GROWERTALKS

Features

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# Blurring the Lines

*Rob Maganja*

Permaculture is a set of principles and practices for designing sustainable human settlements. Its core values are care for people, care for the Earth and fair share. It's a relatively new term, but it's essentially just a catchy rebranding of the way agriculture was done for millennia, just up until the past few hundred years, when modern, large-scale agriculture was implemented.

If you've heard about permaculture, but are hesitant to read on for fear of turning into a hippie, fear not. Though many hardcore permaculturists definitely fall into the "flower child" category, permacultural principles are applicable to many situations. But by nature, the word "permaculture" applies to the creation of "permanent agriculture." It's interested in creating perennial food systems with trees, shrubs, vines and groundcovers that are planted together in plant communities or guilds.

**The basics**

Guilds tend to center around some sort of food tree—typically nut- or fruit-bearing—and all the other plants surrounding it are there to help it grow better than if it were planted by itself in the middle of a barren field or within the confines of a monoculture. But the other plants of a guild are useful in and of themselves. They can be edible for humans, they can provide food and habitat for wildlife, or they can stabilize and revitalize the soil.

Any person who works with plants is obsessed with their beauty. Botanists, horticulturists and permaculturists all look at plants in different ways, but at the end of the day, they all appreciate the beauty of plants. It's good to have this baseline, because whenever disagreements break out about the purpose of a garden or the nature of somebody's research, all parties can remember the love of plants that holds them together. Many permaculturists will argue that a guild can't be grown strictly for ornamental purposes and many ornamental horticulturists will argue that a display bed can't have edible food throughout, but the lines sometimes need to be blurred to create a more perfect planting.

**Guild design**

In permaculture, all members of a guild must have at least one function besides aesthetic appeal. Guild functions range from nitrogen fixation and nutrient accumulation to predator deterrence and beneficial insect attraction. Nothing is off limits—if a plant is vaguely beneficial, it can be used in a permaculture design. So even plants that are grown for purely ornamental purposes might have other functions—even the most beautiful supermodels can moonlight as activists and philanthropists.

*Pictured: The author's almond guild in its current state after three years. In two to three years, it will look like diagram A, below.*

Lilac (Syringa vulgaris) acts as a windbreak and attracts beneficial insects. Japanese quince (Chaenomeles speciosa) gives forage and habitat to wildlife. Lupine (Lupinus spp.) fixes nitrogen. Thrift (Phlox subulata) acts as a groundcover. And the list goes on. Doing a little research into the plants you grow will reveal the myriad benefits some plants possess.

The most important plants to place high up on a pedestal are the multifunctional plants. These superpowers have upwards of three uses, and using as many in your garden as possible is ideal, because the more you use, the more you're able to fill your functionality niches—composter, pollinator attractor, nutrient uptaker, etc.

We all know that plants aren't uniform. They're not all blooming, uptaking nutrients or producing fruit at the same time. So having several plants that do the same thing is important, because when one plant isn't at maximum capacity, there are others to step in and shoulder the weight.

**Examples**

In diagram A, you'll see an example of a guild centered around an almond tree, with 10 other plants added throughout. Each of the different colors represents a different guild function, as detailed in the sidebar. Some plants have additional, unrepresented guild functions, but for the sake of simplicity, I highlighted the two or three functions that I deemed most important.

In the second diagram, you can see an alternative take on the almond guild. No purple appears in this guild because the focus has been taken away from food plants. Food plant species from the previous guild have been replaced with species that are grown more for an aesthetic appeal in order to make the guild more ideal for an ornamental operation. Though human food production is an inherent part of permaculture guilds, most other permacultural principles still have use in a strictly ornamental setting.

To keep the strength of this new "redbud guild" high, I did a tally of its functionality niches to make sure its plants provide as many benefits to the guild as the plants in the almond guild did. For example, from the almond guild blueprint, I can see that six plants are great at bringing in beneficial insects, so when designing the redbud guild, I know there should be at least six insectary plants. As it turns out, all guild functions of the redbud guild equal or surpass the numbers of the almond guild, except for two guilds, one of which is the

“human food” category, which, of course, has zero plants.

**The simplicity of permaculture**

This might seem like an unnecessarily large amount of planning and you’re probably right—after all, these few paragraphs only break the surface of all the thinking I do before I begin the physical labor portion of guild creation. But the nice thing about permaculture is that once you hit a wall, you’re supposed to forget the wall and simply forge forward to the next task. There will come a time when you’ve over-analyzed each plant and its functions. But just remember this: as long as the big picture works, then nitpicking the finer details isn’t necessary.

