea for a couple of weeks. They then pound the husks to free the 8- to 12-inch-long fibers, which they gather in groups of six to eight and roll on their thighs to form a thicker strand. Next the islanders braid the strands into a thin yet strong and durable rope that is the traditional tie for joining posts, beams, and rafters in even the largest structures. One such structure in the capital of Apia withstood the 1991 cyclone (75 mph winds for five days) while foreign-made buildings all around went down.

Making the rope takes many hours of seemingly mindless labor. This is performed by groups of older men to fill what they

call "empty time" or so they can remain a part of the community building-process, sitting on coconut-frond mats around the periphery of a construction site. Thus, the tedium isn't mind-numbing the way single-item mass production can be. Rather, it is transformed into living as art and art as living.

### Balancing Resource Use

The Manono islanders harmoniously fit other resource use into their culture as well. They obtained electricity only three years ago when one of the villages set up a generator. Since the power is used mainly for lighting at night (typically only one exposed light bulb per fale) it is not turned on until dusk, and goes off

around midnight. This works well in this mostly sunny climate where everyone works and lives outside.

Water is precious on Manono Island. Legend says that long ago a woman from the neighboring island of Apolima visited and swallowed their river whole. To stop her from stealing their river the islanders tickled her, but she only giggled and spilled a few drops. Her dribbles became the few shallow wells on Manono.

To compensate for this water shortage, every family compound has at least one big fale that is roofed with metal to capture the rain water, and large concrete cisterns for storage. A pipeline from Upolu was eventually installed, but its meager flow supplies only half of the island at a time. Our three-gallon bucket baths on Manono contrast sharply with the 100-plus-gallon, hot water extravaganzas back home. It is worth contemplating how an intermittent supply of water, even in a large urban setting, could make conservationists out of everyone.

Flush toilets only recently arrived on Manono, and were followed immediately by a strong environmental movement to replace these wherever possible with composting toilets. This is critical because when the septic fields fail (and they all do), the effluent will leak into the lagoon and ocean and potentially kill the coral reefs, the main fish habitat. As one local ecologist put it, "When you combine two valuable resources, water and biological nutrients (human waste) you get pollution and eventually disaster. Keep them separate and use them to enhance the environment."

One composting toilet has already been installed as a test on Manono. The brand used is "Roto-Loo," and as its name implies, it employs a revolving set of catchment drums. Each drum holds about 30 gallons and when the system is used daily—a necessity to keep the bacteria alive and working—each one fills in about a month. At the end of the six-month rotation only about six inches of dried, nutrient-rich compost remains, which can easily be spread in the fruit plantations. The system uses warm air,

**"Our three-gallon bucket baths on Manono contrast sharply with the 100-plus-gallon, hot water extravaganzas back home"**

passively heated in an externally sealed "hot-box," constantly passing over the drained liquids, drying them. This moisture-laden air is then vented via an air turbine on top of an external black pipe (black for solar gain to further heat the rising air).

Locally grown food, as you might imagine, is plentiful. Papaya, mangos, small sugar-bananas (which make our store-bought varieties taste like cardboard), plantain, taro, breadfruit, and more, abound. The meals, typically served in quantities best described as "Samoan" in proportion—twice as much as anyone could eat—include locally obtained fish, chicken, or pork as a protein source.

### Building for the Future

Alternative construction is one of the principle topics that I'm studying, and I've been fortunate enough to have watched (and helped, when allowed) the construction of a fale from start to finish. This simple structure that we now call home (named "Eli's Fale" in honor of our being the first inhabitants), was built in about five days and cost about \$170 US. Our fale is perched half over the water, resting on coconut posts on the land side and poumuli-tree posts where the supports stand in water at high tide. Because of the strength and decay-resistant qualities of poumuli, this tree is often planted along the edges of family compounds, to be harvested when the fales need to be rebuilt, about every ten years. Again, the islanders use common sense and vision to satisfy their immediate needs—shade, boundary definition, wildlife habitat—while growing useful building materials for the future.

Is this paradisiacal setting perfect? By our standards and expectations, no. Forty percent of the population is 15 years old

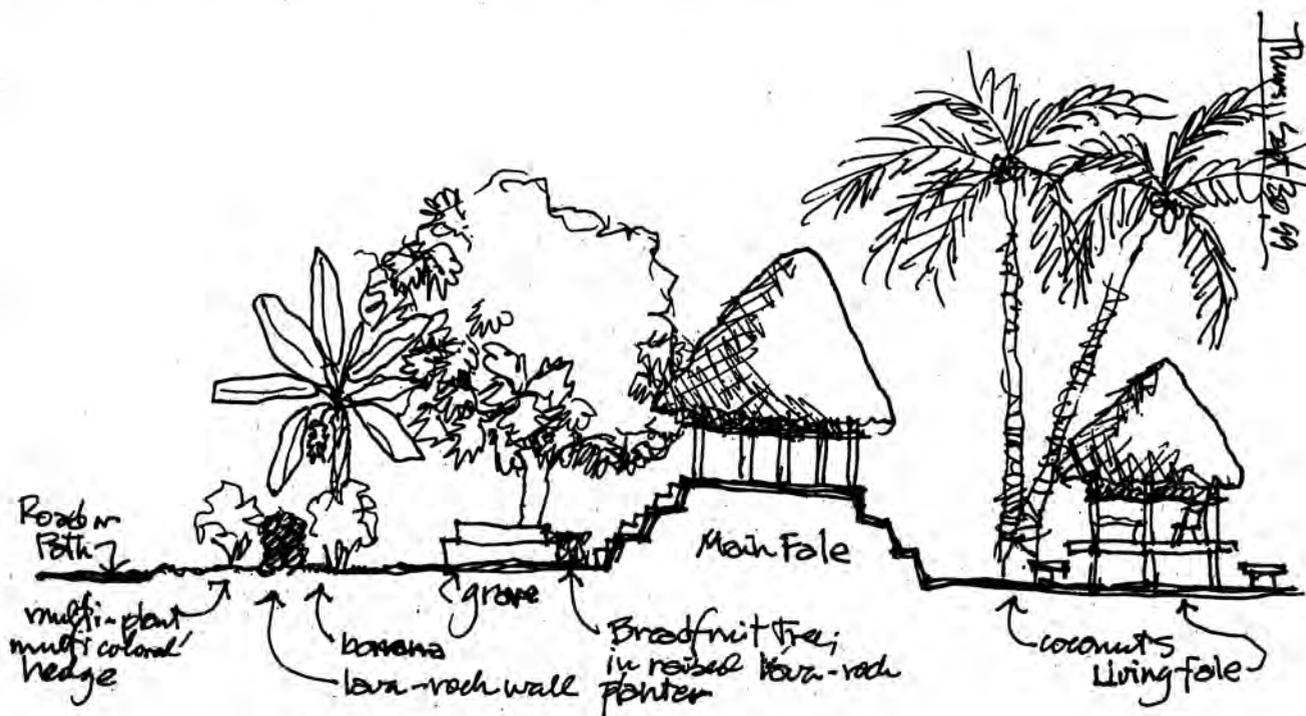
or younger. Overcrowding is thus only a couple of generations away. With the roles within the communities so well defined, sometimes the youngsters experience frustration controlling their life's direction.

Long waits for such things as water, buses, or ferries might not be tolerated in the fast-paced cultures of our "developed" nations. Samoans, however, appear to be making conscious choices to live within family, community, and environmental limits and expectations. Individuals seem to desire wealth or fame less than they do respect for being a good person or a reputation for good work. The Samoans that we've met, and the residents of Manono Island, are proud of the beauty of their environment, proud of their lifestyles, politeness, and generosity, and proud of their nation. How many of us can say the same?

There is an old Hopi prophesy that says the ancient tribes have a responsibility to retain their traditional ways because they will be the teachers for living in the next millennium. I now know what this prophesy means: If we learn our lessons well from people like the Manono islanders, the future holds the hope of living in Paradise. △

(To book a stay on Manono Island, contact either Willie or Tauvela, of the Vaotu'ua Beach Resort, at (international access) + 685-46077. The fales rent for around \$15 to \$20 US/person/day, which includes Samoan-sized breakfasts and dinners.)

*Will Hooker, a professor of horticulture at NC State University at Raleigh, is a dowsler, a creative artist in bamboo structure, and a permaculture teacher. He is currently traveling on sabbatical.*



Section of a typical family compound.

## A Cooperative Economy in Spain

# Mondragon and the Future of Cooperation

By Brendan Conley

**W**e dream of building a cooperative society. But what would that look like? For an answer, we might turn to Mondragon, a system of cooperatives in the Basque country of Spain. Mondragon is nothing less than a cooperative economy. It includes industrial factories, employing thousands of workers, that produce machine tools, furniture, bicycles, stereos, refrigerators, construction equipment, buses, and small ships. A retail cooperative has 270 stores and hundreds of workers, with sales in excess of \$300 million.

There are housing co-ops which total over a thousand apartments. Mondragon includes a system of cooperative schools, from primary education to colleges and technical schools. There are agricultural and service cooperatives, a cooperative bank, and an independent social security system. All of these institutions, and the system as a whole, are democratically controlled by the workers. In all, the system employs over 20,000 people, with sales of \$1.6 billion a year. It grew to this size in just over fifty years, and much of its growth took place when Spain was under the repressive control of Francisco Franco. How was this system created? How does it work? Let's look.

### Mondragon's History and Context

Mondragon is named after the town of its birth in the Basque country of Spain. Basques have a history, language, and culture distinct from Spain's, and there is an ongoing movement for a separate Basque nation.

In 1941, a Catholic priest named Jose Maria Arizmendiarieta (or Arizmendi, as he was known) was assigned to the Mondragon parish, where he immediately began helping the people organize for the improvement of their society. As political parties and labor unions were outlawed by Franco's government, the Catholic church was one of the few "covers" people could use for social change. Arizmendi led discussions in his own social gospel, speaking to his parishioners about the dignity of work, the need for cooperation and solidarity, and the importance of education. Since unemployment was rampant in the region, Arizmendi and his students formed a cooperative technical school with the support of the community. By 1956, the first cooperative business had been created: a stove factory.

The Basque nationalist energy that was repressed under Franco now had an outlet in

the revolutionary, though totally legal, development of the cooperative movement. In less than ten years, Ulgor, the original cooperative factory, grew from a tiny firm to one of the 100 largest in Spain. The founders of Mondragon also saw the advantages of creating a system of interlocking businesses that traded with each other, and many of the new cooperatives were created to manufacture materials needed by the existing cooperatives. Arizmendi insisted on the early establishment of a cooperative bank. Also, the cooperatives were exempt from Spain's social security system, and thus instituted their own.

### The Invisible Structure

Mondragon has stayed true to its democratic beginnings. All major policy decisions are subject to a majority vote of the members. In each company, the management council carries out the day-to-day administration. They make proposals on major policy decisions, but they cannot expect that the worker-members will simply rubber-stamp their proposals.

A unique feature of the cooperatives is the social council, which operates parallel to the management council. While the management council looks after the interests of

the members as co-owners of the business, the social council addresses their concerns as workers, dealing with issues such as pay and workplace safety, and sometimes challenging the proposals of management. The social councils originally functioned as surrogate labor unions; now unions are legal in Spain, and they are free to organize in the cooperatives, but most do not see the need.

The individual companies within the Mondragon system are autonomous in theory, but in practice they are interdependent. The Caja Laboral Popular (Bank of the People's Labor) is a "cooperative of cooperatives" that can use the deposits of the existing firms to fund the creation of a new one. A group of

**"The founders of Mondragon saw the advantages of a system of interlocking businesses that traded with each other"**



several companies may form a cooperative group that shares profits and losses, thus making market ups and downs easier to bear. Cooperatives may make purchasing agreements with each other, and they may share workers to prevent unemployment. Issues of concern to the Mondragon system as a whole are decided by the Cooperative Congress, a 350-seat assembly elected by the workers.

The Mondragon cooperatives have been leaders in redesigning factory work. At a dishwasher factory in the town of Vergara, there are no assembly lines. Instead, the frames of the dishwashers are moved along a cable from one work station to another. The workers control the pace of the work themselves, and they are responsible for their own quality control. The Vergara factory has no foremen. There is one official, called a *gestor*, between the workers and the plant manager. The workers at the dishwasher factory, and at other firms where work has been redesigned, say the innovation has made their jobs more challenging and rewarding, and less monotonous.

### The Lessons of Mondragon

In a world of competition and inequality, Mondragon is a powerful example of economic democracy. Why did Mondragon succeed when other cooperative projects have failed?

The Mondragon movement is founded above all on democracy and egalitarianism. Each worker-member has access to all the records of the company, and each participates in decision-making. To guard against hierarchical control, the system has established a strict pay ratio linking the income of the highest-paid manager to the wage of the entry-level worker.

The Mondragon movement, with other cooperatives, places the "social motive" over the profit motive. As Arizmendi put it, "The cooperativist distinguishes himself from the capitalist in that the latter uses capital in order to make people serve him, while the former uses it to make more gratifying and uplifting the working life of the people."

Arizmendi imbued the movement with a unique blend of idealism and pragmatism. His ideas were radical, yet he focused on what was possible. Rather than fomenting political revolution, the cooperators simply began to reorganize their society in a revolutionary way.

Another strength of the movement is the willingness of its members to question their own ideas and methods, and their ability to adapt to changing situations. This approach is brought into focus by an expression that Arizmendi popularized: *se hace camino al andar*, "we build the road as we travel."

In addition, the movement promotes small-scale operations. Whenever a component of a company's operations can be self-sustaining, a new company is created. This principle complements the interdependence of the cooperatives.

In all things, the cooperators stress the need for *equilibrio* (balance). And herein lies the greatest lesson we have to learn from the Mondragon cooperators: our society is out of balance, and it is possible to change that. △

### Recommended Reading

Morrison, Roy. *We Build the Road as We Travel*. (Essential Book Publishers, Warner, NH. 1997).

Whyte, William Foote and Kathleen King Whyte. *Making Mondragon*. (ILR Press, Ithaca, NY. 1991).

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# Housing Ourselves, Naturally

Peter Bane

**M**ost of my community lives in substandard housing. In fact, many are almost homeless. Families are crowded into tents, some homes have no walls; others are without heat.

For some North Carolinians this story is the result of Hurricane Floyd, but for members of the Earthaven village community, where I live, inadequate housing isn't a recent disaster, but a step on the road to something better. People here have chosen to make a better way of life for themselves, and most are already building homes which will provide them warm and comfortable shelter.

Not everyone has the opportunity (or the stamina) to live in a tent for months at a time, but the fact that this challenging way of life seems better than paying high rents for space in the city says volumes about the state of housing in this country. A recent national study reports that a minimum wage job is inadequate to provide shelter for a family of four in all 50 states!<sup>1</sup> The globalizing economy is squeezing most Americans hard: real incomes have shrunk, leisure time has declined.

There may be more jobs, but they offer lower wages and fewer satisfactions. People are working harder and longer hours at soul-crushing jobs just to make ends meet.

In the face of these trends, Earthaven's vision of a cooperative, human-scale community, designed and built in harmony with the natural world, where the land and many resources could be owned in common and the village could regulate its affairs by direct democratic means has appealed to many. A whole wave of younger members have joined the community in the past year, validating the vision of its founding core group: two dozen, mostly greying baby boomers, whose idealism survived the stagnant seventies and the excessive eighties to reemerge—older but wiser—in the runup to the millennium. Squeezed out of the American Dream, our village newcomers, refugees from the New World Order, have brought youthful passion, strong backs, and young children to a community short on all of the above.

Still, homelessness or its functional equivalent is no fun. The mountain winters here bring stormy winds, plenty of snow, and freezing temperatures. Life in a tent has its limits.

Out of this crucible of environmental and social activism, fired by the demand for better living conditions, has come an extraordinary response—a builders' cooperative has emerged from the crossing of natural building, permaculture, and intentional community. This is the story of how one community is learning to house and employ its members using resources from its own land, and by doing so to jump-start an economy in an area where no one has made a living from the earth in over half a century.

## A Farmer Meets Forestry

When Chris Farmer came to Earthaven, he brought with him a dream of being—well, a farmer. He knew that he could grow carrots, and chard, and beets, and a dozen other crops that the community needed and would love to have, because he'd done it in Washington's Skagit Valley (?). But there was this little problem: Earthaven's farmland, in fact all of its 325 acres, was covered with trees, big trees. Chris got encouragement from the community's elders and planners, and along with it the challenge to figure out how to clear a bit of forest and make it work, both economically and ecologically.

It was obvious that the community needed buildings to house itself, and for businesses and meeting rooms and offices and kitchens. It also needed to clear land in order to grow the food that would make it practical for 150 people to live in this isolated mountain valley, where the nearest supermarket is half an hour away over tortuous roads. Was there a permaculture solution that would "work both ways?" With support and guidance from Paul Caron, a philosopher and cabinetmaker who has become Earthaven's de facto architectural designer, Chris enrolled in a local workshop on horse logging. He learned directional felling, skidding techniques, and a lot about selection forestry methods. Then he and cohort Shawn Swartz traveled to nearby Goshen Timber Framing School at Franklin,

photos by Arjuna da Silva



*Early stages of framing at the Benchmark Neighborhood Common House. Building will house office of this magazine plus studios, workshop, kitchen and bathing facilities for 8-12 people.*

North Carolina to learn the basics. The jive went down. Schemes built up. Talk thickened. Could they do it? What would it take?

Earthaven's forest, it turned out, was full of trees but shy on board feet of lumber. Conventional stick framing would be too wasteful, but there weren't the big trees to make traditional timber framing practical for a hundred buildings or so. How to make ends meet in the village resource equation? And how to make it pay? Chris and Shawn and a half a dozen other members and would-be members of Earthaven were strong and smart and committed, but being young didn't have the \$15,000 saved that the community required for a membership and a house site. Some had young children and weren't setting aside a lot of income. Nor was there much hope of bank financing for a home at Earthaven, which, organized similar to a land trust, offered its members leases, not deeds that could be mortgaged.

There had to be a way for members to earn a decent living, build houses that they and others could afford, and work in the village while doing it. Without this the vision of a new way of life would be an empty promise, maybe available to a quirky few with high ideals and lots of money, but certainly beyond the reach of most who would be drawn to it.

The answer it seemed, lay in a complex formula of new joinery, local venture capital, scrupulously conservative forestry, democratic workplace organizing, and plucky determination. On a wing and a promise, the Earthaven Forestry Cooperative was born.

### Taking the Pledge

Coop members gathered in a series of meetings last winter to draft a charter to govern their relationship with the larger community. They would need access to the village forest, precious level land for a lumber yard, use of the community's saw mill and tractor, and a helping hand. They had no capital, but they had confidence and almost as important, they felt they had no better choice than to take the plunge.

Ten members signed on, pledging small startup shares. New chainsaws were bought, along with chaps and ear protectors. The charter was guided patiently through Earthaven's Council to approval. Wealthier members and friends of the community were solicited for loans: \$500, \$2,000, \$5,000.

Equipment was needed: a mortise machine to speed the cutting of complex joints, a dump truck for moving lumber, eventually a better sawmill, with hydraulics to ease the handling of logs, and a chipper to convert mountains of slabwood into wall insulation.

The community was abuzz with excitement—and questions. Here was a chance to get the buildings we wanted and needed so desperately, but did these young men know what they were doing? Would their untested construction methods really work? Would the structures pass the building code? Who would take a risk on this venture—not just lending money, but buying a building?

To prime the pump, the Forestry Coop (so called because they see their primary mission as harvesting the forest in a sustainable way) proposed to build the community a barn, something it



*Greg Clark packs straw bales into a roof-truss system created by the Coop.*

clearly needed for dry storage of bulk materials, keeping the tractor under roof, and a myriad of other uses. If Earthaven would provide the trees for lumber, and buy materials (roofing, hardware, cement), the Coop would build a barn and take payment for its labor in future credit for timber, business fees, and tractor and sawmill rental.

