

The Bullock's Permaculture Homestead

Spring Newsletter 2007 (v. 2)



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Words from the Daver

Here we are again; ready to embark on another spring at the farm. This time of year always makes me think about the macro-patterns that govern our lives. In Nature, things often take on the pattern of a pulse (heartbeats, respiration, tides, etc.). Plant growth pulses too. Big shots of growth in the spring and fall, each followed by relative periods of rest in the summer and winter. These pulses affect us too with regards to the energy required of us. Winter is a time where we can be in a relatively restful state. Along comes spring and we must put out a pulse of energy to get crops in the ground, re-assemble drip irrigation systems, fix any winter damage, de-winterize nursery stock, etc. In summer the workload eases up a bit. Then fall comes and we must spend that energy again to make sure everything is ready for the coming winter.

I remember learning about patterns in Nature in my first design course. It didn't make sense to me. I recognized that there were patterns in Nature and this was fine and dandy. What do these patterns have to do with me? People were very into the lecture, talking excitedly about the spiral of the chambered nautilus or the strength of the honeycomb. The question that I had trouble answering was, "So what?" There are patterns all around us, but what does this have to do with how I design things? I didn't believe that the best garden bed design was a spiral just because that's the way the chambered nautilus did it (have you ever tried to work in a spiral bed with a wheelbarrow?).

It wasn't until about two years later when it finally clicked for me, thanks to one sentence in a Toby Hemenway lecture. The gist of what Toby said is that Nature doesn't screw around with things that don't work or even with things that are less than the most efficient. Nature gravitates toward getting the job done in the most efficient way. That's why certain patterns repeat in Nature...that's why I care! I also want to do things in the most efficient way.

Once I looked at patterns in Nature through the lens of the efficiency-minded pragmatist, it made a lot more sense. You can't just apply patterns haphazardly, though, and expect to end up with a

functional system. You have to look at your goal and ask, “How does Nature do this?” It isn’t just about applying patterns from Nature, but applying them properly (of course spiral garden beds don’t work well with wheelbarrows...wheelbarrows have the goal of ‘flowing through’ while spirals create opportunities to flow ‘in and back out again’).



So take time to observe some of those patterns you see around you. Once you attune your senses, you will find them throughout all aspects of your life. Then you can start applying them where they make the most sense, like an artist with a full palette of colors.

Well folks, take a deep breath...that spring pulse is almost here! 3...2...1...go!

New Website Up & Running

The new website is up and running! We’ve been receiving tons of positive feedback from folks. We’d like to take this opportunity to pass along some of the praise. Thanks to David Ray for his coding and design skills. We’d also like to thank Ryuma Iwashita for his artwork (he did the vine work at the corners).

If you haven’t seen the new site yet, check it out at <http://www.permacultureportal.com>.

A Journey to Clean Water...Constructing a Greywater System by Tobi Shulman

Processing your own wastewater may seem a daunting task, but with a little chicken wire, sand, cement, some gravel, and some plants scavenged from your local marsh, you too can construct a simple and effective solution. After being a part of the construction and planting process for the greywater system here at the homestead, I feel confident that anyone motivated to process their own greywater can easily do so.

Greywater is any wastewater that does not include toilet effluent. In our situation, we process water from the kitchen sink, and shower before releasing it into the duck pond. For our system we used ferrocement technology (a combination of steel, cement, and sand used in conjunction to create a structure of greater strength and less weight requiring less materials than a concrete structure). We built our system by first creating a frame skeleton of our tank out of concrete wire (six-inch wire mesh) covered with chicken wire, tied with tie wire every six inches, and digging a space in the ground for the frame to sit.



The frame is built using baffles, so that the water is forced to take the longest route possible, snaking over one section of the tank and under the next. The concrete wire is used for its

tougher nature and structural stability. The chicken wire creates a tighter weave with spaces into which the mortar is forced to make the frame water tight and strong enough to hold the gravel infill. One could also create a watertight trough by lining a hole in the ground with pond liner, plastic sheeting, or clay. We chose to demonstrate the use of ferrocement for this project because the components are available in most places throughout the world and this technique can be used to build other things such as water tanks, shelters, composting toilets, etc. One of the major advantages of ferrocement technology is that its strength allows it to be built above ground as well as below.

Once the frame was built and set into the trough in the earth with cardboard lining used as a backing form, we applied the mortar, which is a mixture of three parts sand to one part cement. This work was done with lots of help from this summer's course participants (thanks everyone!). To apply the cement, we made the mixture in wheelbarrows, scooped out buckets full, and used wooden trowels (and gloved hands) to press the mixture into the frame. Then, after the course, we filled the frame with gravel, realized it was not water tight, and groaned a lot! Tip: Always test your frame by filling it with water before you fill it with gravel! So, we took the gravel out again to seal it with cement sealer. We think that because so many different people were applying the cement, we did not make sure that all areas were properly smoothed and compressed enough. Once it was sealed and water tight, we refilled the system with gravel and planted it.



There are many plant species that will thrive in a greywater system, and many can be found growing wild in low-lying marshy areas. We dug some cattails out of a section of one of our duck ponds, and used some sedges (*Carex spp.*) and rushes (*Scirpus spp.*) that we found locally. We also added an aroid used in traditional Chinese Medicine called ban xia (aroids are a family of plants known to feed heavily on nutrients).

Mostly importantly, there must be a variety of plants that will thrive in a nutrient rich, consistently wet environment in order to encourage root growth. The roots of these plants, coupled with the gravel, create enormous amounts of surface area where beneficial nutrient-processing bacteria will grow. The greywater system functions largely as a home for these bacteria, the primary water cleaning critters. We are now using this system to process our greywater before releasing it into the duck pond. The whole process took some time and effort, but many hands make light work, and it is now a functional home wastewater treatment system!

Upcoming Events

May 4-6: Plant Propagation Workshop – Learn how to grow all those great permaculture plants
May 25-27: Intro to Permaculture Workshop – Get a taste of what permaculture is all about.

See the Courses & Events section of our website for more details.