

What is Permaculture?

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The ancient practice of permaculture was revived over thirty years ago by who is considered to be the modern day founder, Bill Mollison. He coined the word “permaculture” from the phrases “permanent agriculture” and “permanent culture”. The current rapid growth of the modern day permaculture movement is becoming increasingly recognized as a fundamental solution for reversing pollution and global warming. It is also proving to be the basis from which to solve social problems, such as community and world hunger by building self-reliance through self-sufficient economies with regenerative, ecologically balanced resources.

Those who are applying permaculture methodologies for alleviating hunger, improving human health and improving the environment also view it as the foundation from which to solve today’s socioeconomic and political problems. The fair distribution of resources begins with transforming depleted lands and reduced wild habitats and ecologies from less productive or desert-like conditions to lush, productive areas using the principles of permaculture at both small and large scales.

Reviving landscapes for projects such as flood control and water conservation, increasing food production yields on commercial farms without destroying ecosystems, and more than adequately providing for one’s personal nutritional needs in urban or in rural settings results in greater food security for individuals and families, for communities and, in fact, entire countries. As various forms of energy become feasible and available in the most remote and poverty-stricken areas, water sources can be accumulated, preserved and directed, and energy from the elements of wind, sun and gravity can be used economically to specific advantage.



With more independence among individual communities, injustices and exploitations that occur in international commerce and trade can be averted. Permaculturists feel that solutions to world problems begin with the three main permaculture tenets: to care for the Earth, care for oneself, and share the abundance. Beginning with the essential mediums on which all life depends--water and soil, permaculturists have proved time and again that it is all about more efficient use of water, preserving and directing where it flows and where it can be absorbed, and improving essential elements of living, breathing, productive soil.

Also called polyculture as opposed to monoculture, permaculture goes beyond organic farming because it improves surrounding ecologies more thoroughly and its beneficial, perpetually self-regenerating effects last for centuries. Permaculture not only eliminates synthetic, toxic chemicals in its food production techniques, practicing permaculture methods reestablishes the intricate web of life and the natural cycles required for supporting all life on Earth, in self-regenerating cycles, for an indefinite amount of time.



Revisiting Ancient Technologies

Permaculture is an ancient technology designed for maintaining abundant food sustenance. Once established, food forests created through permaculture are capable of lasting hundreds to thousands of years. One of the oldest food forests on record is over 2,000 years old, and it has thrived under harsh desert conditions; it is a true oasis (Lawton, 2011).

Methods of permaculture include observing how nature creates self-regenerating, life perpetuating environments, and mimicking those factors to create controlled, environmentally beneficial, highly productive food forests. Permaculture is demonstrating that it is the only way to ensure enough



food for all human beings while reversing much environmental damage humans have caused. Permaculture is a system that results in higher food nutrient density and yield in food production, while producing stunning effects in environmental restoration.

Restoring hillsides and converting an otherwise nonproductive terrain to an area of abundant production, for instance, is an ancient technique known as terracing. Vegetation is planted on terraces and walls to prevent soil erosion. Once they form deep root systems, they help prevent torrential flooding on steep hillsides by slowing the flow of water, allowing it to permeate gradually downhill throughout the soil. Thus, terracing prevents flooding and loss of valuable topsoil. Without topsoil retention, flooding and mudslides erode the landscape, followed by desert conditions.



Permaculture offers solutions and methodologies for preventing and reversing desertification by capturing water and regenerating poor soil conditions, particularly in arid zones where the ground can no longer hold water and therefore cannot support life, let alone grow food.

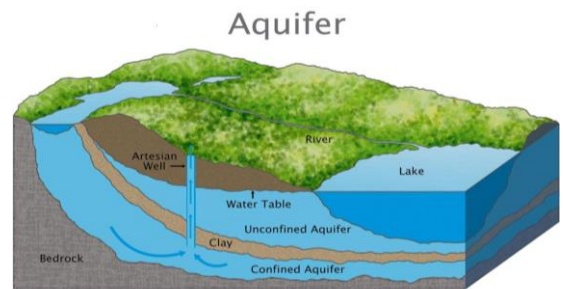
Permaculture offers proven solutions for successfully reforesting or re-greening arid zones throughout the world, including restoring the driest, most lifeless deserts to lush greenery. Re-greening the deserts using permaculture methodologies are proving to also solve many an indigenous culture's economic crises as subsistence agriculture has been turned around with abundant yields in food production and water management opportunities, such as has occurred in Ethiopia (Liu, Hope in a Changing Climate).