A debate ensued about price, with the final budget fixed at \$22,000 for a 20' x 40' two-level structure. In ten furious weeks between January and April, the barn went up, completed for 60% of its estimated cost. The ball was rolling. The boys were hot!

Loans came in. Another sawmill was found and bought, then a dump truck.

The first private contract followed, for a neighborhood common house; then for the general store and cafe, a private residence, and more. Now work is lined up well into the year 2000. Mistakes (minor) made in framing the barn helped the Coop refine its design process. The lumber yard got organized into neat stacks of wood drying under tin roofing panels: 1x4 purlins, 2x6 rafters, 4x4 posts and girts with cryptic lettering painted on their ends to show their exact place in some future building. The slabwood pile grew higher.

## Fathers of Invention

As one building after another took shape, the Coop's long hours of planning and design time began to surface as innovations in the structures. Small bits of purlin were stapled together into trusses that would allow strawbales to be used for roof insulation. The community's experience with a strawbale-insulated kitchen was bearing fruit. An R-50 ceiling keeps that south-facing building comfortable from March to Thanksgiving with no heat beyond the sun, the cooking, and warm bodies.

The truss mutated from roof to walls and became a way to hold straw-clay or blown cellulose insulation between mud plaster and wane-edge wooden siding. Coop business manager Greg Clark put his computer skills together with Chris Farmer and Paul Caron's design expertise to create a spreadsheet that allows the Coop to calculate precise load limits for any dimension timber of any species wood they cut. Knowing that 3x5 birch will carry the span or that 5x7 red oak is required, they can maximize the use of every log that goes through the mill.

Gradually the picture is emerging of ecological forestry wedded to natural building methods as scarcity and idealism beget cleverness and cooperation. Even the slabwood, which most sawmills burn, is turned into wood chips to be coated with clay slip for infill insulation of walls.

The slip-chip, unlike the traditional slip-straw, can be poured into wall cavities, rather than stuffed, making it faster while using an indigenous resource rather than an import to the region. This design edge is what promises to keep the Forestry Coop going past the season of economic crisis and surging adrenaline.

In order to make this unorthodox approach economical and their product affordable to community members, the Coop has applied technology and capital to increase their productivity. Power tools are essential to production building, yet Earthaven is off the grid and generators are noisy and expensive. To take advantage of the new hydroelectric station installed here last October, the Coop built a "Power Wagon," basically a big battery



Members of the Forestry Coop (and others) volunteer help to move a dome platform.

pack with an inverter on a trailer, which they charge up overnight (plugged into the creek, so to speak), then haul to their jobsites for silent power. They've added air compressors and nail guns, chop saws, and power mortisers to their stable of equipment, making shorter work of laying in lathe and lintels.

The economic vision seems to be manifesting as well. The Coop has drawn new members into the community, provided employment for other builders in the valley, and allowed some of its members to begin building their own homes, putting their newly learned skills and methods to work.

And the beat goes on as winter bears down on us. Coop members Shawn Swartz, Brendan Sutton, Allen Kitscher, and Brandon Greenstein are racing to close in a multi-level, common-wall residence for themselves and their families, working overtime between paying contracts for other community members. The Trading Post is walled and insulated, the Benchmark common house has a frame, an insulated roof, and is soon to get a wooden floor. And the season for cutting more trees is coming 'round again.

Out the window of the office trailer where I sit typing on hydroelectrons I can see the decaying canvas of an abandoned yurt—where Earthaven's early meetings took place, framed by the wings and turret of the community's meeting hall, now clad in glass and laced with its wiring, while beyond, in the future village green, the lumber yard sprawls, outfitted with two sheds, a well-used mill, and all the hallmarks of local industry. Across the creek the community's first agricultural field has just been cleared of timber and stumps and is getting its winter cover crop. Next spring the oaks and pines will have yielded to carrots and chard and beets, but with one twist to the tale.

It's Earthaven's strong young women, partners and friends of the Coop builders, who will be growing the food. But that's another story about cooperation. △

## Reference

1. Anelauskas, W. *Discovering America As It Is*. Clarity Press, Atlanta. 1999.

*Peter Bane publishes The Permaculture Activist and is enjoying a respite from editing this issue as he tries to complete his own cottage at Earthaven Village. Photos by the author.*

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# The General Core Model: A Tool for Decision Making

Joel Glanzberg

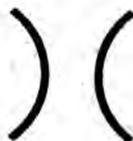
**T**he universe is a manifestation of various organizations of flows of energy. The energy may be organized into galaxies, bacteria, leopards, redwoods, or rivers. All of these organizations are temporary. Flows of energy and matter join together organized temporarily as, let's say, you. Your form changes and grows. Energy and matter flow through you—for example, all of your cells change every seven years. Yet your form or organization persists. You are like a standing wave, an organization of energy that persists while the energy and matter that make it up continually change. Eventually this organization will break down and the form will dissolve. The energy and matter flow away into other organizations and forms. This is true of people as well as peanuts.

Design is about organizing flows of energy. This is why permaculture design focuses on relationships and exchanges between elements. We are designing flows, not structures. The structures and elements are chosen and formed and placed to maximize beneficial energy flows, not to determine them. In permaculture, the tool we use to understand and work with flows we call the general core model, or general model. This is a stylized tree-like form that represents the patterns of energy flows.

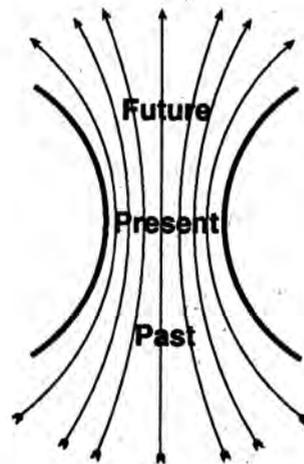
We can use the general model as a decision-making model by looking at what it really represents. Though we usually draw the general model in 2-D with closed ends like this:



it is really open-ended like this:

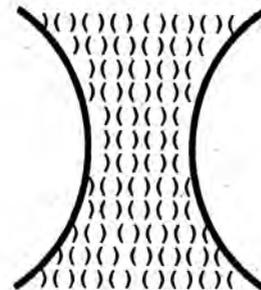


The open ends indicate that energy flows from the infinity before and to the infinity to come:

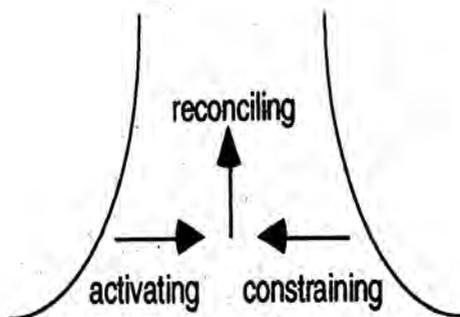


The above general model, or GM, represents the on-going design process. The center represents the present. The lower end we can consider to be the past and the upper end, the future. Every decision and action in the past has narrowed and defined the possibilities and potentials of the present. Where you stand right now has been determined by the previous steps you've taken. Where you now stand has narrowed where you can step from here. Similarly, in any design process there are multiple decisions that weave together to create the present situation and define future potentials.

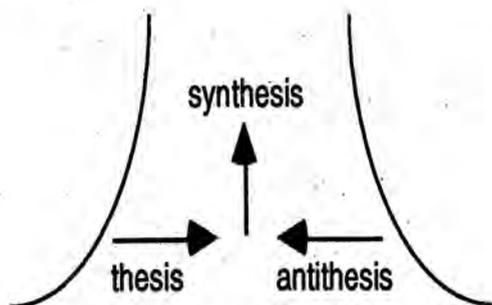
We can see this in the general model. Below, within the large GM that is the design process are numerous tiny GMs (the microcosm reflects the macrocosm), each of which represents a decision:



Within the lower half of each GM we have a three-term system operating as a pattern of decision making in which opposing forces (here called activating and constraining, to be explained below) shape the resulting design:



Many of us know this as the dialectic, in which a thesis and its opposing antithesis yield a higher truth, the synthesis:



The activating force is the desire or idea. This desire is the inspiration for the design. It is very important to start your design as far "back" in your desires as you can, at the earliest possible activating force or desire. We tend to jump ahead, thinking first about objects or laundry lists of things that will satisfy our needs, but we need to go further back. For instance, we may think we want a bright red sports car. However, when we step back into why we want it we realize that really we feel insignificant and want to be noticed. From this deeper impetus we can see other options which may be more effective (and cheaper) at fulfilling our needs.

Often in designing, people make laundry lists of what they want:

1. Greenhouse
  2. Strawbale house
  3. Bench
  4. Flowers
- etc.

This is starting too far down the road. We need to back up, into, I want:

1. Good food
  2. A warm place
  3. Comfort
  4. Beauty
- etc.

"This second list of desires expands the possible ways of fulfilling our needs. Otherwise we've narrowed our potential too soon. From the ethereal realm of desires we can start to pattern the flows of decision. Each of these activating desires or impetuses comes up against design constraints or realities, such as climate, budget, time, labor, etc. The constraints don't only limit—they also define, as a garden hose constrains and directs the flow of water.

Often the seeming conflict between impetus and constraint leads to compromise and lost potential, in which all parties get less (e.g., I have squash bugs, therefore I won't grow squash). But if we see the validity of both impetus and constraint, and hold before us the defining tension and apparent paradox, we can rise to the design challenge in a creative way that enables rather than eviscerates all the aspects. This approach embodies the thinking in which "the problem is the solution," carrying us to innovative insights that are central to good design. In our three-term system the tension between opposing impetus and constraint pushes energy in a new direction: upward.

The result is *reconciliation* (the vertical arrow, synthesis) in which the reality of the constraint lifts the desire into a greater possibility. Each reconciliation will then meet other constraints created by other decisions in a new three-term system (the other small GMs within the overall design GM). These restraints may be resource allocation, physical space, etc. Once again those seemingly opposing forces push against one another to fuel further innovation and integration of the design, forming a coherent whole. Just as the tension between strands in a basket create a whole, the tensions between desires, reality, and decisions pull on one another to define and unify the design process.

By actually visualizing the design process this way, we can be more conscious of it. We can check that we are starting far enough back in the process, in ideas and desires rather than objects (not doing this is the cause of many unnecessary conflicts). We can also be clear about the holistic aspects of the process. Most importantly we can work with dynamic flows of decisions to evolve higher orders of innovation and integration, rather than dissipating in compromise. △

*Joel Glanzberg is a permaculture teacher and designer working with the Living Structures Cooperative in Santa Fe, New Mexico. He co-developed Flowering Tree Permaculture Institute at Santa Clara Pueblo, NM. Joel can be contacted at 1594-A San Mateo Lane, Santa Fe, NM 87505.*

## Creating A Community Garden in Tucson

# Casting Seed and Deepening Roots

Marci Tarre and Brad Lancaster

*Digging in the sandy banks of the dry wash that once was the Illito (river), I stumbled upon some roots.*

*They were parched and weathered like the faces of the elders, and their stories were just as strong.*

*Water. We drank it.*

*We struggled, we grew.*

*We danced, we lived.*

*We died, we made the seeds.*

*They scattered in the wind.*

*We will always return, always return.*

*Beneath the dust of every place, beneath every neighborhood, every highway, every parking lot, every garbage dump, every hobo camp, every bank, office suite, skyscraper, and pile of broken glass, there are roots; and they are strong.*

*Roots sprout from the seeds of life. Today, our roots are growing again.*

—Leith B. Kahl, Dunbar/Spring neighborhood youth

**P**assersby can't help but notice the changes in the once-vacant lot on University Blvd. "Looks good", some say. Others yell out, "Thank you", "Gracias", or "How can I participate?"

Kids point to giant sunflowers or swallowtail butterflies, and ask to go in and play. Often some aspect of the garden will spark the memories of grandparents walking by: native plants they used to collect from the desert now growing in the mini-nature park, an *horno* (adobe oven) like their mother had, or young people planting seeds. Eyes light up, and knowledge told as stories wells up from the hearts of these elders. Their stories, and the depth of information and emotion they contain, add an essential dimension to the Dunbar/Spring community garden in our Tucson neighborhood. Not only has the project turned a vacant ball-field into a thriving fruit and vegetable garden, it has brought neighbors of differing cultures, languages, and economic and educational backgrounds together to share responsibility, recipes, garden tips, resources, and stories. Together these neighbors organized, worked, and even won grant money to realize a dream. By telling the story of how a neighborhood garden came to be, we hope to inspire others to do the same.

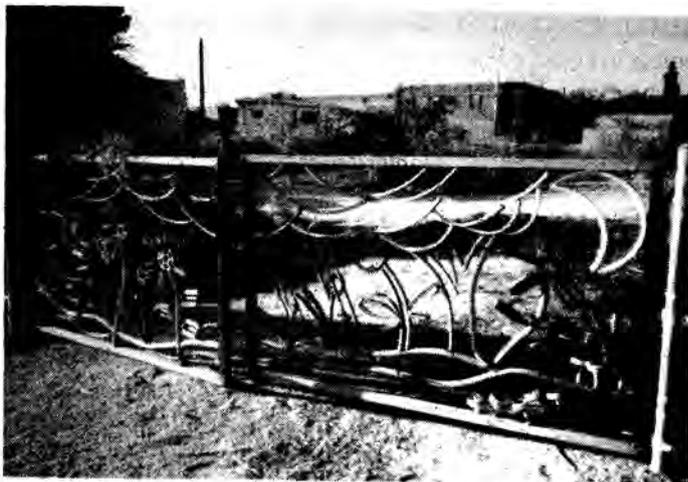
Some of the history and stories of the neighborhood are woven together in a mural painted at the community garden, a project of a local arts and community-development group called the Arts Brigade. Eight youths, including poet Leith, interviewed elders from our neighborhood and added their own insights about what makes this community especially wonderful.

Bordering this mural and our neighborhood on the south and west are the railroad tracks whose arrival in the late 1800s sparked the formation of the neighborhood, bringing new businesses and residents. To the north and east are the ever-widening roads that divide and destroy existing neighborhoods and communities. In the center of the neighborhood—and the mural—is the old Dunbar school and our community garden, the ground for new seeds and rebirth in the 'hood.

### Building the Community Coalition

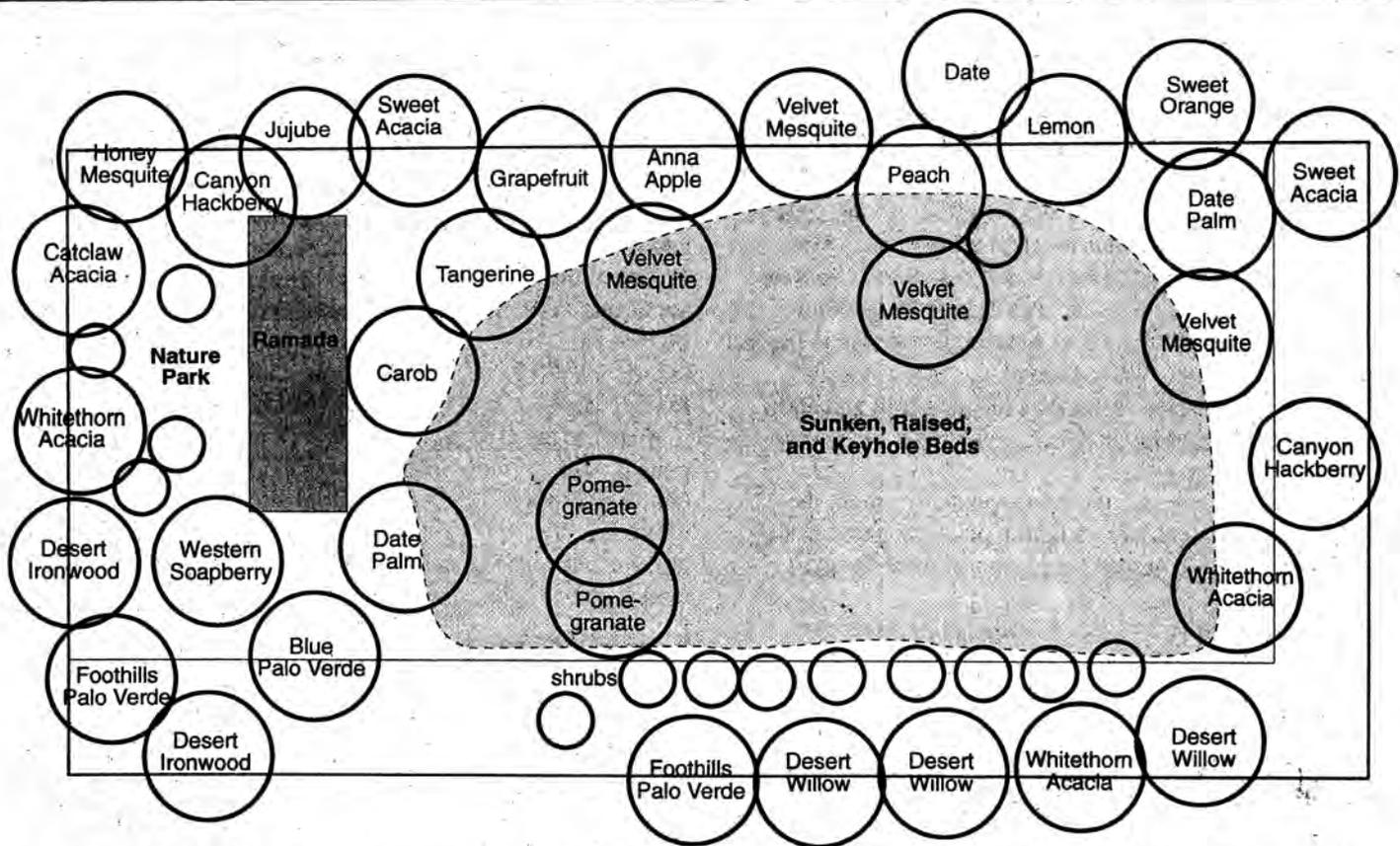
Our garden is just over a year old, but its roots already run deep into the fertile history of Dunbar School. The garden was created in what had been the old school's softball field. Both school and field were abandoned in the early 1970s. Built in 1913 as the "colored school," Dunbar became the focal point and name of a strong, predominantly African-American neighborhood.

Led by principal Morgan Maxwell, Sr., the faculty and alumni of Dunbar school joined other civil-rights advocates in the fight for racial equality, and in 1951 they saw the Arizona legislature repeal the school segregation laws. Soon after, John Spring Junior High School was added to the site, and the neighborhood later became known as Dunbar/Spring. In post-baby boom 1971 the school district closed the school. All appeared abandoned until 1994 when an alliance of four local organizations formed



Entry gate to garden and mini-nature park made from salvaged metal by Tucson non-profit BICAS. Spring school annex behind.

photos by Brad Lancaster



Plan view of the Dunbar Spring Community Garden. Shrubs and cacti include chuparosa, barrel cactus, prickly pear, saguaro, nopal, wolfberry, ocotillo, yucca, and creosote bush. Garden is 60 by 120 feet.

the Dunbar Coalition and obtained the site for \$25. Their goal: to create an African-American historical, cultural, educational, and youth center to serve the neighborhood and the rest of Tucson.

In 1995 the Dunbar Coalition held meetings to learn what the community envisioned for the site. One idea that germinated was to provide space for a community garden. At the same time, the Dunbar/Spring neighborhood association obtained a community development block grant. With the Tucson Urban League, and University of Arizona architecture students and faculty, they asked neighborhood residents and businesses to help develop a plan that reflected the dreams and concerns of those living and working in the neighborhood. And here again, the idea of a community garden sprouted.