Hardcore horticulture mandates that we get pH, fertilizer and other requirements just right, but permaculture believes these details will iron themselves out. And if a plant happens to die, you know what not to do in the future. In the past, growers thought they could simply add appropriate amounts of nitrogen, phosphorus and potassium to a plant to get it healthy, but plants are more complex than this. So many factors come into play and so many interactions between these factors occur that trying to map everything out is exhausting. Rather than try to play doctor with every ailment, wouldn’t it be easier to leave the sick plant in the care of a thriving plant community?

**Short-term and long-haul**

The almond and redbud guilds are both temperate perennial guilds. A major benefit of using perennial plants is that, several years after the guild’s inception, the plant interactions will be so harmonious that the guild will “pop.” Guild popping is the pinnacle of permaculture perfection. After years of lining up and setting the pieces into place, the guild reaches a state where it no longer needs a grower’s help. All the cogs are in sync and the grower only needs to enter to reap the rewards.

Unfortunately, this means that true permaculture can’t work with a planting solely comprised of annuals. However, even the most extreme example of annual ornamental plantings—the one-month greenhouse display—can still incorporate a number of permacultural principles: beneficial insect-attracting plants can be used in tandem with a strong beneficial insect release program; attractive, short-lived cover crops can improve soil quality without the need for the traditional, deep-rooted nutrient accumulators; and pest-repellent plants spaced at proper intervals can reduce pesticide usage.

Just keep an open mind and permaculture will help you fix even the most abstract problems.

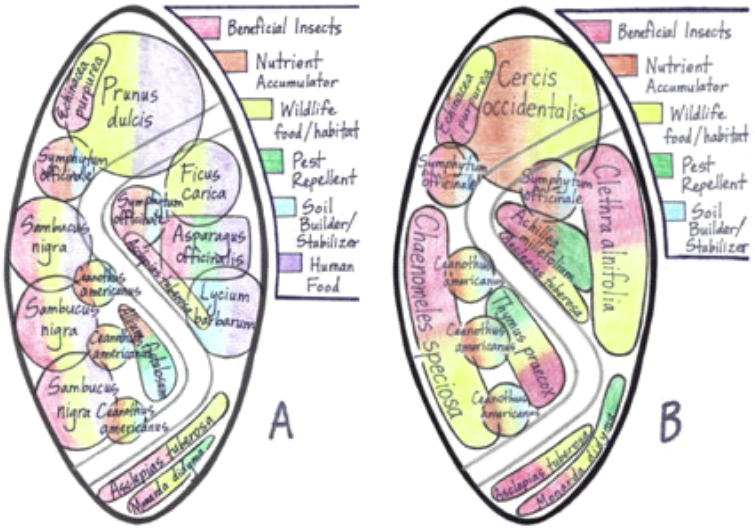


Diagram A is an example of a permaculture guild centered around an almond tree, while diagram B has another example without food-bearing plants.

**Beneficial insects:** Achillea millefolium (yarrow) attracts pollinators, like bees and butterflies, and it also attracts predatory insects, such as ladybugs, hoverflies, parasitic wasps and lacewings.

**Nutrient accumulator:** Any plant that's able to fix atmospheric nitrogen or pull other elements up with a deep taproot and then allow neighboring plants to make use of some of these elements. For example, Cercis occidentalis (Western redbud) fixes nitrogen and Symphytum officinale (comfrey) accumulates potassium, calcium, magnesium, iron and silicon.

**Wildlife food/habitat:** Provides significant food or shelter for wildlife.
Pest repellent: Any plant with essential oils that are capable of keeping a pest insect at bay. For example, live Thymus praecox (creeping thyme) repels cabbage root fly and its dried flowers repel moths.

**Soil builder/stabilizer:** Any plant whose old, decaying leaves or shed roots are nutrient-rich and plentiful enough to significantly improve the soil around the plant. Or a plant whose roots are adept at holding soil together and limiting erosion. Symphythum officinale grows so fast that its nutrient-rich leaves provide "instant compost" and Lycium barbarum (goji berry) has an extensive root system that holds sandy soils together.

**Human food:** Any plant with significant amounts of edible fruits, roots, leaves, stems or flowers.
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