Capturing and directing where water flows is the first essential element that must be installed in any potentially fertile environment to enable vegetation to begin to thrive.

Observing Where Water Flows

Permaculture offers successful, proven solutions for controlled water flow on the topsoil surface and for improving water tables in below surface aquifers (underground tables of water storage and flow).

In a permaculture environment, the buildup of organic matter or accumulated soil biomass over time typically holds twenty-seven thousand gallons of water per acre (NRCS, n.d.). Once vegetation is established, root systems underground and topsoil accumulation of mulches form the necessary biomass that acts as sponges, absorbing and holding large amounts of water that sustains plant life and other essential life web constituents. The excess water sinks on the surface and slowly spreads. Water that has seeped below the surface joins the gravity-induced flow of aquifers or underground water tables.



Permaculture designs encourage the formation of valuable underground aquifers that swell and spill over the surface as above ground springs. The accumulation of biomass in older forests can be several feet deep, which serves as an effective filtration system and results in cleaner water.

Implementing permaculture techniques can therefore prevent rainwater evaporation, soil run-off and uncontrolled flash flooding along the surface, allowing the precious water resource to be filtered more slowly throughout the landscape, both within the topsoil and beneath the soil's geological layers, ultimately controlling how and where water is held and where it spreads and flows.



In permaculture, the fundamental principles of water management are the slowing, spreading and sinking or seeping of water into the topsoil where it can support the life ecology of a healthy food forest just as it occurs in a wild, natural forest.

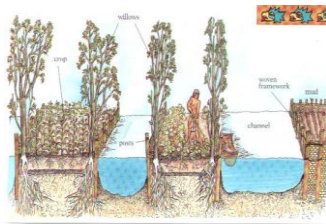
The forest floor of a natural forest is known as a forest lake or forest ocean due to the tremendous amount of water it can hold, where valuable soil components such as topsoil, mulch, minerals, beneficial micro-organisms and other forms of valuable fertility would otherwise be lost. Without well established forests, over twenty billion tons of the Earth's valuable topsoil is lost to erosion and run-off every year, where it is eventually deposited into the oceans, and irretrievably lost from the landscape.

Permaculture food production or environmental stewardship mimics nature's accumulation of debris or plant and animal material on natural forest floors, and therefore advocates not tilling the soil. As demonstrated in conventional monoculture farming, tilling is a major cause of soil erosion and destroys valuable soil habitats of beneficial microbials and helpful insects.

In mimicking nature, the little to no work permaculture method of "chop and drop", allowing bio material to accumulate on the forest floor, falling where it may, has been shown to be key to sustaining entire food web environments and maintaining an entirely balanced and healthy ecosystem, including keeping scavenging insects in check.

Ecological Water Catchment and Control Systems

Swales, berms, gabions and other water catchment methods allow nutrient-carrying water to slow down enough to hydrate and nourish vegetation, and reduce the need for costly irrigation systems.



Small check-dams or gabions are important ways to counter soil erosion and slow down and divert water flow so it may spread and traverse downhill along a slope's contour perpendicular to the fall line. Gabions are made from rocks, wrapped straw or other nontoxic absorbing or filtering materials that inhibit water flow and catch silt.



Large gabions can be used for holding back greater surges of water during storms where accumulations swell and gather into fast moving currents, which can break through and overwhelm berms. Strategically placed to prevent rapid erosion by flash flooding, large gabions are cages built out of strong fencing material and filled with larger rocks or smaller, head-sized boulders. In addition to slowing the flow of water, gabions also serve to



capture great amounts of silt that would otherwise cloud water sources and suffocate essential water life. Gabions can also be used in a number of creative ways for decorative or practical uses.

Water Filtration and Cleansing

The natural filtration capacity of water loving plants support the symbiotic relationships between fish, algae and other life forms in an intricate, healthy ecosystem. This is especially important for ponds that are established in a permaculture food forest with the intentional design and multi-purpose use of water, whether it is a backyard swimming pool doubling as a fish pond, or a large scale farm with several multi-purpose ponds that integrate many food webs.