With the community's interest in the garden and an agreement with the Dunbar Coalition to provide the land, the seeds were cast. An informal group of neighborhood residents began gathering to swap garden seeds and produce while discussing the community garden. Announcements at neighborhood association meetings and in the neighborhood newsletter invited all neighbors to participate. In 1996 the neighborhood association applied for a garden-building grant from PRO Neighborhoods, an organization that funds neighborhood and community projects and visions. The result: an \$8,000 grant for materials!

The garden group grew into the garden committee as it expanded to about 30 neighborhood residents, and we met more

of our neighbors and learned their gardening styles. The committee generated a garden design and goals. We each drew or wrote out our visions for the garden, and we then combined all visions into one. We also decided to make the garden organic. No synthetic pesticides, fertilizers, or any materials harmful to humans are allowed in the garden, thus it is safe for life forms of all ages to peck at, bite, suck, swallow, or slurp juicy ripe fruit directly from the vine. This is also a thriving reminder that chemicals and poisons are not needed to grow food.

#### Designing a Garden with the Neighbors

No one wanted rows in straight lines, so the gardens are curvilinear, thus using available land efficiently, encouraging interaction between gardeners, and pleasing the eye and spirit. Twenty-three garden beds are sunken—not raised—to harvest rainwater and create a better microclimate for plants. All pathways are elevated to shed rainwater into the sunken beds. Those not wanting or able to bend over while gardening can use three raised beds, which double as benches. These raised beds flank a 3- to 4-foot-wide path around the garden that connects a series of smaller paths, tying all garden beds together. All paths are topped with two inches of bedding soil (a "waste" soil from sand and gravel yards) mixed with ground psyllium husks (sold under the name "Stabilizer"), which binds the soil together and prevents the paths from getting too muddy when wet. This

keeps dust down, show folks an alternative material to strip-mined decomposed granite, and best of all makes the garden wheelbarrow- and wheelchair-accessible.

Garden plots are leased at one dollar a month per ten square feet to pay for water and maintenance. A mini-orchard of desert-adapted fruit trees, interplanted with native nitrogen-fixing trees, will provide food, shade, wildlife habitat, screens from hot northwestern and northeastern summer sun, wind breaks, a hedge protecting against stray basketballs (from the court to the north), and microclimates to broaden growing possibilities. The orchard is sunken and well mulched to harvest and conserve rainwater. While individual garden plots are reserved for those leasing them, the orchard's fruit and all its understory goodies (garlic, herbs, squash, chiles, etc.) are for the entire community.

We designed picnic and gathering spots throughout the garden to make it an outdoor gathering place for gardeners and nongardeners alike—a garden for everyone in the Dunbar/Spring community.

A sign board displays garden rules, planting times and advice, neighborhood announcements, newsletters, and a neighborhood directory that lists skills, materials, interests, and produce neighbors are willing to trade or share ("look to your neighbor before the store"). The gardens are an ideal site for classes and demonstrations—led mainly by neighborhood residents—on organic gardening, composting, water harvesting, solar cooking, seed saving, food preparation, permaculture, and so on.

As design continued, the Dunbar Coalition allotted more space for the community garden and mini-orchard, and set aside an area for a mini-park. The garden committee, excited by the idea of more room, expanded its plan and offered to design and create the mini-park. To encourage more residents to participate in the design process, the committee used meeting announcements, notices in the neighborhood newsletter, and word of mouth.



*The Arts Brigade mural with ramada in background.*

The mini-park was to be a nature park, demonstrating plants native to the Tucson area, which should thrive in local gardens. The park provides wildlife habitat, a peaceful and welcoming gathering space, and a demonstration of water harvesting (sunken, mulched basins). It also offers the chance to learn the vegetation of the lower Sonoran desert, since plants are labeled with their name in Latin, English, and Spanish; elevation found; and uses (edible, medicinal, wildlife habitat, dye producing, etc). We want folks to see which native plants to grow in their own yards, and to learn that they can harvest not just from the garden, but from the desert and the landscape too. The neighborhood association received a \$2130 Arizona Land Department urban forestry grant for materials for the mini-nature park!

Between the garden and mini-nature park, we planned a ramada to create more space for neighborhood, garden, and family gatherings. The ramada would also house a storage shed for garden tools, a potential neighborhood tool library, and a larger community bulletin board. We hope to host a farmers' market here as well.

### **Bring on the Volunteers**

We broke ground in early 1998. Tucson Parks and Recreation donated \$900 of organic compost and loosened the soil two feet deep with a soil ripper. The Dunbar Coalition put up a three-foot-high fence to keep out wandering dogs and vehicles, with gates facing the sidewalks and a planned playground, *not* the parking lot—we wanted people to enjoy their neighborhood by walking or riding bikes to the garden rather than driving.

When we opened the gates, the volunteers poured in. Over 30 neighborhood residents deepened their community roots by coming out on weekends to hand dig and amend all the garden beds. The garden could not have happened without this help. About 30 more people (including Americorps volunteers and other community garden groups) from the broader community also helped out over the next six months.

We built two raised beds using cement-stabilized adobe, and one from old concrete chunks salvaged on-site. Then we installed irrigation, run by a solar-powered timer with a rain sensor to cut ground water use when the soil is still moist from rain. This saves tens of thousands of gallons of water each year, and reduces the salt build-up that comes with ground-water irrigation.

When two neighbors volunteered to be treasurers, folks began leasing plots and gardening. Our eclectic pool of gardeners showcases a huge variety of gardening styles. Some have chosen common varieties of plants and keep them in neat, weeded rows. Others express a wilder side, encouraging plants to twist and twine around one another, providing a lush over- and under-story rich with life. In either case, life within the garden beds is not limited to vegetation: Birds, lizards, spiders, horned toads, and insects abound.

We're encouraging beneficial insects such as native solitary bees by constructing agave flower-stalk fences and hanging hand-made bee boxes. These solitary bees are essential pollinators for some Sonoran desert plants and effective pollinators for many others, including our fruit trees. The diversity of insects in the



*Solar-powered irrigation timer and rain sensor inside a security cage made by BICAS from old bicycle parts.*

garden serves not only the delicate "balance of life," but also the needs of a gardener and graduate student studying Sonoran desert insects.

Meanwhile, back at the orchard, Tucson Water donated backhoes and operators to dig water-harvesting basins. Tucson Electric Power (plus neighbor and Dunbar school alumnus Velton "the human backhoe" Lyles) helped excavate holes for trees. The orchard was planted and mulched with donated compost, surplus manure from local stables, and tree bark from local firewood distributors. We labeled the orchard trees so folks could learn what varieties to look for and how to plant them in their own yards.

#### **Local Plants, Local Arts**

Throughout the garden and its creation we tried to conserve resources by using found or recycled materials. If we couldn't salvage what we needed, we'd buy from neighborhood and nearby businesses to support them. A resident craftsman was hired to make a sign, bulletin board, and sundial from salvaged wood and bicycle parts. Neighborhood non-profit BICAS (Bicycle Inter-Community Action and Salvage), an innovative group that trains people to rebuild or transform thrown-away bikes into *awesome* bicycles, bike racks, toys, art, and more, made us two bicycle racks, a security cage for the irrigation

timer, a base for the sundial, stakes for plant labels, and a gate—all out of salvaged metal and thrown-away bicycle parts!

With the garden going, we started on the mini-nature park. Tucson Water and Tucson Electric Power again dug water-harvesting basins and tree holes for free. Local nurseries donated plants, including some rare specimens. A local plant connoisseur donated two Texas Mulberries; in exchange, he could take cuttings to propagate more.

We also sowed native wildflower seed. With the flowers came "weeds" such as pigweed, lamb's-quarters, and purslane. Folks on their way to mass at the old church next door—particularly the elders—have commented on the vigor of these volunteer plants, and tell how to prepare and use them as food and medicine.

A county grant managed by the Tucson Urban League has funded a youth program in the neighborhood. Supervised by a local artist, a group of young neighbors helped plant the mini-nature park, mulch the park and orchard, prepare pathways, create signs from found metal for the garden and park, build compost bins from salvaged telephone poles and wooden pallets, erect benches with salvaged-tile mosaics, plant a garden, paint the BICAS gate, weed, and place rocks in the park to delineate pathways and provide more wildlife habitat. Older neighbors gave the youths a taste of regional earth-building and cooking by helping them build and use a wonderful *horno*. In doing all this, the youths strengthened their ties to the garden and neighborhood while accomplishing an incredible amount and infusing the garden project with new energy.

That energy surged again when the Arts Brigade mural, mentioned above, was funded by another grant. To announce the mural's birth, celebrate our community's diversity, welcome more people into the garden, and dance a little, the whole community was invited to make masks, costumes, and music for a wonderfully eclectic and informal parade.

When the day arrived, the parade wound through the neighborhood and ended up at the garden where it—and the neighborhood's renewal—had begun. There, neighbors played instruments and shared food. The young people who painted the mural spoke of their experiences interviewing long-time residents. Some read poems—of birth and rebirth, cycles of life, establishing roots, and setting fruit. It became clear that the garden and its community already offered a source of inspiration, a sense of belonging, and a glimpse of the future. The garden is a reflection of the neighborhood, past and present—a neighborhood that has sown the seeds of its stories so all can grow. Δ

*Marci Tarre is a graduate student in entomology at the University of Arizona, studying insects eaten by the indigenous people of the Southwest. Brad Lancaster, when he's not in his garden, works as a permaculture teacher, designer, and consultant emphasizing rainwater harvesting and edible plants.*

*This article appeared in a slightly different form in Issue Number 32 of Permaculture Drylands Journal. It is reprinted with the permission of the authors.*

# Creating a Permanent Culture at Lost Valley

Teryani Riggs

When Bill Mollison coined the word permaculture in the 1970s, he intended it to mean "Permanent Agriculture" and later, "Permanent Culture." One cannot survive without the other. Just as human culture cannot sustain itself without a sustainable agriculture, the converse is also true: without a healthy human culture to maintain it, permanent agriculture cannot thrive. Yet permanent agriculture seems easier to address. The techniques are concrete, the subject matter is less complicated (land, plants, animals, infrastructure, time, money) and can be measured, and the principles apply to any landscape.

Permanent culture, on the other hand, is much more difficult to nail down. There are so many techniques to choose from for improving relationships between people. Also, while some permaculture principles can be applied directly to human relationships (e.g., observation: What would happen if we put all the time into observing each other that we do when we observe the elements on a piece of land; if we gave each other the benefit of protracted and thoughtful observation rather than protracted and thoughtless action?), others are more difficult to apply. Add to this the difficulty of defining just what a "sustainable human culture" is and it is no surprise that most permaculture programs don't delve too deeply into the realm of sustainable human relationships.

What would a permanent culture look like? Most of us can agree that a sustainable culture would be free of fear and violence, include caring for the earth and people, and include honesty in our dealings with each other. But where do we take it from there? Although most intentional communities are doing some sort of cultural exploration—just by living communally—few have really dedicated themselves to experimenting with creating a new culture. In fact, while most of the communities dedicated to permaculture seem extraordinary on the technical and agricultural level (the "head" work), most are having interpersonal problems among members (the "heart" work). As a result, living in these communities can be a trade-off: on one hand, the work is exciting and stimulating. On the other, the interpersonal problems can be so draining that new projects are stymied, business meetings are difficult, and the overall personal

feel of the place is tense, unwelcoming, and often impedes progress on projects.

## The Visions of Three Communities

I'm personally familiar with three communities that have realized the value of creating a permanent culture and have dedicated themselves to exploring the new paradigms in human relationships. These are ZEGG, Network For A New Culture, and Lost Valley Educational Center, where I live now and the community I'll describe in the most detail.

ZEGG (the German acronym for Center For Experimental

Cultural Design) is in Germany and began as an environmental community. In the course of their activism they found that they couldn't heal the wounds of the planet unless they first healed the wounds between men and women. They began a program of experimental cultural design, and their goal is now "to explore and pass on the spiritual and practical knowledge [gained from their research] for the building of a vivid, humane and nonviolent culture." Their research asks:

- What are solutions for the inner and outer crises of the human being? Is there a way to live together that is not based on competition and fear, but on curiosity,

contact, knowledge and love? Living together includes relationships between people, relationships with animals, with nature, and with the spiritual world.

- Is there a way of living together wherein the loving attention of one person to another no longer causes so much jealousy and fear of abandonment in a third person?

- What does the human being need in terms of practical knowledge, and just as important, what inner qualities are needed to be able to live an ecologically sane and nonviolent life?

- How could the answers to these questions have an effect in the world?

ZEGG shares its knowledge through general outreach and annual summer camps, offered both in English and in German.

The second community is the ZEGG-inspired Network For A New Culture (NFNC). NFNC is a North American group that seeks to build a sustainable, violence-free culture through

**"it is no surprise that most permaculture programs don't delve too deeply into the realm of sustainable human relationships"**

exploring intimacy, personal growth, transparency, radical honesty, equality, compassion, sexual freedom, and the power of community. NFNC is best known event for its annual Summer Camp, where over a two-week period attendees learn and practice different tools for discovering what works best for them in relating to other humans, living their authentic selves with others, and being free to act from their heart. NFNC facilitates events and programs designed to help heal the wounds between men and women, between men and men, women and women, the individual and the community, and between the community and the Earth.

One focus of the Portland branch of NFNC, the group that hosts the annual Summer Camp, is to create community. This year members and residents of four different Oregon intentional communities attended, one of which was Lost Valley Educational Center.

Lost Valley, in Dexter, Oregon, is both a non-profit educational center and an intentional community dedicated to sustainable living. The circumstances of Lost Valley's history have forced it to actively integrate its exploration of "permanent agriculture" with "permanent culture." After ten years of struggle and growth, visioning and re-visioning, as Lost Valley's Larry Kaplowitz has noted elsewhere, "the biggest lesson we've learned is that sustainable community must have at its foundation sustainable relationships."

The community was intended to be an educational center for sustainable agriculture, ecology, permaculture, personal and spiritual growth, and community development. But Lost Valley found that it wasn't enough to "do" the outward, physical work. The change in emphasis, from primarily outward, physical goals to an additional focus on the internal workings of their relationships, began about four years ago, when Lost Valley was at a time of crisis. Immense change over a short time had created tensions between the members, and the community as a whole was struggling. Lack of trust caused new ideas to be consistently resisted, rejected, or undermined in the business meetings. Some members frequently voiced concerns about emotional safety, and the community's weekly well-being meetings, intended to foster positive relationships, were consistently neglected or put off.

### The Practice of Naka-Ima

Although they were committed to living their vision and mission of ecological sustainability, the group became virtually paralyzed by conflict. By the summer of 1996 nearly everyone was frustrated, dissatisfied, and considering leaving. If Lost Valley was going to survive it would need a major change.

At about this time, Larry Kaplowitz learned that an old friend, Deborah Riverbend, and her partner Jaime Campbell had been teaching a

technique called Naka-Ima for the last three years in British Columbia with exciting results. Larry invited Deborah and Jaime to give their workshop at Lost Valley.

Naka-Ima, or "Here-Now," helps people clear up patterns that get in the way of acting from a place of clarity, honesty, and love with each other. It focuses on three actions: recognizing and releasing the attachments that stop us from acting out of our vision of who we want to be, being deeply honest with ourselves and each other, and choosing in each moment to act from our vision rather than from the "damaged" part of ourselves. The workshop allows people to vividly experience the idea that being free, clear, and connected is simply a choice that can be made any time. It also allows participants to observe themselves and each other, to build the courage to express and act from what they see, and to experience the importance of being deeply honest with themselves and with one another.

Here's an example of a Naka-Ima exercise called "milling" that we use at Lost Valley to keep our relationships clear. First we all stand up and mill around, until each person finds a partner. Each pair holds hands, looks into each other's eyes, and whoever feels moved to speak first does so. The other person listens, but does not respond. The instruction for the person speaking is to say whatever you need to say to bring you closer to your partner; to create more intimacy and connection. This may be something you've been holding on to (e.g., "I felt hurt the other day when you..."), a resentment you've been carrying (e.g., "I'm pissed that you ate the last brownie and didn't wash the pan"), a judgment about the other person, gratitude or appreciation that you haven't expressed, something you've been withholding or haven't wanted to reveal about yourself, or anything that comes up spontaneously in the moment that makes you feel more open-hearted and connected.



*After a ceremony initiating Johnathan (on left) into Lost Valley, a group of community members test the weight limit of his front porch.*

It's important to emphasize that people talk about themselves, taking responsibility for their emotions, opinions, and judgments, and that the person listening doesn't answer, agree, or disagree, but just lets it in. This is not a discussion, but an opportunity to give or receive, depending on whether you're the speaker or listener. When the speaker is complete, the listener says "thank you" and each moves on to find another person. It's fine to come back to the same person later, but only after being with at least one or two other people first. The interactions are generally brief, from 30 seconds to two or three minutes. We usually run this process anywhere from 20 to 45 minutes, or until everyone feels complete. No matter how disconnected, distracted or grumpy we may be when we begin, milling always pulls us rapidly into the present and melts our defenses. We can feel the energy in the room tangibly shift as we do this. Milling keeps the slate clean. And it doesn't need to be limited to structured occasions, like meetings. Milling is a way of life!

### Renewal of a Community

Through the Naka-Ima workshop, Lost Valley members found that, as Larry Kaplowitz has written, "the little things in our relationships—the little hurts, the small resentments, the petty judgments we have about each other—have a subtle yet pervasive undermining effect that severely limits what is possible in our relationships." They learned, too, that a deep commitment to honesty and transparency allows these little hurts to be brought out and cleared.

After the workshop many of the obstacles that had prevented the members from being clear with each other seemed to dissolve. Eventually Lost Valley designed a more cooperative and shared lifestyle.

Since November 1996, all Lost Valley community members have participated in Naka-Ima, and those who have been close to Lost Valley have seen an marked change in the health of the community. Naka-Ima has, to quote Larry again, "profoundly improved their ability and willingness to communicate directly and honestly, and has fostered a deeper level of alignment, cooperation, trust, and enjoyment within the community."

As a result, the relationships between members have become extremely solid, enabling them to be more effective in decision-making and, ultimately, in pursuing their plans as a permaculture

community. Before Naka-Ima, new plans and ideas would be squelched before they got out of business meetings. Now, individuals are trusted with their projects and the group is trusted by the individuals. As a result, numerous sustainable-living projects, permacultural and otherwise, have taken off. Where once was a group rife with lack of trust, there is now a functioning, nourishing community where the love they have for each other is noticeable in the way they treat each other.

Lost Valley's experience shows that creating a permanent culture involves not only healthy relationships between ourselves and the land we live on, but also between ourselves and the people we live with. Whether we hope to practice permaculture in community, in neighborhoods, or just with our family, to be sustainable the relationships between humans must be given at least as much energy as observing and nourishing the relationships between the other elements in our environment. Only with this understanding will we be able to create an enduring, sustainable, and nourishing existence on this planet. △

### Resources

Lost Valley Educational Center  
81868 Lost Valley Lan, Dexter, Oregon 97431  
(541) 937-3351  
[www.lostvalley.org](http://www.lostvalley.org)  
[info@lostvalley.org](mailto:info@lostvalley.org)

Network for a New Culture (NFNC)  
(NFNC Information Center, P.O. Box 205, Philomath, OR  
97370 1-800-624-8445 office: (503) 357-5323  
[www.nfnc.org](http://www.nfnc.org)

ZEGG (Center for Experimental Cultural Design)  
Rosa-Luxemburg Str. 89, D-14806 Belzig, Germany  
Phone 033841/595-10, Fax -12  
Email: [infopost@zegg.dinoco.de](mailto:infopost@zegg.dinoco.de)  
[www.zegg.de/englisch/eng.htm](http://www.zegg.de/englisch/eng.htm)

*Teryani Riggs is an environmental activist currently living at Lost Valley Educational Center. She has an avid interest in permaculture, sustainable living, and creating a sustainable culture, and can be reached at [teryani@welcomehome.org](mailto:teryani@welcomehome.org).*



# The Dark Side of Lost Valley

Larry Kaplowitz

**HERE'S THE RUB:** while everything Teryani says about Lost Valley in the previous article is true, and on my good days I, too, can often be found waxing poetic about our idyllic life here, I also have my bad days. Sometimes I have a whole string of bad days. In fact it's a rare day when at least one of us here isn't having a bad day.

