



Illustration by Carol Jenkins

## Permaculture: What Exactly Is It?

by Sandy Cruz

What great drama! Will humanity wake up to its follies in time to avoid global environmental catastrophe? Is it already too late? It seems to me that the outcome is still up for grabs — a real cliffhanger! And we have our role to play in it. Now more than ever, our actions are crucial.

So . . . how can humans live on this planet far into the future in harmony, abundance, grace and ease? What models are available to guide us in creating new relationships with Nature and each other?

One possibility is to look to Nature herself as a model. Natural systems tend to be stable, adaptable, non-polluting and increasingly abundant over time. Just what we need!

Permaculture is a method of observing and understanding natural systems, and then imitating what we see in Nature to provide ourselves with food, shelter and clothing. Once basic human needs are satisfied, we can leave the rest of the planet in a wild state.

### Creating Ecosystems

Nature organizes herself into ecosystems of varying scales. A single cell in the human body is an ecosystem, as is the entire body, as is the watershed in which we live, as is the entire Earth. Ecosystems have a certain resilience and integrity — a life of their own — while at the same time being part of larger ecosystems.

The basic idea of permaculture is to create ecosystems tailored to provide what humans need. These may vary in size from an indoor windowsill garden to a large farm, to a city or entire region. The strategy is to design and implement a system that takes on a life of its own, thereby maximizing natural productivity and enhancing the environment, while minimizing pollution, human intervention and labor. In every project, as much area as possible is set aside to remain wild.

### Relative Placement

Permaculture translates the characteristics of natural systems into about a dozen guiding design principles.

Microbes, fungi, plants and animals, for example, tend to feed on and nurture one another in a complex web of relationship and interaction. What can we learn from this? By placing plants, animals, and other elements that nourish and support each another together, we can foster a dynamic web of life.

The classic southwestern tri-culture of corn, beans and squash is a wonderful example of humans imitating this natural principle. Quick-growing squash provide shade and protection for young corn seedlings. Beans fix nitrogen that fertilizes the corn and squash. Corn stalks provide a trellis for the beans. Shade-loving ground beetles under the squash may eat the eggs of corn-borers.

Relative Placement is the principle of placing things near each other that can help one another. In a dry climate, for example, we can locate a compost pile under the eaves, so that the roof automatically sheds rain and snow onto the pile. (Do not rest the pile against the siding, however, unless you also want to compost the building!) Nature added another element to one compost pile I saw, where volunteer squash plants used the building as a trellis, climbing up the wall and onto the roof.

### Energy and Nutrient Recycling

Another common trait of natural ecosystems is that elements cycle through them over and over until eventually leaving the system. A drop of water, for example, may fall from the sky into a puddle, where it is drunk by a squirrel, who urinates it onto a plant, that pumps it up into its leaves, which are eaten by a deer, who exhales the water through its breath, where it is carried away by the wind.

Beaver enhance this dynamic by damming streams, thereby increasing the time a drop of water remains in the system and raising the water table. This creates habitat for many other creatures and protects the forest from severe wildfires. In contrast, the same drop of water tends to wash away quickly in an eroding landscape, having done nothing to support life in the ecosystem.

How can we learn from this? We can set up ecosystems where energy and nutrients tend to cycle through the system for a while before leaving. For example, we can capture the energy of the winter sun in a solar greenhouse, converting it into heat by piping it through the growing beds. Warm roots will help the plants to thrive. A home attached to the greenhouse will benefit from the extra layer of warmth emanating from the growing beds. After creating these useful effects, the heat will leave the greenhouse long after the sun has set.

### Using Biological Resources

Most human endeavors, at this point in time, rely on dead materials such as metals, minerals, lumber and toxic chemicals. Natural ecosystems consist largely of biologically alive elements. What can we learn from this? We can imitate Nature and apply biological resources whenever possible. Mycologist Paul Stamets has shown, for example, that in cleaning up toxic oil spills, oyster mushroom cultures are far more effective than chemical remediation methods.

Rather than fertilizing plants with petroleum-based chemicals, organic gardeners use biological resources to nourish the soil by encouraging worms to propagate, and by creating rich compost from biologically active “waste” materials. Gardeners can also use predatory insects rather than toxic insecticides to control garden pests. In some situations, they can create dense biological fences by planting quick-growing plants, shrubs, trees and vines, rather than cutting trees for fenceposts which will eventually rot.

### Permaculture is Unique

Permaculture has some unusual characteristics among gardening systems:

- Permaculture is based on the ethics of caring for the earth, caring for people, and sharing the surplus.
- Permaculture is primarily a system of design. When a site is well understood and the ecosystem well designed, the results are likely to be more productive and resilient, thereby needing less maintenance and remodeling over time. In contrast to the typical cookie-cutter approach, permaculture regards each site as unique.

- Permaculture recommends that people observe a site for at least a year before doing anything. This concept is not too popular in our current hurry-up world! By observing diverse factors through every season and every extreme, a viable design can grow out of the site, rather than being imposed on it. In permaculture, we say “Thoughtful and protracted observation, rather than thoughtless and protracted labor.”
- Permaculture — based on an integration of microbes, insects, plants, fungi, animals, people, structures and technologies — considers all possible connections among all elements. In applying integration to human activities, what connections can we forge, for example, among organic gardeners, holistic healers, solar architects and “waste” collectors? The “waste” people can create compost for the gardeners, who use solar structures to grow medicinal herbs for the healers. The healers can give massages to the hardworking gardeners, composters and architects in solar spas, followed by an organic lunch from the garden. Etcetera.

### Culture and Agriculture

There are people all around the planet working towards creating new models for human culture on earth — models that value and create cooperation among all beings.

With Nature as its model, permaculture can serve as a great unifying umbrella, integrating many diverse elements of our emerging culture into the vast planetary ecosystem.

Working in harmony with Nature is largely uncharted territory. There’s plenty of room for creativity and new discoveries in permaculture. Welcome aboard!



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