Permaculture principles can be used in building natural swimming pools, where an isolated guild of water plants and other beneficial organisms filter the water before it enters the swimming area in an almost maintenance-free, naturally self-cleansing swimming environment.

Guilds - Self-Sustaining Micro Climates

Food spirals are the most energy efficient ways of producing food. They produce many times more food per square foot than linear, monoculture farming. Spirals are also an efficient way to establish food guilds.



Guilds are communities of mutually beneficial plant groups that promote balanced, nested and self-renewing, self-perpetuating ecosystems. Guilds are used to establish supportive microclimates that allow plants that would not otherwise grow successfully alone or in monoculture environments, particularly if they are not ideally suited to the region or zone.

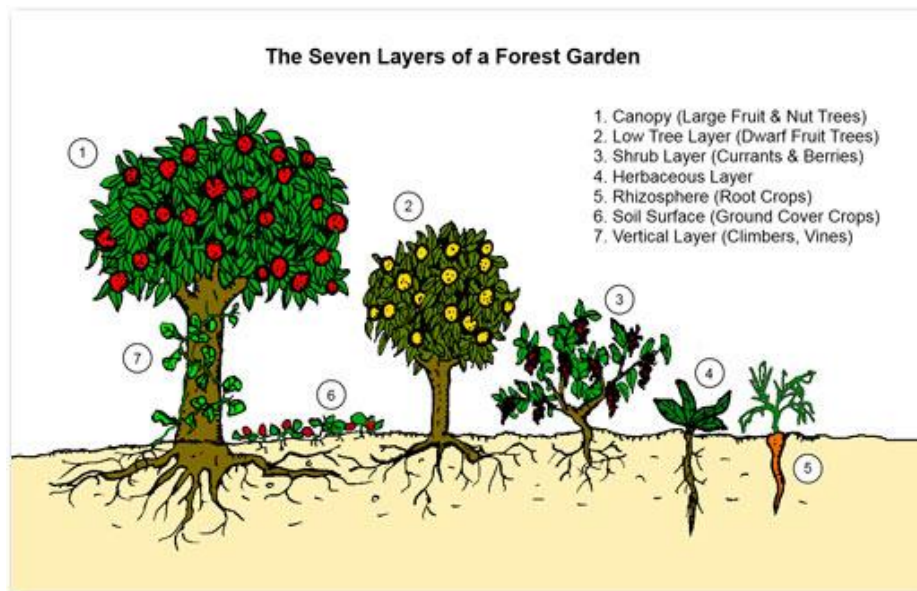
Guilds can represent a smaller example of permaculture ecosystems as in a food spiral, or can represent an entire permaculture environment where soil life, water life, and animal and plant cohabitation are integrated. This forms a greater synergistic whole that ensures the thriving of life for many generations.