What does a bad day look like for me?

It's been raining non-stop for a week in a month that has seen only three dry days. My family are all irritable and edgy from having spent the whole weekend cooped up in our one room house. I am frustrated because my "variety in work" has left me with uncompleted projects wherever I look, and my backlog of phone messages and correspondence waiting to be answered has grown to an absurd level, causing me a continual, low grade sense of guilt. The food orderer has been on vacation and we're out of fruit, vegetables and bread. Our recent deep freeze, in addition to bursting many pipes, killed most of our overwintering crops in the gardens. Several community members are sick, in the throes of yet another microbial onslaught, delivered by one of our continual stream of visitors, apprentices, and conference guests who have partaken in our touchy feely lifestyle. Consequently, every pre-meal circle now ends with a frenzied flight to the washrooms, where we queue up for the antibacterial soap to disinfect ourselves from our hygienically corrupt handholding. The phones are malfunctioning, causing every other incoming call to get cut off, and our computers all have viruses.

At our morning circle in the kitchen, everyone is soggy and puffy eyed and the energy is grim. Someone is heating up week-old rice, which is burning in the pan, and another is looking forlornly at the barren toaster. During Lost Valley winters, our primary diversion and comfort is toast, and the empty breadbox is a cruel insult. We circle, and after a long silence during which everyone looks at the floor, someone finally begins a song. Several of us join in despondently, with dirgelike effect, until the song raggedly peters out. It is Monday morning and on the plate for today are the cheery tasks of trying to figure out why our sewage system, water system and phone system are all malfunctioning. We also have to work on next year's budget to find a way to recover from our deficit from last year, and to once more redesign our organizational structure so we don't end yet another conference season burned out, frustrated and broke. Several of us are beginning to feel desperate because it seems like it will never get done, should have been completed a month ago, and probably won't work anyway. Add to this mix occasional Y2K panic attacks, relationship blowouts, existential crises, automobile breakdowns, lice, pinworms, mysterious rashes, and seemingly irreconcilable philosophical differences, and I begin counting the hours to bedtime.

I sometimes think of Lost Valley as a whirling centrifuge, where all our impurities, both individual and cultural, are pushed to the surface at an accelerated pace, continually erupting to the surface like boils. While this affords tremendous opportunities for growth, self-discovery, and healing, it also makes for an unrelenting intensity, particularly in the summer, when dozens of new people are thrown into the hopper every week. Depending on my mood and frame of mind, this can make for abject agony or blissful ecstasy. And I can switch from one to the other without warning. This way of life is not for the faint of heart nor the weak of spirit. It is a warrior's path, for those whose vision (or bullheaded stubbornness) is stronger than their desire for comfort. Comfort, however, can be a good thing, and in my weaker moments I have succumbed to thoughts of returning to the good life, from which I bid a hasty retreat five years ago. Then I remember. Wherever I go, there I am. This is as good as it gets.

Yet Lost Valley is, as Teryani says, a functioning, nourishing community. Something is working. Perhaps all this is what it takes to create the space in which our love and compassion can grow. Welcome to community. And don't forget to wash your hands before dinner. △

*Larry Kaplowitz lives at Lost Valley Educational Center where he serves as conference coordinator, teaches Naka-Ima workshops, and is associate editor and art director of Talking Leaves magazine.*

*Reprinted from Talking Leaves: A Journal of Our Evolving Ecological Culture, (Vol. 9, No. 1, Spring/Summer 1999). Talking Leaves, 81868 Lost Valley Lane, Dexter, Oregon 97431. [www.lostvalley.org](http://www.lostvalley.org) [info@lostvalley.org](mailto:info@lostvalley.org) \$18/year, quarterly.*



*A contemplative Ed Geronimo in Lost Valley's cob phone booth.*

# Zone Zero and the *Enlightened* Permaculturist

Toby Hemenway

"THIS MAKES ME SO MAD!" I growl, throwing the newspaper onto the kitchen table. Another example of corporate greed, another despoliation, another "if it bleeds, it leads" news story. My wife turns her eyes from the busy hummingbird feeder outside the window and asks, "If it makes you this unhappy, why do you read it?"

A good question. I turned to permaculture because it offered positive solutions. The constant fire-fighting of environmental activism wasn't for me, though at first it seemed the only way to offer aid to a suffering planet. But the fragile victories seemed so fleeting and ineffectual in the face of such wholesale rapine, the constant reacting to new abominations forced a constant catch-up game, and the daily misery of watching another forest fall was too disheartening. Permaculture's constructive approach suited my constitution, my hopes, and my desire to avoid a retreat into a Prozac- and Xanax-induced Lotus-land.

Yet those lists of genetically modified foods, the lobbyist-bought Senate riders, the battering at the Endangered Species Act still grab my heart and set my bile ducts squirting. What good is that anger doing?

Plenty, I imagine Bill Mollison would tell me. Bill has readily declared that it is anger that motivates him to do his award-winning and important work. Anger is a powerful force. When Bill regales a group of students with a tale of a once-healthy Mexican fishing town reduced to starvation after a pet-food cannery moved in, and he finishes with, "So instead of buying pet food, you should just murder a Mexican child and feed him to Fido, because that's basically what you're doing," everyone is outraged, feels a little guilty, and is ready to change the world.

Permaculture, like many revolutionary fields, has its share of angry, cantankerous men (and generally they *are* men). We all know a few of these crucial agents of change. Their ranks are legion in new endeavors, whether it's John L. Lewis raging at the miserable conditions of coal miners, Martin Luther spiking his 95 theses to the Wittenburg church door, or T. H. Huxley—Darwin's bulldog—eloquently reducing the opponents of natural selection to impotent sputters. These giants inspire, motivate, and create.

But their anger also leaves wreckage in its wake. Trailing many of these charismatic people, along with their superb works, are fractured communities, confused and bitter followers, broken marriages, and often, an opposition just as motivated to thwart them. When anger is the propellant, the line between inspiring and antagonizing is easily broached.

## Raging Bulls and Charismatic Curmudgeons

Angry people seem essential for revolutions. But as permaculture matures and its boundaries grow more defined, I'd

argue that there is less need for raging bulls and curmudgeons. I respect and cherish the work—and, yes, the personalities—of those angry men. We wouldn't be here without them, and their place at the head of the table is always open. But sustaining revolutions calls for different methods than does creating them. The latter is a process of crashing down the door and raising the alarm. The former requires knitting a community and welcoming the converted, the hesitant, and the opposed. Someone seething with rage or with any other unresolved manifestation of what Jung would call the shadow will continually boil over and spray friend and foe alike with venom, poisoning a healthy network.

I don't mean to single out angry men. We each have our challenges, our sharp edges that can wound those whom we care about and work with. Many communities and movements, though united by a common vision, stumble when personality—our fears, anger, insecurities, or ego—rears its head. Recently, yet another set of my friends left an intentional community. "We spent all our time in meetings," they lamented. "Just deciding to fix the washing machine took six hours of consensus building. Nothing ever got done. I couldn't take it."

Successful communities possess, or are forced to develop, more than just a common vision. Their members also devise techniques for working with each other. Often this means calling in a counselor or other specialist to give them tools to identify the personal conflicts and motivations that underlie their community's dynamics, and to separate personal issues from community needs. Only then can they make progress—usually independently—on either the interpersonal or communal front. Those six-hour washing-machine meetings are often group-therapy sessions in disguise, a cacophonous roomful of inner children, shadow selves, and unconscious coping-mechanisms wrangling over deep, unspoken issues. No wonder nothing ever gets done. If I think I'm discussing washer repair when I'm actually battling the ghosts of a neglectful father and mercurial mother, we'll be in meetings until I've had a psychological breakthrough. Fat chance, under those circumstances.

## The Enlightened Permaculturist

With this in mind I make a plea for more personal work, for more conscious and mindful action in permaculture. An enlightened permaculturist, if you will. A trend toward this is already underway, seen, for example in the evolution of permaculture teaching. Initially the design course was a lecture series—often taught by one or another charismatic curmudgeon—and although the material was far more holistic and vital than most college curricula, the format was straight from an airless classroom.

Early permaculture students recognized that the community-building aspect of the design course was as powerful and

motivating as the content. When these students emerged as a second generation of teachers, they doled out some of the curriculum in an experiential and team-building format, adapted to diverse learning styles. Some of these new teachers have taken non-traditional schooling themselves, and many have pursued spiritual paths or deep personal work. They have brought a different consciousness to the design course.

A second example of permaculture's evolution is in the growth of the concept of Zone Zero. Originally defined in the zones and sectors design-scheme as the house itself, Zone Zero rapidly enlarged to include the home's occupants. More recently the definition has shifted in some circles to mean the mental and emotional state of the designer, residents, and of permaculturists in general. "Working on Zone Zero" means getting your act together. It's an eminently useful concept that can serve as a call to more conscious design and living.

Last summer's "Build Here Now" convergence among permaculture, natural building, and spirituality at Taos-based Lama Foundation highlights the trend. Lama's small spiritual community was nearly overrun with a hundred mud-daubed builders and pontificating permies. But Lama's constant reminders of life's higher purposes—fluttering prayer flags, the wail of early morning devotional song—and the nurturing, enfolding atmosphere created by the community fostered a level of meaning and connection I've never experienced at conferences, even in permaculture. I had a glimpse of a world in which our inner selves, spiritual hearts, and activist hands were united.

#### Evangelists or Listeners?

Permaculture has always argued that acknowledging the cultural milieu of the design client is critical for success. I'd apply this principle to our field in general: Unless permaculturists explore the matrix of psychological forces that unconsciously motivate and rule us, and we resolve the hidden sources of our anger, need for recognition, or other manifestations of inner conflict, we'll continue to sow the seeds of our movement's destruction and be ignored or disdained by the mainstream world. To create sustainable communities requires the highest form of self-reliance: emotionally healthy people.

What would the "enlightened permaculturist" look like? Perhaps this: Say a large corporation wants your help in designing a new office site. If you go to them, fired up with the dogma of sustainability, and say "You guys are fundamentally evil, you're doing everything wrong, and I'm going to tell you how to do it right," they'll dismiss you out of hand. Many of us regard the mainstream with just this contempt. However, if you begin by listening to them, asking them, "What are your goals?" you'll find that their aims aren't "to destroy ecosystems and enslave the world," but more likely, "to have more productive employees and avoid waste."

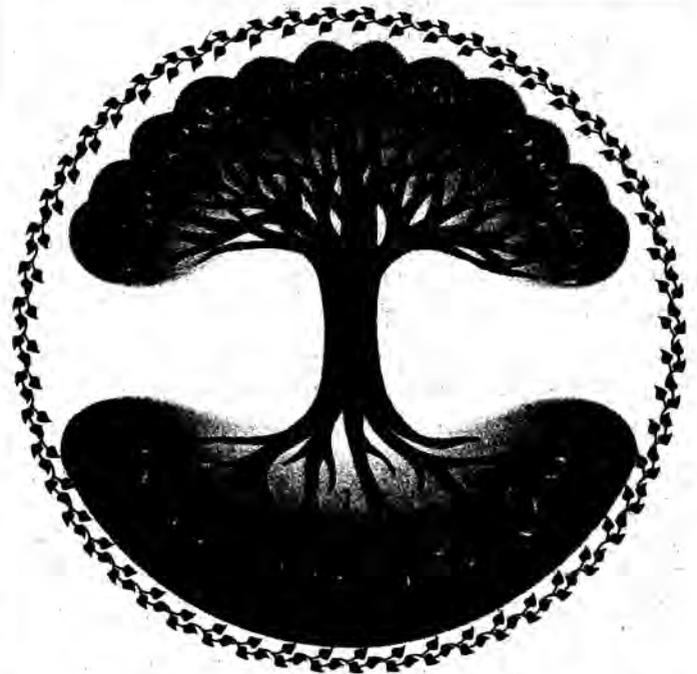
Let's think about the phrase, "more productive employees" and see how helping a company achieve that goal can serve a larger purpose. Back in the days of manufacturing-based business, higher productivity simply meant giving a worker a better machine and ordering her to make more widgets per day. But many businesses now run on ideas. Managers can't say, "I need 20% more creativity from you next year." They must foster an atmosphere that nurtures creativity. This is where you, the designer, come in. Your marvelous office design includes more windows, less fluorescent light, a

cafeteria that serves organic food grown in the once turf-bound lot surrounding the building, a Living Machine in the lobby, and fifty other elements that enlarge the lives of those who work there.

Now those employees are not just working in a healthy climate that inspires creativity; they're entwined in an ecological, holistic way of living. They begin to see the possibilities for their own lives. Who knows, maybe some of them will be inspired to chuck the corporate rat-race and live a meaningful life. All this simply because you helped a corporation achieve their goals, gently implanting a larger agenda as you did so. Turning our backs, or shouting in rage won't do this.

Permaculturists are bursting with a new message. We want to tell the world. But nobody likes being told they're wrong; proselytizers are notoriously unpopular. The hallmark of much of what I'm describing here—teaching permaculture differently, helping communities survive, working with the mainstream—requires that, though we're bursting to talk, we get quiet and listen. This theme echoes throughout this magazine: when Vishu asks us to listen to our archetypes, when Joel points out that returning to our earliest desires yields good design, when Christopher and Tom describe circles in which we hear the concerns of others, when we learn to work together deeply.

Permaculture is based on observation. I ask that we observe ourselves—our hidden, internal ecosystem—more carefully, so that our actions with one another may be more conscious and less the product of old habits. By the simple act of careful, mindful listening to what speaks within us, listening to what others need to have us hear, we can dispel anger, open doorways, and forge lasting alliances.



*Though familiar to permaculturists as the general core model, the tree of the cosmos has a long archetypal history. The visible branches of the Upperworld are mirrored by the vast roots of the Lowerworld. They are connected by the trunk, the axis mundi of mythology, which also passes through our Middleworld and is the means of passage between all three. Copyright © Archetype Design Publications*

# Toward a More Sustainable Agriculture Petroleum-Free with the Solar-Electric Tractor

Stephen Heckerth

Most talk of sustainable agriculture revolves around organic methods, precision cultivation, or integrated pest management. We don't talk much about agriculture's petroleum dependence. Sustainability requires that we maintain air, water, and soil quality, and use resources efficiently and equitably. At the turn of the last century, over half the people in this country lived sustainably on family farms. One hundred years later, less than 2% of the population grows most of the food.

The development of farm machinery and a distribution system powered by fossil fuel is largely responsible for this phenomenal gain in productivity. As we approach the peak of world oil production it is time to ask about the social and environmental cost of oil dependence and to explore sustainable alternatives. One such alternative is a new solar-powered tractor I have built. Here's why it makes sense and how it works.

The finite nature of petroleum is universally acknowledged, yet we ignore the coming end of the petroleum resource. Food production and distribution in the developed world has become so dependent on petroleum use, it's hard to imagine how agriculture will function without it. The latest records from the US Department of Agriculture state that US crop production consumed 1.4 billion gallons of gasoline, 3.5 billion gallons of diesel and 0.9 billion gallons of propane in 1994.

In the early 1970s, US domestic oil extraction peaked. Instead of learning to live within our means, the US set its sights on controlling world oil "production." The current oil glut is the result of successful US corporate and military control of world oil extraction (the more accurate term).

The spiraling of excess supply, lower prices, and increased consumption is shortening the time to peak world oil extraction, predicted by experts to happen in less than 20 years.

## Predicted Peak in World Oil Production

Source	Peak Date
F. Bernabe, ENI SpA (1998)	2000-2005
C. Campbell and J. Laherrene, consultants (1998)	2000-2010
J. MacKenzie, World Resources Institute (1996)	2007-2014
OECD's International Energy Agency (1998)	2010-2020
DOE's Energy Information Administration (1998)	<2020

When the peak comes, a crisis similar to that suffered in the US in the 1970s will be worldwide and will last until an alternative to petroleum is found. Aside from oil depletion and the health risks from exhaust and noise, many other concerns are raised by our dependence on fossil fuel: soil compaction, global climate change, loss of biodiversity, loss of traditional farming skills and indigenous food supplies, armed conflict, and the return to a feudal system.

## Soil Compaction

Soil in its natural condition is a sponge of living and decomposing organic matter. Compaction restricts the soil's ability to absorb water, which limits ground water recharge and increases runoff. Runoff carries soil into streams and rivers, diminishing the quality of both land and water. A person walking compacts the soil at about 2 to 3 pounds per square inch (psi). A well designed tractor with flotation tires can exert even less pressure on the soil. However, a car or heavy tractor with an aggressive tread can exert more than 20 psi and turn healthy soil into pavement. Wet soils are more susceptible to compaction, and production pressure often causes farmers to enter fields too soon after rain. Refined petroleum products have given modern farmers the power to treat soil like a lifeless medium to be plowed, sterilized, and chemically fertilized, then plowed again. Conventional farming leads to a loss of soil quality and the erosion of 3 billion tons of topsoil in the US each year.

## Global Climate Change

Every gallon of fuel burned creates 20 pounds of carbon dioxide which has been implicated as a major factor in global climate change. The changes forecast by scientists will have a critical effect on agricultural production, especially in populated equatorial regions.

Fourteen of the 20 warmest years in the last century have occurred since 1980, with 1997 and 1998 being the hottest on record. Some regions have suffered crippling drought while an increased number and intensity of storms has caused flooding, high winds and erosion devastating agricultural areas worldwide.

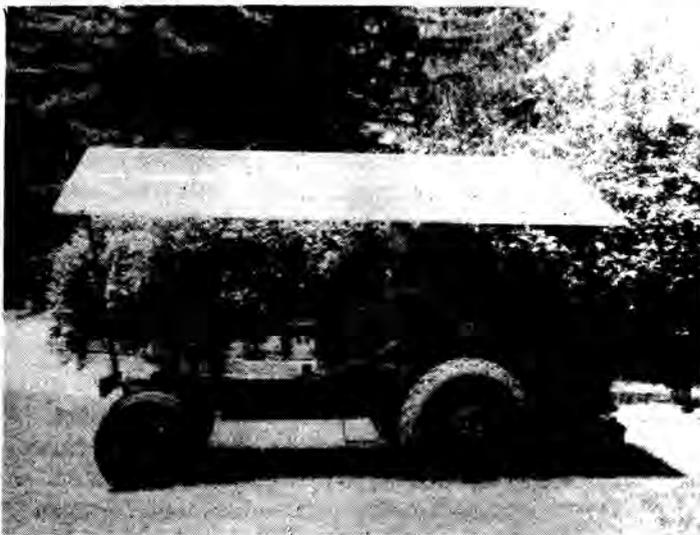


Figure 1. Solar-electric tractor with seat in front-facing position. Tiller on rear three-point hitch and connected to power take off.

## Loss of Biodiversity

Armed with an arsenal of genetically engineered crops, herbicides, pesticides and fertilizers and ever bigger machinery farmers do battle with biodiversity. Increased production has been obtained at the expense of a diverse genetic pool. Over 75 percent of the genetic diversity of the world's food crops has been lost since the beginning of the century.

Only 20 of the more than 7,000 food plant species now provide 90 percent of what people eat. Wheat, corn, and rice account for 50 percent. A diverse gene pool is nature's safeguard against extinction. This repertoire also provides evolution with its raw material. Each organism and its genes are the product of millions of years of adaptation and once lost they can never be recovered.