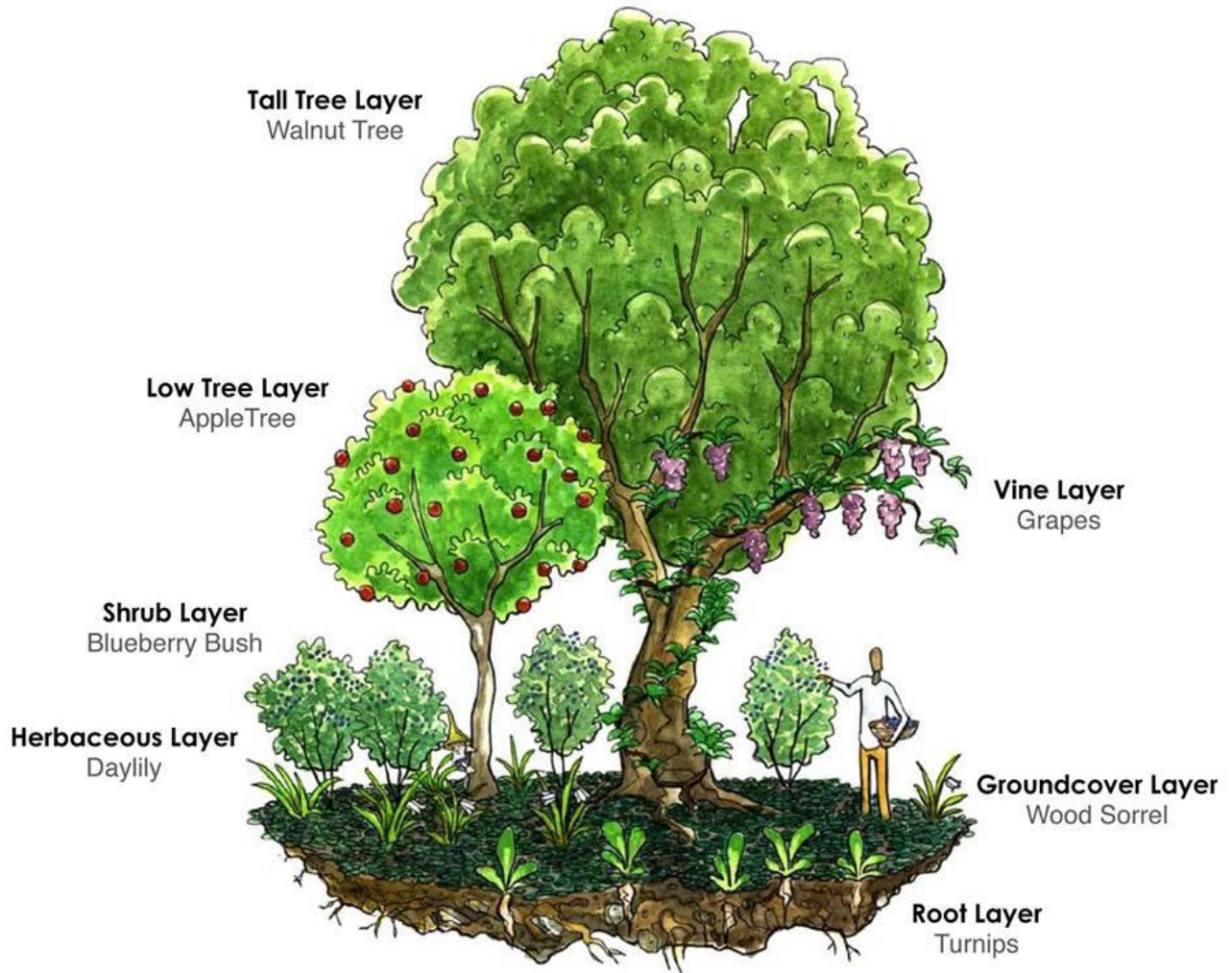
The Seven Layers of a Food Forest



A permaculture food forest contains seven elements that define it as a balanced ecosystem. Each purposeful element is interdependent upon the others for retaining water, nutrients, maintaining optimal soil life, and providing a well-balanced, essential wildlife environment whose inhabitants are important contributors to its balanced ecology.



Layers of a Forest Garden

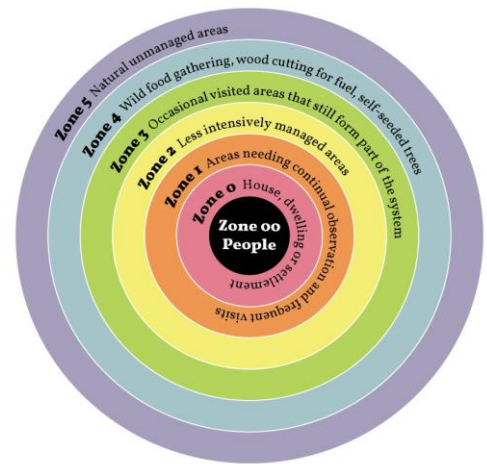


The Permaculture Zones



In order to establish a successful ecosystem that yields food abundance and high nutrient density for the optimal health of human beings, the principles of what makes a forest succeed and thrive for an indefinite period of time must be understood. One of these principles is the establishment of zones that interconnect and organize the whole permaculture system. The system of zones can be applied to both a backyard urban food forest or a large scale, multi-acreage food forest.

Starting from the main building or home, the frequency of use and level of work required to maintain the environment are primary factors in determining where to place buildings, garden groupings, guilds, animal shelters and grazing areas. Outer lying areas in Zone 5 must be left unmanaged in order to observe nature and learn from it to better understand what works best in a human made food forest in any given geographical area.