## Loss of Traditional Farming Skills and Local Food Supplies

Reliance on fossil fuel has reduced the manual labor necessary to grow food, but labor intensive farming methods passed down for centuries—even millennia—have been lost. As monoculture agribusiness spreads to developing countries more traditional farming skills and indigenous food supplies will disappear. Those who formerly took pride in being able to feed themselves, their families and their communities are stripped of their land and livelihood and the joy and understanding that comes with participation in the cycle of life is lost.

## Armed Conflict and the Return to Feudalism

Less than 20% of the world's population now exploits and controls the world's entire petroleum resource. Current trends suggest continued consolidation of power over the earth's remaining resources by a handful of global corporations. To make matters worse, the developed countries are pushing their oil-dependent technologies on the rest of the world. If this continues, agribusiness monoculture will completely displace traditional farming methods in developing countries at about the time petroleum is depleted.

As the energy available from finite resources is exhausted, competition over the last remaining supplies will turn into global conflict and the work now done by machines will be replaced with a feudal system or forced labor until an alternative is found.

## Transition Fuels

Returning to a labor-intensive agrarian economy is not likely for a burgeoning population that thinks food comes from the store. To increase production, draft animals have been successfully used for centuries. But it takes at least three acres of prime agricultural land and more than 10 acres of grassland to feed one workhorse. Biogas and waste vegetable oil are very important transition fuels capable of powering conventional agricultural equipment. However, the long-term pressure to convert agricultural land to biofuel production would result in a decrease in food-crop land, and the burning of biofuels still creates harmful emissions.

Fuel cells have also been suggested. But fuel cells produce electricity and would require converting tractors to electric propulsion. The hydrogen used in fuel cells is obtained either by the electrolysis of water, which uses more energy than is available from the hydrogen produced, or is reformed from fossil fuel.

Electricity is a good transitional fuel because night-time charging takes advantage of the utility's excess off-peak capacity and improves the overall performance of the grid. Electricity is also



Figure 2. Solar electric tractor with seat in rear facing position featuring improved implement visibility and auxiliary battery pack mounted on mid three-point hitch.

an ideal long-term sustainable fuel because it can be efficiently generated from renewable sources without causing pollution.

## The Good News

More solar energy strikes the earth every day than the energy available from the world's entire petroleum resource. This means that there is a clean, virtually unlimited supply of energy from the sun which can be harnessed to satisfy most of our energy demands. Solar radiation has been used throughout history as a heat source or to dehydrate food for storage. Wind and rain are also by-products of solar radiation and have been harnessed by people for thousands of years. Wind and falling water have been used as a power source for tasks like pumping irrigation water or milling flour for bread. More recently wind has been harnessed to generate power, and in areas with high average wind speed wind generators are the least expensive means of producing electricity.

The energy available from water flowing down hill in intermittent streams that do not provide fish habitat is a largely untapped source of electricity. By collecting runoff and piping it downhill to a small electric turbine, erosion can be avoided and electricity produced at the same time.

The invention of photovoltaic (PV) panels allowed solar energy to be converted directly into electricity. The PV panels currently on the market have can convert over 10% of the solar energy available into electricity. This means that every square meter of photovoltaic panel exposed to sunlight is capable of producing 100 watts of electricity. Photovoltaics are 30 times more efficient at converting solar energy into electricity than an electric plant powered by biofuels, and millions of times more efficient than fossil fuels. Wind generators and microhydro electric turbines are an ideal complement to electricity produced by PV panels for providing power throughout the year.

## Electric propulsion

Electric propulsion is the only high efficiency, zero-emission technology now available to power agricultural equipment. Electric motors have only one moving part and require little maintenance.

Internal combustion engines, on the other hand, have hundreds

of moving parts and require a lot of maintenance. Electric motors can operate at over 90% efficiency while combustion engines are less than 15% efficient. Electric propulsion is ideally suited to high torque, slow speed agricultural operations.

Electric motors do not idle, thus saving energy. Plus, while going down hill or braking, an electric motor can become a generator and return energy to the battery. This process, called regenerative braking, further increases the efficiency of electric propulsion and cannot be duplicated using other fuels. Electric-wheel motors eliminate the need for an internal combustion engine, transmission, and differential, allowing new options in the design of tractors. Mounting an electric motor in the hub creates a self-propelled wheel that offers a new level of versatility and visibility.

### The Electric Tractor

The biggest obstacle to the performance of most electric vehicles is battery weight. A tractor depends on weight for traction, thus heavy, deep-cycle, lead-acid batteries that are inexpensive, recyclable, and long-lived can be used to great advantage.

In addition to an on-board battery pack between the traction wheels, auxiliary battery packs can be self-loaded on the tractor's three-point hitches to balance implement weight and extend operating time. Electric linear actuators replace inefficient hydraulics for steering and for positioning the three-point hitches. The electric tractor has a separate power-take-off motor that can be sized for specific needs and operates independent of ground speed.

Even with the present oil glut and all-time low fuel prices there are still applications for a non-polluting electric tractor powered from renewable sources. These include greenhouses and organic farms where air quality must be high, golf courses surrounded by expensive homes where noise is a concern, planting and harvesting where very slow speeds are necessary, and remote control operation where safety is important, as well as multiple applications in developing countries that lack a fossil-fuel infrastructure and have high fuel prices. The electric tractor can also replace petroleum-powered generators as a mobile power source in remote areas and in emergency applications. Because the electric tractor is made from modular components, it can be assembled in any small shop

and does not require a large energy intensive manufacturing facility. When the petroleum resource is finally depleted, the solar electric tractor could provide a way to maintain food production.

### Multi-Position Seat

The seat can be moved to four different positions on and off the tractor, allowing a multitude of operations that could only be accomplished by several conventional machines. This is possible because all the controls are conveniently mounted on the arm rests, connected only by small flexible wires or radio control transmitters.

1) Forward high position: the same as on conventional tractors but allows unobstructed visibility for operations like precision cultivation (see Figure 1).

2) Reverse seat position. Here the solar electric tractor can replace several other conventional machines. Loaders and forklifts are designed to put weight on the traction wheels and take weight off the steering wheels for optimum performance. High-end commercial mowers are configured to put the implement out front for visibility and maneuverability (Figure 2). The operation of other implements like post-hole diggers and backhoes can also benefit from the reverse seat operation. The open space toward the front of the tractor is also an ideal place to mount a dumped.

3) Planting and Harvesting. The seat can be mounted on the mid or rear three-point-hitch and raised or lowered for planting and harvesting operations. Hundreds of pounds of seedlings or harvested crop can be stored easily on accessible trays, and the other available three-point-hitch can be used at the same time to carry a water tank, cultivator, or bed preparation implement.

4) Off tractor position. The relative ease of operating an electric vehicle by remote or computer control allows the seat to be removed from the tractor. This makes the electric tractor ideally suited for repetitive agricultural operations, bomb disposal, mine sweep, toxic cleanup and some road maintenance applications.

### Photovoltaic Charging

If an electric tractor is combined with photovoltaic charging, either on the tractor itself in the form of a shade canopy or on the roof of a building (Figure 3), no other refueling infrastructure is necessary. Unbreakable photovoltaic panels and photovoltaic roofing with a 20-year warranty are now available that can turn any sunny surface into a power station. Photovoltaics provide an ideal energy source for agriculture because the growing season coincides with the availability of solar energy.

### Conclusion

Agriculture as practiced in the developed world today is far from sustainable. Eighty years of petroleum dependence has degraded the earth's life support system to the point where maintaining air, water and soil quality is no longer enough. Humanity's survival depends on regaining the environmental quality in which we evolved. The only source of energy capable of replacing fossil fuels is the source that made them. The petroleum resource may last another 50 years, but the sun won't burn out for 5.5 billion years. Which resource do you think we should use? △

*Stephen Heckeroth, a well-known expert on solar technology, lives in northern California and owns MendoMotive, a company that manufactures electric cars and tractors.*



Figure 3. Solar electric tractor with seat mounted in planter/harvester position with photovoltaic shade canopy tilted toward the sun. 3 kW photovoltaic barn roof in the background.

# Natural Help for Beekeepers

Diane Tweten

I have been studying and reading about permaculture for about two years. Gradually, I have developed a perspective of what permaculture means to me. Something that I read recently in *Native Wisdom for White Minds* expresses that perspective: "Cultures that live in peace with life focus on participation with life, not on control." The current crisis that beekeepers face with disease and die-off of bees exemplifies this perspective.

Last year I took a group of children on several field trips to visit beekeepers. I was somewhat shocked to learn that virtually all beekeepers are medicating their bees and feeding them sugar water. I even visited a beekeeper who had been in the Peace Corps and had a different hive design that might improve bee health. He had learned of it in Africa where they were not medicating the bees. But I was disappointed to find that here, he too was medicating his bees. Many well-intentioned people have told me that they had no choice but to use the drugs, and that sugar water was the same as honey.

These things have kept me from attempting beekeeping. I just don't want to medicate bees but I didn't have any other ideas. Recently, however, I saw a movie about the herbalist Juliette de Bairacli Levy and purchased her well-known and respected book, *The Complete Herbal Handbook for Farm and Stable*. My concerns and questions were answered by her short chapter, "Natural Care of Bees." And her methods work: a neighbor of hers was using the "modern methods" when his hives were wiped out by disease while hers remained healthy.

The main points that she stresses are:

1) Killing off the chosen "true queen" and replacing her with a queen from a quieter strain in turn produces weak bees and puts the bees in shock. She feels this single practice is at the heart of bee problems, and suggests that the beekeeper just wear better protective clothing.

2) Sugar water is not the same as honey. Table sugar is a compound called sucrose, while honey instead contains glucose and fructose. Also, honey contains dozens of compounds that affect the immune system and other aspects of health and metabolism, whereas sugar is highly purified to contain virtually nothing but sucrose. The great Greek physician Hippocrates prescribed *hydromel*, a mix of honey and water, as a basic medicine for all ills. If you must use sugar, use brown sugar with a pinch of salt. Salt prevents scour, a diarrhea-like illness.

Beekeepers should simply take less honey from hives, leaving enough for the bees. Apiarists can supplement bees' food with medicinal wine vinegar, which, Levy says, bees "have a passion for" (Hippocrates also recommended *oxymel*: vinegar and honey).

Levy also observed that when she set out whole-wheat flour to warm in the sun before mixing for bread, bees would tread in it until their legs were thickly dusted, then carry it home. They ignored white flour.

Levy gives an extensive list of herbs that bees love, and considers bees to be wonderful doctors in their own right. Levy

gives a recipe for "syrup of sage honey" to feed the bees.

3) Whitewashing the hive or a giving it a limestone treatment bi-annually keeps the wood weatherproof and provides warmth in winter and coolness in summer. Paint makes the hive too hot in summer by preventing the wood from breathing. Plastic wash is even worse.

4) It is unnatural for bees to be forced into a small space, thus in winter one super should be left on the hive instead of removing all of them for the season. The supers and empty hives should be cleaned with smoke from burning aromatic vegetable matter such as pine and juniper.

5) It's best to place the hives under deciduous trees to provide protection in summer and maximum light in winter.

I think that as permaculturists we need to question everything that doesn't seem to be working, as well as anything that still seems to operate in "control mode." It is no great mystery to me that bees are so unhealthy that they need to be medicated. The same thing is true of any "factory farm." We all know that refined sugar is bad for health. How can we possibly believe that honey and sugar water are the same thing? The only reason I can think of is that it is convenient to do so.

I hope there are beekeepers out there who are willing to try something different than what they are used to. The prospect of the Y2K bug disrupting supply channels provides additional reasons to get to the source of the problem instead of using a "magic bullet" to force the bees to give us what we want at their expense.  $\Delta$

Diane Tweten lives in Portland, Oregon.



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# REVIEWS

## Work in Progress review by Peter Bane

JEFF NUGENT &  
JULIA BONIFACE

*Permaculture Plants: A Selection*  
Sustainable Agric. Research Inst. 1996.  
PO Box 10, Nannup WA 6275, Australia  
Tel: 61+ (08) 975-61271  
160pp + 8 color plates, illustrated, paper.

This is an attractive, large-format book and well-conceived. It would be a useful introduction for beginning permaculture students to a planetary range of economic species for permaculture. By the authors' own admission the work is "still not complete" to which this reviewer must echo, "Indeed!" The attempt to cover tropical and temperate climates, dryland zones and the many regions in between gives this selection a highly uneven feel.

Studies of economic botany, particularly those that cross conventional disciplinary, regional, climatic, and classification lines to embrace the many useful species required for a thriving and productive permaculture system, are to be welcomed. I incline to tolerate minor failings and superficial flaws when offered a text which intends a large-minded synthesis. Yet I cannot endorse this as more than a beginning sketch for a much larger, and still needed reference work.

Unfortunately, despite its aim of doing so, this book cannot substitute for an extensive and inevitably costly library. Its strength lies in the attempt to bring together fiber, fodder, fuel, and medicinal plants and uses with the more commonly indexed edible qualities and species.

Besides being aimed in the right direction, this book has some virtues.

The introduction challenges conventional environmentalist attitudes about species shift and non-native plants, pointing out that it is multinational corporations that stand most to gain from greater controls on seed introductions. The book offers nutritional analyses of various unlikely plants: the nut pines, some oaks, most major nut-bearing species, many minor fruits, tagasaste, and date and peach palms, to note the most prominent, that would rarely be found in one reference work.

The listings of fire-resistant or salt-tolerant plants and species for difficult sites are unusual

and will be of great use in reclamation work and broad scale site design in degraded areas. The color plates are handsome and add depth to the presentation. Many common and useful species are described in terms of their multi-functionality, and how they might be integrated with other elements in a permaculture system.

This model of thinking may be the book's greatest strength. Regrettably, too many of the entries are cryptic, presumably from the authors lacking experience with the species.

Any selection of useful plants might be expected to have biases, yet this one seems particularly quirky. The book begins with two pages on tagasaste—which arguably has helped reclaim much of the Australian scrubland, yet won't even grow in my climate—while oaks, which are perhaps the most important temperate broadleaf tree are relegated to no more than three pages of sketchy entries. Palms cover eleven pages, but bamboos only two. Grasses receive scant notice. Species listed for woodlot are almost solely eucalypts. Acacias are treated with some amplitude, yet *Prosopis* (mesquite) is ignored. The useful section entitled "Pioneers," filled with nitrogen-fixers, omits any

**“common and useful species are described in terms of their multi-functionality, and how they might be integrated with other elements in a permaculture system”**

mention of the *Eleagnus* tribe, which is only glancingly represented later in the book by Russian Olive. Kiwi (*Actinidia spp.*) and the important nutritive fruit, medicinal, and nitrogen-fixing *Hippophae rhamnoides*, sea buckthorn, a cold-hardy, salt-tolerant gem, are nowhere to be found.

The selection Boniface and Nugent have given us is only superficially a global one. The book must be understood as primarily useful to an Australian audience and readers working in the arid subtropics and mesothermal climatic zones. The inclusion of hundreds of plants from the Americas, Europe, the Near East and China notwithstanding, most North Americans would find this selection to be of limited value. I sought in vain, for instance, a reference to mimosa, *Albizia julibrissin*, a medium-sized legume tree native to temperate south and east Asia

and now naturalized from Florida to Maryland and across the mid- and deep-South.

As a non-native species it receives no mention in the authoritative regional plant guides, but is relegated to superficial notice in texts on landscaping, where its economic qualities are largely ignored. Uphof fails to mention it, though Facciola in *Cornucopia II* reports that both leaves and flowers are eaten. The questions of greater interest to me as a designer in this temperate hardwood forest biome revolve around mimosa's capacity to fix nitrogen and the qualities of its wood and leaf as a forage. These are the kinds of information and the type of species I would include were I to write a comparable guide to permaculture plants for eastern North America.

Designers east of the Mississippi would find a better, though less orderly collection of relevant species information in the 1983-86 series of TIPSYS (The International Permaculture Species Yearbook) edited by Dan Hemenway and still available at a modest cost. These latter are less compact and lack the organizing features of a single volume with a good index which this book does provide. Western American designers would do well to seek out a copy of the 1982 Pacific Northwest Tilth compendium, *The Future is Abundant*, a treasure of early permaculture genius written by this publication's first editor Sego Jackson, veteran teacher and tree stalwart Michael Pilarski, Sheri Litwin, Mark Musick, and Mike Maki. This latter comes as close as we have yet seen to a single-volume resource for an American permaculture. Published as it was, very early in the development of the permaculture movement, it lacks the integrative design element and the emphasis on earthworking which Mollison, as an Australian, inherited from P.A. Yeomans. Nevertheless, *The Future is Abundant* remains a graceful work of high intelligence and presents most of the pieces for a regional permaculture synthesis. Its species lists, though lacking information about plant provenances, are tabular, comprehensive as to categories, and well-annotated.

There is much to be learned in *Permaculture Plants: A Selection*, and by extending the slim shelf of permaculture literature it does us all a service; yet it seems to me to have come 10 or even 20 years too early in the authors' careers, before they had time to acquire adequate breadth of personal knowledge of comparative economic botany. To his credit Nugent appears to be extending his range of material with a series of more focused species collections. Sadly, at present rates of species extinction and disruption of environments, we may not have time to wait for the book we really need. △

## more Reviews . . .

### Outline for a Permanent Culture review by Peter Bane

**HILDUR JACKSON, editor**  
*Creating Harmony: Conflict  
Resolution in Community*

Gaia Trust, Denmark  
with Permanent Publications. 1999.  
269pp. paper. photos. \$25.00

The subtitle of this book is somewhat misleading. Though there is certainly much of value in this extraordinary collection about conflict resolution, the book's greater subject is the creation of community itself, a very human process in which conflict is an unavoidable, even essential element.

Hildur Jackson is a Danish sociologist and lawyer who pioneered one of the first Cohousing communities in that nation some 30 years ago. She is married to Scottish-born Ross Jackson, a successful currency trader for many years. From the slosh in the global financial system these past two decades, Jackson has diverted a modest but important stream of capital with which he and Hildur have funded the spread of permaculture education and the growth of the Global Ecovillage Network. As co-founder (with Ross) of the Gaia Trust, Hildur can take a full measure of credit for launching the ecovillage strategy for global renewal and sustainability, a finding this text amply supports.

In the lead essay Ms. Jackson sets out that strategy and the vision of cultural renewal at its foundation. She describes the character of that new age as expressing a reverence of the feminine as well as of the masculine, linking us to our past, integrating science, spirituality, and art, and being non-cataclysmic and yet holding new visions—enough to channel all the liberated end-of-the-millennium energies.

This book is a map of the DNA of this new species of ecovillage. Its 28 contributors hail from 10 countries and include many names familiar to permaculture stalwarts: Margrit and Declan Kennedy, Maddy Harland, Robena McCurdy, Jill Jordan, and Patricia Michael among them.

The essays are arranged in three sections. The first amplifies the editor's statement of vision, bringing in the broad elements of a new worldview: spiritual ecology, respect for spiritual traditions, a new metaphor for science, sacred geometry and permaculture design, meditation, holism, and the evolution of consciousness. The second section brings together case studies of conflict resolution in the context of ecovillages and communities around the world with essays on community economics by Jill Jordan, passionate poetry by Rashmi Mayur, and an overview of the New Age

communal movement by Bill Metcalf. We learn of the traditional conflict management processes of Ladakh from Helena Norberg-Hodge, the successes of the Sarvodaya Development Movement in alleviating severe ethnic conflicts from its founder, Dr. A. T. Ariyaratne, and of the emerging insights to conflict in the intentional communities at Tui (New Zealand), Lebensgarten (Germany), and Auroville (India).

This section contains a fascinating analysis by Robena McCurdy of Tui Community's successes at forming what she calls "sacred society." As a member of a five-year old intentional community in North Carolina, I found McCurdy's contribution to be the most engaging and directly applicable of the many valuable features in this book. It alone is worth the price of admission! Her essay contains nuggets of wisdom about settlement and land, infrastructure, social organization, membership, leadership, labor, finances, management and meeting, common agreements for daily living, tools for group clarity within a meeting, goal setting, parenting, gender roles, spirituality, and of course, conflict resolution. This piece would be an essential primer for any prospective community or communitarian.

The book's third section is ostensibly a collection of techniques for conflict resolution, but like the other sections, contains far more.

Patricia Michael's insights into body energies and group work are empirical, educative, and immensely practical. Diana Christian's analysis of the elements supporting successful community is a gem of great value. There are useful and insightful guides to collaborative decision making, consensus process, the use of voice, dance, and humor, the place of betrayal, revenge, and forgiveness, and the assessment of character in members to support community purposes.

Jackson acknowledges the collaboration of two other women. Maddy Harland was instrumental in the book's creation as the chief editor for Permanent Publications, publishers of Britain's Permaculture Magazine. *Creating Harmony* is dedicated to Diane Gilman, formerly of the Context Institute in Washington state. Gilman, who died last year, had been a tireless midwife to the ecovillage movement, authoring an important study commissioned by the Gaia Trust in 1991 that set the stage for G.E.N. It was she, Jackson reports, who first introduced many of this book's contributors to each other, helping to inspire their work toward a new world.

In what I imagine to be Maddy Harland's words from the back cover, "The wisdom contained in this book is for anyone who wishes to overcome humanity's greatest stumbling block—conflict—and explore new, holistic ways of living and working together. It is essentially a handbook of hope." Δ

### The Gentle Heart of Salon review by Jude Hobbs

**JAIDA N'HA SANDRA**  
*The Joy of Conversation:  
The Complete Guide to Salons*

Utne Reader Books/  
Lens Publishing Co. 1997.  
280pp. paper, illustrated. \$19.95

"To converse is human. To salon is divine." This is the entry point through which I embarked on this engaging and in-depth history and guide to the art of salon. Author Sandra tells us that "the heart of salon is conversation—the most basic, most varied, and occasionally the most elevating of all human activities." Ancient and newly reinvigorated, salons are incubators for conceiving ideas on the frontiers of social and cultural exchange.

The book glides through the history and practice of salon. The first salons were the symposia of ancient Greece, which took place just for this purpose. Every home, from that of the wealthiest Athenian to the poorest, had an *andron*. During the gatherings six to eight guests ate, drank, and dissected the topics of the day. To create a mix that fostered creative exchange, symposia mingled people from diverse occupations. But not too diverse—the symposia excluded women and other non-citizens. In response to this exclusion, some women opened their own salons. In response to this exclusion, some women opened their own salons.

The ancient Romans imitated the symposia in their decadent banquets. The Roman habit of welcoming artists and writers into the homes of the elite carried on through the centuries in Italy. Seeing these lively circles, visiting French royalty burned with envy and returned to Paris determined to imitate their southern neighbors. The new French fad blossomed especially among noble women and the wives of wealthy merchants, and birthed the French Salon. In the sixteenth century the practice spread to the middle-class, who held literary circles in their homes, support groups based on mutual interests and ambitions.

By the early 1700s, salons were as numerous as the women with the time and resources to host them. Thick directories appeared to guide foreign visitors to the liveliest salons. Through these conversational gatherings, women orchestrated the dissemination of radical theories, political rumors, and social gossip.

As the 20th century opened, American women seeking greater social freedom settled in Paris, and hosted conversational gatherings for their artistic friends. One of the most famous of these was Gertrude Stein's.

It became a necessity to devote Saturday evenings for these visitations. The openness to visitors and ability to welcome all that Stein evinced is one of the hallmarks of salon.

Salon soon leaped the Atlantic, filling coffeehouses, speakeasies, and art colonies with buzzing conversations that considered the radical upheaval brought by the Great War, industrialization, and the end of Victorian culture. But as the Roaring Twenties gave way to the Depression, World War II, and the "silent generation" of the fifties, salons went nearly extinct.

Discussion groups sprung up in the radicalized 1960s and 1970s, but usually with a specific political or social-change agenda. In the early 1970s, activist and ecologist Stephanie Mills hosted salons "to bring people together who wouldn't necessarily meet, to provide them with a leisurely, gracious environment in which to become acquainted and intellectually converse and to encourage

skylarking." Her account in *CoEvolution Quarterly* magazine (now *Whole Earth Review*) sparked new interest in salons.

Publisher Eric Utne was enthralled with her article, and in the March/April 1991 *Utne Reader* reintroduced salon through articles and a small advertisement inviting people to start neighborhood salons, study circles, or councils. Readers sent in their names and each received a list of interested people nearby. Within 16 months 13,000 people had signed up, and salon was reborn. Today salon thrives as a way to exchange ideas, build community, and engage in thoughtful, respectful conversation in its highest form.

The fourteen chapters of *The Joy of Conversation* go far beyond mere history. Sandra also offers techniques for organizing, formatting, and working with the challenges of Salon. This book will give you the tools to build, join, or energize salons in your neighborhood, or add them to workshops and classes. Δ

#### **Publisher's Note** *cont'd from page 2*

house with the likes of teacher and designer Chuck Marsh, journalist Arjuna da Silva, and our talented illustrator and webmaster, Keith Johnson, all part of a larger activist collective that is creating a model settlement, paradise garden, and permaculture teaching center.

Exceptional efforts for social innovation and the advance of useful knowledge almost invariably begin with a few committed individuals. But for innovation to fuel evolutionary change, the circle of engagement must expand. Benchmark neighborhood has space for a handful of other movers and shakers to take up residence; Earthaven Village may become home to yet a few dozen more, and through the efforts of our educational organization, Culture's Edge, we hope many hundreds and thousands will have the chance to share what we have learned in this grand adventure toward a better way of life. We invite you to consider a visit if the spirit calls; to lend a hand during one of our work jams such as Nhimbe, held this past month, or attend a workshop. But whether or not you can share a bit of our life here, if you value the work represented in the pages of this magazine, please consider making a gift to help house its ongoing outreach. Subscriber monies are greatly appreciated and help sustain the publishing effort, yet our growth and vitality have always depended on special donations above and beyond the regular business revenues.

A proper home and office (modest yet well-designed) are *sine qua non* for the continuation of *Permaculture Activist*. To hasten the day when we have these facilities, and to lighten

the load of creating them, you can send a financial contribution to our address, earmarked for "Activist Offices." Two far-sighted and generous readers have already responded.

Thanks to Julie Clark of Nevada City, California, and Olemara Peters of Redmond, Washington for their spontaneous donations to our fund.

This issue is sponsored by Culture's Edge, an educational non-profit presenting programs in permaculture and sustainable living skills at Earthaven Village. Their sponsorship has permitted us to take the important step of inviting a guest editor for the first time since Guy Baldwin offered me the chair in August 1990.

I will resume the *Activist* editorship for PCA #43, while Toby Hemenway turns his attention to finishing a book manuscript for Chelsea Green Publishing. Our next issue will take the theme **Food, Fiber, and Medicine**. Deadline for submissions is February 10th, 2000. All correspondence should be sent to our North Carolina address. If all goes well, Toby and I plan to share editorial duties over the coming year, gaining the advantage of fresh perspectives, better access to diverse contributors, and freeing my attention to consider long-term growth for the magazine and its wider community.

May the New Year bring blessings to you and yours and may the year 2000 mark the beginning of a brighter, healthier future for all beings on planet Earth.

Peter Bane

## **Why Do We Call Them "Invisible" Structures?**

review by Michael Lockman

### **HopeDance Magazine**

PO Box 15609

San Luis Obispo, CA 93406

hopedance@aol.com

www.hopedance.org

I am delighted to have been introduced to yet another periodical devoted to sustainability. This one has a strictly bioregional slant: the central coast of California. Yet *HopeDance* is relevant to all of us everywhere since the articles often focus on social or so-called "invisible" structures. Even the hands-on articles contain practical information applicable to many bioregions.

Local economy is emphasized in *HopeDance*. The magazine is thick with vital information on sustainable economic systems. Everything from L.E.T.S. to voluntary simplicity is given a voice. The result is a well-constructed journal that is also a very useful tool.

The regular "Permaculture News" column is excellent, which should come as no surprise since it is penned by noted permaculture teacher Larry Santoyo. In each issue "Professor" Santoyo broaches a topic of permacultural interest, including water harvesting, L.E.T.S., chicken tractors and more.

This is the magazine that we all need (just a different version for every bioregion): a magazine that reflects the will and needs of the community, full of education, activism, local advertisers, and diverse viewpoints. *HopeDance* is truly a model for how to develop a strong local network devoted to "moving toward a sustainable culture."

Obviously, *HopeDance* contains information that only applies to the central coast of California, such as the inclusion of "Time Well-Spent," the San Luis Obispo local currency newsletter. If you are a part of this network, you can profit from all of "Time Well-Spent." If not, you can just read the interview with noted economist Herman Daly.

What I can't figure out here—and *HopeDance* got me thinking about this—is why permaculturists call economic systems "invisible structures." Do we call them invisible because we have the most to learn about these systems, and are barely able to design them? Or maybe they are invisible because we are too blind to see that we are immersed in them all the time. Whatever the case, *HopeDance* sheds enough light on the topic so that even the most visually impaired of us can see just how visible these "invisible" economic structures really are. Δ

# ... from the Regions

## Latin American Permaculture Congress Comes to Argentina

Peter Bane

From the top of the water tower you can see for miles. An ocean of grassland surrounds Gaia Ecovillage outside Navarro in the province of Buenos Aires. Sixty miles south and west of the capital, this young community hosts the Global Ecovillage Network office for the southern cone of South America, one of eight major regions that make up the Ecovillage Network of the Americas (ENA). Gaia Ecovillage will be the site of the first Congress of Latin American Permaculture to be held next March 27-April 4. Representatives from Mexico, Brazil, Peru, Uruguay, and Argentina are expected to attend as well as guests from Germany, Australia, and the United States.

The Ecovillage and Permaculture movements have been converging for over a decade since the inauguration of Crystal Waters Village in Australia, the first permaculture-designed new village in the world. With the conscious support of the Gaia Trust of Denmark, the Global Ecovillage Network has registered over 10,000 communities worldwide which identify themselves as ecovillages, embracing the synergistic goals of economic, ecological, social, and spiritual development. Many communities at the heart of the expanding network such as Crystal Waters, Lebensgarten in Germany, Huehuecoyotl in Mexico, The Farm in middle Tennessee, and Gaia Ecovillage are permaculture teaching centers.

En route home from the first ever ENA Council of the Americas in Colorado, Gaia Ecovillagers Sylvia Balado and Gustavo Ramirez laid over for a few days of work and solidarity at Earthaven ecovillage near Asheville, North Carolina. They shared tales and photos of their accomplishments over the past four years and an infectious enthusiasm that left this writer and his friends ready to hop the next flight south.

Gaia EV grew out of the efforts of Asociación Gaia, an Argentine ecological NGO, over the past eight years. In June of 1996 a small pioneer group acquired 20 ha (about 50 acres) surrounding an abandoned powdered milk factory outside the town of Navarro, and began improving the site. Built 50 years ago by a British company that later went bankrupt, the factory had been stripped over the years of everything but its concrete shell. Nevertheless, it offered Gaia a sheltering start.

The 10,000 gallon water tower, also built

entirely of concrete, still stood after 50 years, the highest point in the area. "Miracle of miracles," exclaimed Sylvia, "it even worked!" The hardy pioneers, a mixed group of Argentines, with one or two members from Canada and the US, quickly went to work transforming the gutted factory into workshops, meeting and dining rooms, dormitories, a kitchen, a library and video room, and apartments for themselves and guests. They also set about capturing one of the other primary resources of the pampas: the wind. Gaia is now self-sufficient in electric energy. Three wind turbines generate 5400 watts of power from the near-constant breezes.

The old milk factory was immense: facilities for hosting 40 people occupy only a portion of its vast interior. As of this year over 30,000 square feet of interior space had been reclaimed. One tiled room was renovated as a laboratory, where villagers extract and bottle essential oils for national and regional markets. This export trade provides some of the cash to support Gaia's economy. The community's other main economic activity is teaching and hosting of courses and events.

The permaculture program began shortly after the first group moved onto the site, with Max Lindegger teaching a design course in December 1996.

Gaia staff led by Gustavo Ramirez presented two more courses in January of 1998 and 1999. This year they added courses in natural building when Joe Kennedy came from the US in

February to introduce cob making and other earth and straw techniques.

Gaia ecovillagers have now built their first cob structure using innovative methods to mechanize the labor-intensive mixing process. The house is bean-shaped and faces towards the north (sun-side). Thick (47cm/18in.) walls and a thatched roof, built by a thatcher from Uruguay, where the technique is common, should give excellent thermal performance. The Navarro area is at a latitude of 35°S and has a warm temperate climate comparable to the Piedmont region of North Carolina: hot humid summers and mild winters with a great deal of sunshine.

Facilities at the ecovillage include composting toilets and an artificial wetland type of greywater treatment system. Gardens have been established with over 220 edible and medicinal plants being cultivated.

A seed bank of open-pollinated crop varieties has been created. Some 600 trees have been planted, some in forest garden assemblies. The plantings including many native species with the intent of recreating and restoring the native ecosystem, long suppressed by plow agriculture and ranching in the area.

Asociación Gaia has recently entered a collaboration with the municipality of Buenos Aires, Argentina's capital and a city of some 16 million, to train unemployed people from the Villa 31 district, a slum area located five minutes from the Presidential Palace, in new skills, based on permaculture, that will enable and inspire them to transform their habit and life conditions. The first group of 25 participants will learn gardening and seed saving, use and care of tools, composting and soil improvement, planting and care of trees, recycling of waste and greywater, making of bread and food preservation, natural house construction, building of high-efficiency ovens, stoves, and heaters, making and use of solar ovens, design

*continued next page —>*



First cob and thatch structure at Gaia E.V. —>

# Movement Musings

## Credit Union Update

Scott Pittman

Here's what has been happening to the credit union since you last heard from us. We initiated the process to obtain a charter on July 6, 1998. Since then we have responded to three rounds of reviews and requests for clarifications from the National Credit Union Administration. The NCUA is the federal office which must approve our charter if we are to receive deposit insurance. We are still waiting for them to review our most recent responses to their questions. We believe there is a good chance that we will be opening our doors within a few months.

The process has seemed unduly long, in part because the last credit union launched in New Mexico opened in 1979, and much had to be learned by all involved. The steering committee has diligently met twice a month to deal with questions from the N.C.U.A. and to develop operations procedures for the credit union. We have received several generous startup grants, and we continue to seek other funds and to solicit new members. By doing these things we will be able to begin operations with sufficient startup funding and a strong membership.

As soon as we receive our charter we will contact you with specific information on how to participate in the Permaculture Credit Union. Until then, please continue to spread the word to your friends and colleagues and encourage them to enroll. If you have any questions, comments, changes-of-address, or an additional contribution to the startup fund, please send them to Permaculture Credit Union, PO Box 1812, Santa Fe, NM 87504. △

## Latin American Congress, continued from page 50

and construction of composting toilets, and the organizing of small business ventures.

As part of their continuing development as a teaching and demonstration center for the ENA, Gaia EV members have attended Bioregional Gatherings in Mexico, international GEN meetings, and will soon host the first ever Latin American Permaculture Congress. The week-long event will focus on the collaborative exchange of information, seeds, techniques, interests, and challenges, and will showcase successes in synergistic agriculture, alternative economics, appropriate technology, and permaculture teaching. The program includes presentations or interest groups in Urban Permaculture, Consensus decision making, bioregionalism, natural medicine, seed production and exchange, ecovillage design and development, and aboriginal knowledge of

## Sustainable Living News to Stop Printing After 20 Issues

### Look for a Digital Version in January 2000

Michael Lockman

We regret to announce that *Sustainable Living News: A West Coast Journal of Ecological Design* will no longer be available in print form. After 20 issues, seven of which have appeared as inserts in *The Permaculture Activist*, the *SLN* is going digital!

We already have a web page, <http://www.sustainablelivingnews.com> and plan to post all back issues, and periodically to post new content. We are considering an email

## Mollison Reasserts Copyright

Bill Mollison

Periodically it is necessary to reassert my ownership of the original Permaculture curriculum, which is also legally asserted by publication of the *Permaculture Manual* in 1988, the contents of which and the word Permaculture are copyrighted to the author. Any use of said curriculum must be by application to the author, that is, not to secretaries or other directors, but to the author only. The Permaculture Design Course handbook issued by the Permaculture Institute to students for many years now is simply a concise outline of said curriculum, and subject to the same laws. If any person writes a text book, in particular a foundation text book for a subject, no other

person can assert ownership of that text, layout, or illustrations, nor can any group of people substantially alter or assert ownership of the text. We have always specifically guarded ownership of the PC curriculum so that all students, no matter what their cultural or financial backgrounds, would have a common and equal education experience.

Both this Institute and our American Institute in Santa Fe, Permaculture Institute, Inc., are attempting to establish an academy that will be legally able to issue higher degrees. This is a long process and will not be running smoothly for some time to come. The Permaculture Institute began issuing diplomas to students after two years practical work following their certificate course in about 1988. It is and shall remain the registrar of all diploma holders globally. This diploma is widely recognized through other institutions and some universities, like Humboldt State U. and Slippery Rock U.

In the past, re-assertions of copyright have appeared in the *Academy Yearbook*, p. 17 and in the 1998 *American Permaculture Directory*, p. 6. Students publishing a curriculum which contains copyright material from the manual and course handbook may not sell that curriculum nor may institutions purchase it or teach it, even if presented under other names, such as Sustainable Agriculture or Sustainable Designs.

All such people need to write their own curricula and textbooks. It would be refreshing if people wanting to publish would create their own material and did not plagiarize my work nor my illustrations. △

Web Site of the Congress: <http://members.tripod.com/permacultores>

version. Anything to remove the printing cost.

Originally called *West Coast Permaculture News and Gossip*, the *SLN* was started by Michael Pilarski in 1992. Michael Lockman joined the ranks in 1993, and in 1996 he took over and changed the title. Issue 14 in 1996 saw the arrival of Emily Heindschmann as editor. The *SLN* team also included Marin Bjork in design & layout and Bert Hopkins, web site design. And Simon Henderson was guest editor for issue 17 on bamboo. Over the past eight years the publication has grown in size to 16 pages and in distribution to 1100 readers.

It has been a joy to serve the permaculture, natural building, and sustainable living communities on the West Coast. And it is our intention to continue to provide an educational newsletter to those communities.

Anyone interested in joining our digital adventure in publishing is encouraged to contact me at [michaellockman@juno.com](mailto:michaellockman@juno.com) or via snail mail at *Sustainable Living News*, PO Box 45472, Seattle, WA 98145. △

# EVENTS

## Permaculture Design Course Northern California—Sonoma County

**Dates:** Feb. 5-18, 2000

**Location:** Occidental, CA

**Description:** A full certificate course led by two of California's most accomplished teachers of permaculture design with additional guest lecturers. The Occidental site has extensive and highly diverse gardens set in a model 80-acre site. Topics covered include principles and ethics, ponds, erosion control, forest farming, organic gardening, composting, plant guides, beekeeping, natural building, community economics, and more.

**Instructors:** Penny Livingston and Brock Dolman.

**Cost:** \$900-1,000, sliding scale, includes meals, lodging, and curriculum materials. \$100 non-refundable deposit required for registration. Some work exchange is available.