Integrating Animals Into the Permaculture Food Web

Besides the wildlife that frequent or live in a human grown food forest, resident domesticated animals serve many purposes. They are invaluable for maintaining the ecosystem and eliminating most of the workload for their fellow human cohabitants. In addition to providing people with food, domestic fowl eat insects, scratch the surface of the topsoil, which aerates it and encourages the proliferation of beneficial soil organisms, and they also fertilize the soil.



With managed grazing, chickens, geese and ducks, as well as goats, sheep and cattle or other animals serve to prune, mow and clear away weeds and other potentially problematic plants. These animals that peck and graze help clear fire hazards away, greatly reducing the workload of farm and land maintenance for humans. Other than harvesting crops, people can allow animals to gladly do their part in maintaining a healthy ecology for continuous food abundance.

Other Uses of Permaculture Principles

- Converting public landscapes into free food forests while improving the environment.
- Converting apartment buildings in cities to renewable energy, water catchment and conservation, and creating ecosystems on balconies using some of the elements of permaculture growing some of one's own food.
- On site school gardens that supply food for school lunches and serve as an income source.
- On site college or university gardens that supply food for students, professors and staff.



- Community urban gardens that serve as food banks.
- City beautification projects and associated crime reduction.
- Raising morale and creating a paradigm shift in thinking among the population toward greater health and Earth advocacy, which leads to positive, proactive decisions and actions in citizenry as a whole.

Applying Permaculture Principles in All Areas of Life Caring for Humans While Caring for the Earth

Using the basic principles of permaculture, we can integrate renewable resources for all aspects of living and lifestyle, such as solar energy, alternative or green building methods, water conservation, recycling all waste and repurposing non-recyclable materials. Eliminating toxic chemicals and other pollutants and health hazards from the environment, paying attention to how much health and environmental decisions we make on a daily basis affects ourselves and others, and realizing that humanity is connected on many levels are the keys to begin reversing the damage we humans have inflicted on the

environment, which has been escalating on a global scale for several generations.

Understanding where our food comes from and how permaculture methodologies are so critical for producing much higher food nutrient densities that prevent deficiency diseases that are so prevalent today provides the foundation for making the cognitive connection between how we affect the environment with our personal choices and how we manage our health. The same steps we must take to heal ourselves are the very steps that will heal the planet.

Not knowing where our food comes from and how it gets to our table is one of the reasons we have become so disconnected from understanding why what we choose to eat is so vital. As we make the holistic health choices that determines our quality of life and freedom from disease risk, we can continue to innovate and create new ways to enjoy life from a heightened awareness and perspective, without destroying the planet or continuing on the path toward our own rapid extinction.

We must understand that the choices we make for our personal health, whether it is destructive or protective, are multiplied and magnified on a global scale. In permaculture, the food forest builder who closely pays attention to the cause and effects of their actions in the care and nurturing of building a thriving ecosystem, sees the close relationship between ensuring the success of the food forest and ensuring their own thriving.

Permaculture provides a known solution to global warming, where green house gasses such as CO₂, nitrogen and methane are captured from the atmosphere and absorbed into the soil where they belong, and then used by plants and microbial life to produce nutrient rich, properly aerated soils, ultimately resulting in an abundance of exceptional, highly nourishing food. Permaculture also provides solutions to economic recovery through the wise conservation and constant regeneration of the Earth's precious natural resources.

While we humans continue to create new technologies and ways to improve our existence, we must make it a new habit of always considering whether or not those technologies and methods will disempower some segment of the world's population or empower them, or if it will contribute to our demise or prevent it. Reaching our whole health and therefore greater human potential implies that we integrate permaculture principles into our daily lives and decisions so that we may break the cycle of self-destruction and finally achieve the sincere, due respect and reverence toward this amazing planet before it is too late.

Reference:

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Her mission is to raise true health awareness and Earth consciousness among the population, helping the masses awaken and realize how essential individual citizen participation is for building their own authentic health and helping to reverse the damage we humans have inflicted upon the Earth.

By informing people how to shift daily choices away from unhealthful and environmentally damaging choices, she believes we human beings and all living things can thrive, and the Earth may flourish as it has for billions of years.

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