**Contact:** OccidentalArts&EcologyCtr  
15290 Coleman Valley Road  
Occidental, CA 95465  
707-874-1557, fax/-1558  
oaec@oaec.org,  
www.oaec.org

## Starting and Sustaining Intentional Communities Northern California—Sonoma County

**Dates:** Feb. 25-27, 2000

**Location:** Occidental, CA

**Description:** This weekend course is designed to help you actualize your dream of a land-based intentional community. Topics include: finding and financing land, legal mechanisms for owning/holding land, organizing as a "for profit" or "non-profit", group decision-making, finding like-minded people, financial organization, legal and insurance issues and costs, dealing with government zoning and regulations, and long-term planning. Includes tours of OAEC's buildings, gardens, and permaculture projects.

**Instructor:** Dave Henson, guest presenters.

**Cost:** \$250-300, sliding scale, includes meals, lodging, and curriculum materials. \$100 non-refundable deposit required for registration.

**Contact:** Occidental Arts & Ecology  
15290 Coleman Valley Road  
Occidental, CA 95465

## Permaculture Design Course Northern California—Sonoma County

**Dates:** May 13-26, 2000

**Location:** Occidental, CA

**Description:** At Occidental Arts and Ecology Center. Residential intensive course leading to Pc Design Certificate. Guest cabins and 25-year-old organic gardens with extraordinary diversity make this venue popular. Course includes subscription to *Permaculture Activist*.

**Instructors:** Penny Livingston and Brock Dolman.

**Cost:** \$850-950, sliding scale, \$50 discount for registration by April 24.

**Contact:** Mikhael Smith  
Island Mountain Institute  
Garberville, CA 95542  
707-923-5000

## Permaculture Design Course Patagonia, Argentina

**Dates:** March 4-18, 2000

**Location:** Neuquen Patagonia Argentina

**Description:** Sponsored by the Permaculture Institute, this course will be at a beautiful ranch with a world-class trout river, sauna, horse, and hiking trails. An additional four weeks of internship and training will be available for those college students who have arranged for independent study credit.

**Instructor:** Scott Pittman. Other teachers by invitation.

**Cost:** \$950.00 incl. room & board.

**Contact:** 505-455-0270

## 1st Latin American Permaculture Congress Buenos Aires, Argentina

**Dates:** March 27 to April 4, 2000

**Location:** Buenos Aires, Argentina

**Description:** A forum for understanding Permaculture as a movement for re-discovery and appreciation of ancestral cultures, and the creation of new permanent ones. See "From the Regions" for details.

**Presenters:** Marsha Hänzi, Alejandra Caballero, Skye, Ali Sharif, many others.

**Cost:** US \$327 before December 31, 1999. Afterwards, \$397.

**Contact:** Argentine Inst. of Permac.  
Almafuerte 1732, San Martin,  
1650, Buenos Aires  
Argentina  
Tel/Fax: 011-47522197  
gaia@apc.wamani.org  
www.ecovillages.org/  
argentina/gaia

## 9th Annual

## Permaculture Design Course Western Oregon

**Dates:** November 28 - December 11

**Location:** Dexter, OR

**Description:** This intensive course, covering both the theory and practice of permaculture, will create an in-depth learning situation allowing participants to achieve working knowledge of permaculture design and implementation. Topics will include permaculture philosophy and methodology; observation skills and site analysis; natural cycles and pattern recognition; ponds, swales and keyline systems; soil building; animals; edible landscaping; agroforestry; urban permaculture and village design; community economics; and more.

**Instructors:** Jude Hobbs, Rick Valley, Toby Hemenway, and guests.

**Cost:** Sliding scale \$850 - \$1,050, includes tuition, meals, shared dorm rooms, field trips, some curriculum materials and a subscription to *The Permaculture Activist*.

**Contact:** Lost Valley Educational Ctr.  
81868 Lost Valley Lane  
Dexter, OR 97431  
541-937-3351.  
info@lostvalley.org

## 7th Annual Women's Permaculture Design Workshop Western Oregon

**Dates:** February 11-13, 2000

**Location:** Dexter, Oregon.

**Description:** The purpose of this workshop is to create a comfortable, supportive environment for women to learn Permaculture design philosophy, principles and strategies. This workshop will provide the opportunity to weave ecologically sound design patterns that connect the earth, people, plants, animals, structures, and community.

**Instructor:** Jude Hobbs

**Cost:** Sliding scale \$175-\$250.

This includes tuition, vegetarian meals, shared dorm rooms and curriculum materials. Some work trades available.

**Contact:** Jude Hobbs  
1161 Lincoln St.  
Eugene, OR 97401  
541-342-1160  
hobbsj@efn.org

## Ecovillage Training Center Permaculture Fundamentals Middle Tennessee

**Dates:** April 22-30

**Location:** The Farm, Summertown, TN

**Description:** Fundamentals of

Permaculture covers cultural transformation, principles and ethics, ecosystems, pattern, forests, soils, water, microclimate, earthworks, home systems, building design, animals, plants, aquaculture, waste treatment, tools, gardening, mapping, permaculture for cities and villages, and financial systems.

**Instructors:** Chuck Marsh, Peter Bane, Andrew Goodheart Brown, Patricia Allison, Keith Johnson, and Albert Bates.

**Cost:** \$600.

**Contact:** Ecovillage Training Center,  
PO Box 90  
Summertown, TN 38483  
931-964-4324

## Permaculture Design Practicum Middle Tennessee

**Dates:** October 6-14

**Location:** The Farm, Summertown, TN

**Description:** Completes the certificate course for those who have taken Fundamentals. A design intensive focusing on broadscale landscape and community design. The Farm Ecovillage Training Center is a node in the Global Ecovillage Network and has extensive examples of appropriate technology and permaculture systems on the ground. The Farm is a 30-year old intentional community and a pioneer in community development work both in the U.S. and overseas.

**Instructors:** Chuck Marsh, Peter Bane, Andrew Goodheart Brown, Patricia Allison, Keith Johnson, and Albert Bates.

**Cost:** \$600.

**Contact:** Ecovillage Training Center  
PO Box 90  
Summertown, TN 38483,  
931-964-4324.

## Culture's Edge at Earthaven Ecovillage Permaculture Fundamentals Black Mountain, NC

**Dates:** July 7-15

**Location:** Earthaven Village  
near Black Mountain, NC

**Description:** Fundamentals of Permaculture covers cultural transformation, principles and ethics, ecosystems, pattern, forests, soils, water, microclimate, earthworks, home systems, building design, animals, plants, aquaculture, waste treatment, tools, gardening, mapping, permaculture for cities and villages, and

financial systems.

**Instructors:** Peter Bane, Andrew Goodheart Brown, Patricia Allison.

**Cost:** \$600-\$800, sliding scale.

**Contact:** Culture's Edge  
1025 Camp Elliott Rd  
Black Mountain, NC 28711  
828-669-3937.  
culturesedge@earthaven.org  
www.earthaven.org

## Permaculture Work-Study Program Black Mountain, NC

**Dates:** July 5-August 19

**Location:** Earthaven Village  
near Black Mountain, NC

**Description:** This six-week residential program combines both sections of the permaculture design certificate course with four weeks of hands-on learning at Earthaven Village. Participants will be engaged in a variety of community and individual projects including building, gardening and farming, water management, ecoforestry, and more. Limited number of places. Successful applicants will have demonstrated maturity and a career focus in which permaculture design skills will be well employed. Applications accompanied by references must be received by June 1, 2000.

**Instructors:** Peter Bane, Andrew Goodheart Brown, Chuck Marsh, Patricia Allison, Keith Johnson.

**Cost:** \$1800.

**Contact:** Culture's Edge  
1025 Camp Elliott Rd.  
Black Mountain, NC 28711  
828-669-3937  
culturesedge@earthaven.org  
www.earthaven.org

## Village Design Permaculture Practicum Black Mountain, NC

**Dates:** August 11-19

**Location:** Earthaven Village  
near Black Mountain, NC

**Description:** Students will have an opportunity to participate in Earthaven's ongoing site plan development.

**Instructors:** Chuck Marsh, Peter Bane, Keith Johnson.

**Cost:** \$600-800.

**Contact:** Culture's Edge  
1025 Camp Elliott Rd,  
Black Mountain, NC 28711  
828-669-3937  
culturesedge@earthaven.org  
www.earthaven.org

## Ecology Retreat Center Permaculture Fundamentals Ontario, Canada

**Dates:** May 26-June 3

**Location:** Orangeville, Ontario

**Description:** Fundamentals of Permaculture covers cultural transformation, principles and ethics, ecosystems, pattern, forests, soils, water, microclimate, earthworks, home systems, building design, animals, plants, aquaculture, waste treatment, tools, gardening, mapping, permaculture for cities and villages, and financial systems.

**Instructors:** Peter Bane, Monica Kuhn, Richard Griffith, Keith Johnson.

**Cost:** Cdn\$900.

**Contact:** Ecology Retreat Center  
RR #1, Orangeville, Ontario  
L9W 2Y8 Canada  
519-941-4560  
ecorc@ionsys.com

## Permaculture Design Course for Farmers West Tennessee

**Dates:** August 28-September 8

**Location:** Silvertop Farms  
Tiptonville, TN

**Description:** This certificate course is intended for farmers or those wanting to farm with an emphasis on the mid-South and Mississippi Delta regions. Four of America's most experienced permaculture and sustainable agriculture teachers will facilitate this exciting event. Lake County, Tennessee is one of the most fertile agriculture regions in the nation—the area teems with wildlife, but is challenged by the economic and ecological dilemmas of conventional agriculture. We will design a new future for a 4,000 acre eighth-generation family farm on the banks of the Mississippi River. The farm has been organic for over ten years and the Donaldson family are ready to take it to the next level. Learn how landscape design and whole farm planning can make farming healthy, environmentally responsible, and profitable again. We will explore the links between farmers, land, and community and learn how we can mend the tattered fabric of rural America. Scholarship funds are available and minority farmers in particular are encouraged to enroll.

**Instructors:** Peter Bane, Eric Kindberg, Chuck Marsh, Larry Santoyo, and guests.

**Cost:** \$550. \$50 discount for full payment by July 15th.

**Contact:** Chris Donaldson,  
c/o Silvertop Farms,  
Rt 1, Box 345,  
Tiptonville, TN 38079  
901-253-8028,  
info@donaldsonfarms.com

# Networks and Resources

## Wild Chiles Now on the Map

The U.S. Forest Service officially designated the "Wild Chile Botanical Area" in Tumacacori last June. Thanks to the patient and persistent efforts of Native Seeds/SEARCH staff, it will be the first U.S. wilderness reserve dedicated to protecting a plant—the wild chiltepine.

Chiltepinos provide the genetic base for virtually all domesticated chile varieties, including bell peppers, jalapeños and serranos. Uses range from salsa making to insect spray to medicinal treatments for arthritis, mouth cancer, and indigestion.

While chiltepinos are abundant in Latin America, their habitats are in danger in the U.S. due to fire and over-grazing. With official reserve status, the Forest Service will create a management plan for the four-square-mile area of the Coronado National Forest to protect the chiles and other wild plants, including wild cotton, beans, and gourds. The designation will provide for forest service guidelines for management of the area, and an amendment to the forest plan of the Coronado National Forest.

In addition to this exciting news, over the last year Native Seeds/SEARCH has made progress forging alliances in chiltepine country in Mexico. After two visits to Mexico this past fall, ranchers and chiltepine harvesters are interested in working with NS/S staff and our collaborators in Mexico. Ranchers in the area have agreed to fund the printing of a poster to celebrate chiltepinos as a natural resource in the area, and to encourage responsible harvesting and conservation.

The "Wild Chile Botanical Area" is a great example of Native Seeds/SEARCH's commitment to the preservation of the wild relatives of Southwestern domesticated crops. Please join us in celebrating these little fireballs and patting ourselves on the back for a job well done!

Laura Alexander, Development Director, Native Seeds/SEARCH, Tucson, AZ 85705. 520-622-5561. <nss@azstarnet.com>

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## Report Calls for Science in the Public Interest

In an era of uncertainty about the effects of genetically modified organisms coupled with increasing private funding of public research institutions, a diverse coalition forming. American scientists, farmers, environmentalists, health care providers and others are calling for a more publicly accountable research agenda. Their report is titled "Defining Public Interest Science."

Recently, when genetic engineering jointly paid for by U.S. taxpayer dollars and private corporations created technology that prevents a crop's seeds from germinating, many in the U.S. felt this was misuse of public research funds. The report's authors argue that this "Terminator Technology" did not address the public interest. Instead, it addressed the needs of a private corporation.

The report is sponsored by the Consortium for Sustainable Agriculture Research and Education in Wisconsin, the Science and Environmental Health Network in North Dakota and the Center for Rural Affairs in Nebraska. It is endorsed and electronically published by The Loka Institute, a public interest organization in Massachusetts.

The research team argues that defining research in the public interest is an important step to assure that technological advances serve either the common good, private profit, or both. As it stands, many corporate representatives—not the larger public—are at the decision-making table when research funding decisions are made. The authors emphasize that when public money is involved, the public has a right to expect that research it has funded will serve the public interest. Moreover, when private interests may result in public harm, it is the duty of public

agencies to support public interest over private interests.

Dr Scott Peters of Cornell University in Ithaca, New York, states, "Public interest research aims at developing knowledge and/or technology that increases the commonwealth. Such research requires complex problem-solving and must involve the economic, social, and environmental dimensions of people and natural resources. It will require that insights from these different ways of knowing be synthesized, and that an active citizenry be involved."

"I believe this paper will serve as a basis for redirecting national research agendas towards more public interest research," says Carolyn Raffensperger, Director of the Science and Environmental Health Network.

The paper lists ways to determine whether science is being conducted in the public's interest through a set of questions that help to identify the beneficiaries of the research; whether research results are made available to the public; and if citizens are involved in the research.

You can access the full report via the following web sites:

The Center for Rural Affairs <http://www.cfra.org>

Consortium for Sustainable Agriculture Research and Education <http://www.csare.org>.

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## Russian Bees Bred to Resist Varroa Mites

Hardy Russian honey bees that resist attack by devastating varroa mites will begin showing up in American beehives within a year, thanks to scientists in Louisiana with the Agricultural Research Service, USDA's chief research wing. The Russian bees' genetic resistance will provide beekeepers with a tool—in addition to chemical pesticides—to control the mites.

Varroa mites—eight-legged parasites—are among the worst enemies of honey bees worldwide. In the U.S., the mites have attacked bees in almost every state. Though only about one-sixteenth-inch in size, they can destroy a hive of tens of thousands of bees in as little as 6 months. The mites have also eliminated most of North America's wild honey bees.

Under a Cooperative Research and Development Agreement signed this week by ARS and Bernard's Apiaries, Inc., Breaux Bridge, La., bee breeder Steven J. Bernard is authorized to raise hundreds of Russian honey bee queens this fall and winter. The bees will be available for sale to U.S. beekeepers early next year. The beekeepers will use the queens to produce more queens for populating hives with mite-resistant offspring. These offspring will be fathered by male bees, known as drones, from the American hives.

Compared to domestic honey bees, the Russian bees are more than twice as resistant to attack by varroa mites, according to tests by geneticist Thomas E. Rinderer and colleagues at ARS' Honey Bee Breeding, Genetics and Physiology Research Unit in Baton Rouge, La.

The domestic honey bee and the Russian honey bee are the same species, *Apis mellifera*. But the Russian bees have had to develop resistance to survive in their homeland, the mite-infested Primorsky region of far eastern Russia.

Rinderer studied the bees there, then imported them under a federal permit. He said it is likely that wild—as well as domesticated—honey bees in the U.S. will eventually have Russian honey bee parentage.

Besides producing honey, honey bees pollinate dozens of crops, from apples to zucchini, worth \$8 to \$10 billion. An article in the August issue of the agency's monthly magazine, *Agricultural Research*, tells more. View it on the World Wide Web at <http://www.ars.usda.gov/is/AR/archive/aug99/bees0899.htm>

Scientific contact: Thomas E. Rinderer, ARS Honey Bee Breeding, Genetics and Physiology Research Unit, Baton Rouge, La., phone (225) 767-9280, fax (225) 766-9212, [trinderer@ars.arsusda.gov](mailto:trinderer@ars.arsusda.gov).

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# Permaculture Books

## **Introduction to Permaculture** 20.00

Bill Mollison w/Rene Mia Slay. 2d ed. (1994) 216 pp. paper. illus. The basic argument for permanent agriculture: how to feed and house yourself in any climate with least use of land, energy, and repetitive labor. New material on patterns, cold climate. Supercedes *Permaculture I & II*.

## **Permaculture in a Nutshell** 9.00

Patrick Whitefield. (2nd ed. 1997) 80 pp. paper. illus. A back pocket gem, this book draws on the best examples in Britain and elsewhere to show how and why permaculture works. Excellent primer for introducing to friends.

## **The Permaculture Designers Manual** 45.00

Bill Mollison. (1990) 576 pp. cloth. 450 illus. + 130 color photos. Global treatment of cultivated ecosystems. A resource for all landscapes and climates. Lucid illustrations by Andrew Jeeves bring Mollison's concepts to life. Essential, in-depth treatment of earth repair and practical design.

## **Earth User's Guide to Permaculture** 16.00

Rosemary Morrow (1994) 152 pp. paper. Abundantly and charmingly illus. An informative and practical guide to permaculture, with exercises and real-life examples. Learn how to design a permaculture system on your own land, whether city balcony, suburban garden, or country farm.

## **Restoration Forestry:**

**A Guide to Sustainable Forestry Practices Worldwide** 27.00  
Michael Pilarski, ed. (1994) 526 pp. paper. illus. A combination resource guide to organizations and a fascinating collection of essays on all aspects of sustainable forestry. Pilarski's intellectual curiosity is immense. A treasure trove of material, indexed by books, periodicals, articles, and general subjects.

## **Forest Gardening** 18.00

Robert A. de J. Hart. 2d ed. (1996) 256 pp. paper. illus. Revised for N. American gardeners, this classic collection of essays on seven-story permaculture by the grand old man of agroforestry presents a gardener's ecology: water, energy, craft, herbs, health. Hart's tales of tree life and forest cultures thrill to the root.

## **Plants for a Future**

### **Edible and Useful Plants for a Healthier World** 30.00

Ken Fern (1997) 300 pp. paper. illus. Based on research conducted in Cornwall, England, and covering useful trees and shrubs, plants for shade, water plants, perennial veggies, ground covers, hedges, and more, this book describes plant characteristics and cultural requirements in depth. A fascinating read with appendices cross-referencing uses and habitat preferences, this is the book to get for temperate climate gardeners.

### **New Title!**

### **Creating Harmony: Conflict Resolution in Community** 25.00

Hildur Jackson. (1999) 269 pp. paper. illus. With contributions from England, France, Denmark, India, Germany, U.S.A., Australia, and New Zealand this marvellous collection will soon become the community organizer's best friend. Hard-won and brilliant insights to the largely undocumented process of self-governance. A practical sociology of the ecovillage movement.

## **Growing Gourmet & Medicinal Mushrooms** 40.00

Paul Stamets. (1993) 554 pp. paper. illus. By now a classic of its genre, this book is a masterly, charming, well-illustrated, and very useful guide to the cultivation of 25 species of high-value fungi. Revealing, in astonishing detail throughout, the heretofore subterranean world of mushroom growing, Stamets devotes a chapter to the role of mushrooms in permaculture and another to creating mycological landscapes. His science is robust, as dozens of academic endorsements of the book attest, while his perspective is wholistic, even ecstatic. Appendices list other mushroom guides, suppliers, festivals, training centers, tours, societies, spawn sources, journals, museums and more, and detail the elements of a home mushroom farm from spawn laboratory to growing chambers.

## **Short Circuit: Strengthening Local Economics** 20.00

**for Security in an Unstable World.** Richard Douthwaite. (1996) 386 pp. paper. illus. The single best guide to alternative economic development we have found. Explains and documents new money systems, local trading networks, alternative energy, home-grown banking, cooperatives. Lays out a comprehensive scheme for wealth creation and conservation at the local level based on energy, food, and housing. Douthwaite, rich in example from his native Ireland—the last western European society to industrialize—is nevertheless intimate and up-to-date with the entire western alternative world—from Mondragon to Maleny—and shares it with us in savvy, elegant language.

## **The Cobber's Companion** 22.00

Michael G. Smith. (2nd ed. 1998) 134 pp. paper. illus. A practical and clearly written guide to building with *cob*, or lumps of earth and straw; with charming illustrations and *joie de vivre* throughout. Covers soil composition, sitework, materials, foundations, technique, sculpture, roofing, floors, finishes, tools.

## **The Independent Home:** 20.00

**Living Well with Power from the Sun Wind and Water**  
Michael Potts. (1993) 300 pp. paper. illus. Weaves 27 inspiring stories of the new energy pioneers and how they did it—nuts and bolts, diagrams & photos. Chapters on siting and building the home, repair & maintenance, economics of permanence, biologic energy, and community cooperation.

## **Our Ecological Footprint:** 15.00

**Reducing Human Impact on the Earth**  
Mathis Wackernagel & William Rees. (1996) 160 pp. paper. illus. A wealth of information about the ecological impact of many human activities expressed as energy/acreage equivalents. Cuts through the mush about sustainability, suggesting humans are already 30% over the planet's sustainable limit. Invaluable!

## **EcoForestry:** 30.00

**The Art & Science of Sustainable Forest Use**  
Alan Drengon & Duncan Taylor, eds. (1997) 312 pp. paper. illus. Comprehensive, thoughtful collection of essays and case studies covering all aspects of forestry from genetics, hydrology, fungi, and fire to social impacts, links to the ocean, harvest, marketing, and spirituality. With references, glossary & contacts.

## **How to Make a Forest Garden** 25.00

Patrick Whitefield. (1996) 192 pp. paper. illus. + 8 color plates. The most comprehensive guide to the subject: clearly written, well organized, and attractive, with British examples. Whitefield details garden design, pest & weed control, and planting techniques for temperate zones. Descriptions of 125 useful plants.

**Cornucopia: A Sourcebook of Edible Plants 45.00**

Stephen Facciola. (2nd ed. 1998) 713 pp. paper. Lists over 3,000 species with all commercially available named cultivars, sources of seed, plants, descriptions, uses, cultural notes, food products; easier to use with a new combined index. Completely revised and updated. Of unsurpassed value to garden designers!

**Seed to Seed:**

**Seed Saving Techniques for the Vegetable Gardener 20.00**

Suzanne Ashworth. (1991) 222 pp. paper. illus. The best single-volume guide to saving our vegetable heritage. Discusses techniques and references botanical classification, pollination, crossing and isolation, seed production, harvest, processing, and viability for more than 150 vegetables and herbs.

**The Humanure Handbook:**

**A Guide to Composting Human Manure 19.00**

Jos. C. Jenkins (2nd ed. 1999) 301 pp. paper. illus. A groundbreaking book, completely revised with 50% more material incl. state by state survey of regulations and sources for wetland plants. Examines various systems for waste disposal and treatment, recommending hot composting as the simplest, cheapest, most ecological method. Writing from personal experience and extensive research, Jenkins answers questions you never dared ask!

**Chicken Tractor: New Straw-Bale Edition!**

**The Gardener's Guide to Happy Hens and Healthy Soil 20.00**

Andy Lee. (2nd ed. 1998) 320 pp. paper. illus. Chicken tractors are mobile coops, a clever way of using domestic poultry (or other animals) for pest control and garden fertility with very little work on your part. Detailed info on breeds, costs & more.

**The Earth Manual:**

**How to Work on Wild Land Without Taming it 16.00**

Malcolm Margolin. (1985) 238 pp. paper. illus. A friendly guide to earth repair in the wild, with chapters on wildlife, tree-planting, felling, pruning and repair, mulch, erosion control, seeding, transplanting, trailmaking, ponds, and doing it all with children. Filled with good common sense.

**The Man Who Planted Trees 8.00**

Jean Giono. (1985) 56 pp. paper. This timeless and inspiring tale of one man's dedicated efforts to reverse desolation has been beautifully illustrated with 20 woodcuts by Michael McCurdy. A story for all ages and a blessing to all readers.

**The Permaculture Book of**

**Ferment & Human Nutrition 25.00**

Bill Mollison. (1993) 288 pp. pap. illus. No ordinary recipe book, but a guide to storing and processing food, informed by science, humor, and common sense. "A basic survival handbook of great use to gardeners and farmers trying to vary their resource base by adding value to their crops. It takes the mystery out of complex ferments; offers guidelines for the rich and varied diet we all need in an age of fast food malnutrition."

**Village Wisdom / Future Cities**

**The Third Int'l Ecocity and Ecovillage Conference 16.00**

Richard Register and Brady Peeks, eds. (1997) 227 pp. paper. illus. Compiles speakers' offerings on agriculture, housing, wastewater, women's issues, and much more. A good balance of cutting edge theory and living examples from many cultures and perspectives. Expand your concept of what's possible for cities!

**Boundaries of Home:**

**Mapping for Local Empowerment 10.00**

Doug Aberley, ed. (1993) 138 pp. paper. illus. Mapping is the first step toward reclaiming the territory. How to envision the landscape of home: 19 passionate essays on bioregional mapping, theory & examples from city and country, USA, Canada, Britain. Info on using GIS, resource assessments, review of cartographic sources, many and varied example maps.

**The Beetless' Gardening Book New Title! 9.00**

**An Organic Gardening Songbook/Guidebook**

Chris Roth. (1997) 112 pp. paper. A collection of 57 garden poems with a glossary (allelopathy...jardinero...spuds...Vavilov Centers...zone one) and an index (acorns to zucchini), this wry and witty chapbook is a passport to both learning and hilarity. Permaculture diva Chris Roth has artfully arranged these verses to match the oh-so-familiar meters of those wonderful tunes by the eponymous Fab Four, (All Your Seeds are Love, Good Day Sunchokes, I Saw Herbs Standing There, The Long Eroded Path...). The best recommendation is in the singing: within two verses the room will be in an uproar of laughter and tears. Beware...some are especially vulnerable, but no one is immune!

**Get A Life! 20.00**

**How to make a good buck, dance around the dinosaurs, and save the world while you're at it...**

Wayne Roberts & Susan Brandum. (1995) 344 pp. paper. The subtitle says it all. Witty, inspiring, full of lively examples of people doing well by doing good. A wild walk on the smart, cheap, and funny side of an economy in free fall. Want to get "creative" and "economics" in the same sentence? Read this book.

Prices subject to change

Add 10% shipping to all book orders, minimum \$2.  
N. Carolina residents please add sales tax.

**The Permaculture Activist  
Post Office Box 1209  
Black Mountain NC 28711 USA**

**Permaculture Videos**

Please include \$3.00 shipping for one or both films

**The Global Gardener 32.00**

120 min. VHS. (1991) Bill Mollison's review of permaculture accomplishments around the world. Made for Australian Broadcasting Corp. and aired to national acclaim. Four half-hour segments highlight subtropical, drylands, temperate, and urban systems with footage from developed sites in India, So. Africa, Australia, the U.S., U.K., and Europe.

**In Grave Danger of Falling Food 35.00**

56 min. VHS. (1989) A wacky romp through Mollison's life as an outlaw. Cartoon cutaways and bizarre sound effects seem no stranger than Bill loping along the street in front of Aussie suburban sleaze, guerrilla planting hazelnuts. A campy period piece, this film tells the permaculture story with verve and imagination.



Back Issues of  
**The Permaculture Activist**

- I, 1 July '85 Permaculture In Oz  
I, 2 Nov. '85 Fruit & Nut Trees  
II, 1 Feb. '86 Garden Design  
II, 2 May '86 IPC 2 & PC Design Courses  
II, 3 Aug. '86 Int'l PC Conference Program  
II, 4 Nov. '86 Fukuoka; Keyline; Genetic Cons'vn; City Farms; Oceanic PC  
III, 1 Feb. '87 Networking; Natural Farming; D-Q Univ.; Children's PC  
III, 2 May '87 PC Restoration of Wild Lands; Design for Sacramento Farm  
III, 3 Aug. '87 Annual Planting Cycle  
III, 4 Nov. '87 Trees for Life  
IV, 1 Feb. '88 Marketing PC Products; Bamboo; Home Wastewater Treatment  
IV, 2 May '88 **Urban-Rural Links**: Economics & Community Development  
IV, 3 Aug. '88 Social Forestry; Gabions; Jap. Org. Ag.; Prodc/Cons. Coops  
IV, 4 Nov. '88 Multi-Story Tree Crops; Greening Dom. Repb; Runoff Gardens  
V, 1 Feb. '89 Permaculture: A Designer's Manual; Tree Bank; Water in PC  
V, 2 May '89 Plant Guilds; Roof Gardens; Small Livestock  
V, 3 Aug. '89 Rainforest Conservation in Ecuador; Gaia; Weed Gardens  
V, 4 Nov. '89 PC Def's; Water Conservation; Small Dams; Ponds; Keyline  
VI, 1 Feb. '90 Household Greywater Systems; Soil Imprinting  
VI, 2 May '90 **Insectary Plants**; more Greywater; Land Use for People  
VI, 3 Aug. '90 **Water**: Forests & Atmosphere; Catchment; Nepal; Pond Design  
VI, 4 Nov. '90 **Urban Permaculture**: Ecocity Conf, Soil Detox, Suburbs & PC  
#23† May '91 **Politics of Diversity**; Greenhouse Mkt Gdn; PC in Nepal  
#24 Oct. '91 **Creativity in Design**: Examples; **Index Issues #1-23**;  
#25 Dec. '91 **Design for Community**: CSAs, Restoring Forest; Garden Ecol.  
#26 May '92 **Soil**: Our Past, Our Future: Fertility, Worms, Cover Crops  
#27 Aug. '92 **Integrating Pc**: Deconstructing Utopia; Grassroots Organizing; Garden Polyculture; Pattern Learning; Living Fences  
#28\* Feb. '93 **Structures**: Comm'ty Dsgn; LETS; Industry; Strawbale/Timber-frame Bldgs.  
#29/30\* July '93 **Networks**: Special Media Rvw; Rural Reconstr'n; Leaf Conc.; Comm'ty Food Initiatives; Pc in Palestine; Do-Nothing Ed'n; *Feng Shui*; Companion Gdn; Nature Spirits; Wilderness; Biogeog.; Network Theory; Pc Acad.  
#31\* May '94 **Forest Gdn**: Energy & Pc; Mushrm Cultn; Robt.Hart's F.G.; Spp for N. Cal.; Alders; Agroforestry in Belize, China; Honeylocust; N-fixers  
#32 April '95 **Animals & Aquaculture**: Rare Breeds; Animal Polyculture; Small-scale Cattle; Goat Dairy; Keyline; Ramial Woodchips; Feral Chickens; Bee Plants; Constructed Wetlands; Reed Bed Sewage Treatment  
#33 Dec. '95 **Cities & Their Regions**: Green Cities; Independent Regions; LA Eco-Village; MAGIC Gardens; CoHousing; City Markets; City Animals; Micro-Enterprise Lending; Suburban conversion; Rails-to-Trails  
#34 June '96 **Useful Plants**: Bamboo Polyculture; Medicinals; Pest Control; Root Crops; Oaks; R. Hart's For. Gdn; Russian Plants; Regl. Plants; Sources  
#35 Nov. '96 **Village Design**: Pattern Language; Consensus Democracy; Conflict; Historic & New Villages; Planning for Tribe; Earthaven, NC; Design for Catastrophe; Youth; Vill. Economics; EcoForestry; Natural Bldg.  
#36 Mar. '97 **Climate & Microclimate**: Climate Change; Microclimate Primer; Weather; Windbreaks; Low-Tech Sun Locator; Drylands; Cool Slopes; Subtropic Forest Gdn; Straw-Clay Bldg.; Round Beehive; Water Catch.  
#37† Sept. '97 **Tools & Appropriate Technology**: Dowsing; Workbikes; New Energy Tech.; Scythes; Japanese Saws; Start a Nursery; Paradise Gdns.; A-Frame & Bunyip Levels; Ram Pump; Greywater; Solar Moldering Toilet; Ferrocement; Log Yoke; Green Woodworking; Cookstoves...  
#38† Feb. '98 **Economic Transformation**: The Speculative Economy; No Middle Class Pc?; Worker-Owned Coops; WWOOF; No Money!; Global Warm-What Profits?; Holistic Financial Planning; Land Use; Adopt-A-Hive  
#39† July '98 **Knowledge, Pattern & Design**: Pc: A Way of Seeing; Sand Dunes; Native Conservation.; Language, Worldview & Gender; Pattern, illus.; Patterning as Process; Land-Use Planning; Teaching Pc; Vietnam; Tree Sculpture; DC Youth Design; Holmgren on Pc Movement  
#40† Dec. '98 **New Forestry**: Regl. Devlpmt.; Horselogging; Menominee Res'v'n; Forest Investing; Restoration; Old Growth; Homestead Tenure; Forest Soils; Forest Farming; Woody Agric.; Rainforests; Windbreaks; Coppice  
#41\* May. '99 **Natural Building**: Oregon Cob; Cordwood; Bamboo; Thatch; Ethics; High Winds; Origins of Conflict; Greenhouses; Ponds; Adobe; Road-Building; MicroHydro; Bldgs. That Live; Under \$20K Houses; Dreams

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PO Box 1209, Black Mountain NC 28711

\*#28-31, 41 \$7.50 each; †VI-3, VI-4, #23, #37-40 \$ \$6.00 each

**LETTERS, cont'd**

2. Do not buy any products made by companies who have operations (or contrived subsidiaries) in free trade zones in Latin America, Phillipines, India etc...

Now there is a real challenge!

Good Luck!

Skye

<skye@tortuga.com>

[Skye also responded to a query to the above.]

Into the fray again!

I have no doubt that in some climates, a vegan diet is possible. And I am sure it would be extremely energizing and healthy. My point was simply that I doubted such a diet is possible in areas such as northern Germany. If someone could live in such a climate, and be fit and healthy on a vegan diet, they'd have my utmost admiration.

I am not against veganism as such, as long as it doesn't involve exploiting other peoples/ecologies. For twenty years I was a strict vegetarian (only slightly relaxed now) so I don't know how to prepare or cook any meat products - and have no interest to learn to do so now. A family-inherited sensitivity means I can rarely eat eggs. Having lived in warm climates without a refrigerator for almost 15 years, my intake of dairy products is also minimal. And I am quite healthy and manage a fairly busy schedule.

Guess I am just saying, let's not get hung up on dogma—to be vegan or not, it's individual choice, but I try to be aware of the implications/connections that occur because of diet, lifestyle, etc. . . .

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**Sustainable Living News Back Issues:** Issue 17, Bamboo; Issue 19, Guilds/Deconsumerism; Issue 20, Natural Building/Ethnoherbalism. \$4.00 each. Also Issue 17 bound inside 38 of the Activist (Economics) and Issue 19 inside 40 of the Activist (Forestry). \$6.00 each. The Cob Builder's Handbook by Becky Bee only \$20 (\$24 cover!) Sustainable Living News, PO Box 45472, Seattle, WA 98145 42

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### Help Wanted

Small monthly stipend. Plant trees with us, that they may enjoy the winds blowing at Kawaiholehole, our farm on the Hamakua Coast, Island of Hawaii. Write Box 129, Buckhannon, WV 26201. [ceres100@earthlink.net](mailto:ceres100@earthlink.net) -42

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# CALENDAR

**November 28-December 11, 1999. Dexter, OR. Permaculture Design Course**  
Lost Valley Educational Center, 81868 Lost Valley Lane, Dexter, OR 97431.  
541-937-3351. info@lostvalley.org

**January 19-22, 2000. Pacific Grove, CA. Ecological Farming Conference.**  
CSA, 406 Main St., Suite 313, Watsonville, CA 95076. 831-763-2111.  
www.csa-efc.org.

**February 5-18. Occidental, CA. Permaculture Design Course.**  
Occidental Arts & Ecology Center, 15290 Coleman Valley Rd. Occidental, CA 95465.  
707-874-1557, fax/-1558 oaec@oaec.org,  
www.oaec.org

**February 11-13. Eugene, OR. Women's Permaculture Design Workshop**  
Jude Hobbs, 1161 Lincoln St. Eugene, OR 97401. 541-342-1160. hobbsj@efn.org

**February 20-27. Piedra Grande, Huixilucan, Edo de Mexico. Permaculture Design Course.** <skye@tortuga.com>,  
www.tortuga.com/permacultura

**February 25-27. Occidental, CA. Starting and Sustaining Intentional Communities**  
Occidental Arts & Ecology Center, 15290 Coleman Valley Rd. Occidental, CA 95465  
oaec@oaec.org, www.oaec.org

**Spring term, 2000. Chambersburg, PA. Sustainable Architecture Course.**  
Ed Wells, Chairman of Environmental Studies, Wilson College, 1015 Philadelphia Ave., Chambersburg, PA 17201. 717-264-4141 ext. 3413. ewells@wilson.edu

**March 4-18. Argentina. Permaculture Design Course, Patagonia, ARGENTINA**  
Scott Pittman, Permaculture Institute USA, P.O. Box 3702, Pojoaque, NM 87501.  
505-455-0270

**March 27-April 4. Buenos Aires, Argentina. 1st Latin American Permaculture Congress**  
Argentinian Institute of Permaculture, www.ecovillages.org/argentina/gaia  
gaia@apc.wamani.org Almafuerie 1732, San Martin, 1650, Buenos Aires, Argentina.  
Tel/Fax: 011-47522197

**April 22-30. Summertown, TN. Permaculture Fundamentals.** Ecovillage Training Center PO Box 90, Summertown, TN 38483, 931-964-4324.

**May 13-26. Garberville, CA. Permaculture Design Course**  
Mikhael Smith, Island Mountain Institute at Heartwood, Garberville, CA 95542.  
707-923-5000

**May 26-June 3. Orangeville, Ontario. Permaculture Fundamentals.**  
Ecology Retreat Center, RR #1, Orangeville, Ontario L9W 2Y8 Canada. 519-941-4560.  
ecorc@ionsys.com

**July 5-August 19. Black Mountain, NC. Permaculture Work-Study Program.**  
Culture's Edge, 1025 Camp Elliott Rd, Black Mountain, NC 28711. 828-669-3937.  
culturesedge@earthaven.org  
www.earthaven.org

**July 5-24. Winlaw, BC, CANADA. Permaculture Design Course.** Gregoire Lamoureux, Box 43, Winlaw, BC V0G 2J0 CANADA. 250-226-7302.  
spiralfarm@yahoo.com

**July 6-20. Methow Valley, WA. Permaculture Design Course.** Michael Pilarski, Friends of the Trees, PO Box 4469, Bellingham, WA 98227. 360-724-0503.  
trees@telcomplus.net

**July 7-15. Black Mountain, NC. Permaculture Fundamentals.**  
Culture's Edge, 1025 Camp Elliott Rd, Black Mountain, NC 28711. 828-669-3937.  
culturesedge@earthaven.org  
www.earthaven.org

**August 11-19. Black Mountain, NC. Village Design Permaculture Practicum.**  
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**August 28-September 8. Permaculture Design Course for Farmers.**  
Tiptonville, TN. Chris Donaldson, c/o Silvertop Farms, Rt 1, Box 345, Tiptonville, TN 38079. 901-253-8028  
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**October 6-14. Summertown, TN. Permaculture Design Practicum.**  
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