Living Energy Farm

Dec 2015 – Jan 2016 Newsletter

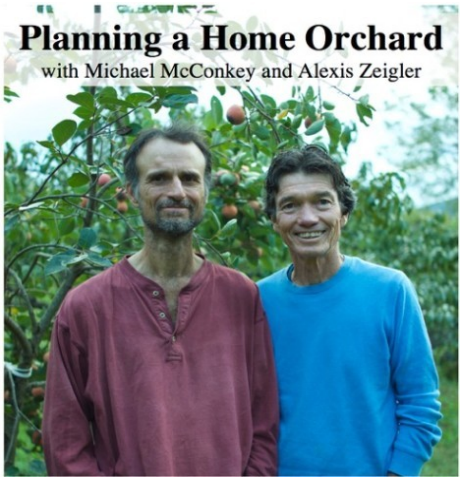
Upcoming Workshops

Organic Orchard Management and Pruning
Sat, Feb 13 bad weather date Feb 20, 9am to 4pm
Location: 912 Woodfolk Drive, Charlottesville VA 22902
This workshop will focus on planning, pruning, and maintaining an organic home orchard without the use of chemicals. The workshop location has an established orchard that produces a lot of fruit with no spraying and little maintenance. This workshop is hands-on, you will get to practice your new pruning skills. We are wimps about traveling in the snow, so light snowfall pushes us to Feb 20 date. Cost $25.

Bicycle Maintenance and Repair
Sat, March 11, 1pm to 4pm
Location: 217 Fredericksburg Ave, Louisa VA 23093
Help us get LEF's bicycle fleet ready for better biking weather to come, or bring your own bike and we'll work on it. Donations encouraged but not required.

Planning a Home Orchard: a Video Tutorial

Alexis and Michael McConkey of Edible Landscaping have produced a video to teach you how to grow your own fruit without chemicals. This 5 hour video tutorial was filmed October 10, 2015 at an all day workshop conducted by Alexis and Michael.



We produced this workshop and this film to fill a gaping void in the local food movement. While many people want to have access to local or homegrown food, few people know how to grow their own fruits and nuts without chemical sprays. Each apple or peach you buy in the grocery store has been sprayed an average of 14 times with a highly toxic brew of chemicals. Many fruit and nut trees are naturally productive and resistant to disease and insects, but they are not the most commercially popular fruits. This video will teach you about fruits and nuts that are easy to grow without chemicals, as well as organic methods for how to grow traditional fruits.

The workshop included a tasting of ripe fruits. You can see and hear people's reactions to a variety of fruits grown without chemicals.

A preview of the film can be viewed at https://www.youtube.com/watch?v=qJjxC5nyVlY
To purchase this video, visit http://ediblelandscaping.com/buyPlants.php?func=view&id=1116&utm_source=rich&utm_medium=email&utm_campaign=NL012116

The cost is $24 plus $1 S&H. The video is shipped on a USB stick. LEF and Edible Landscaping are splitting the proceeds from the video. Purchasing it is a great way to support LEF.

Testing Our Solar Heating Systems in Winter

The solar heating systems at LEF are designed to be cheap (relatively) and effective. LEF is intended to be a model that can be replicated elsewhere. Our heating system works by collecting hot air on the roof and blowing it under the floor. The solar hot air collectors on the roof are relatively cheap, simple, and homemade. Air is pushed from those collectors under the floor, where we used coarse "number 1" stone so the air could pass through the stone. The hot air warms up an enormous thermal mass under the house. The blower is powered right off or our solar rack, "direct drive" as we say. That mean no thermostats, computers, or elaborate control systems. Just DC electricity coming straight out of the panels into an industrial DC motor running a blower. The hardware is simple and cheap compared to copper flat plate collectors that could also be used to heat a house.

In designing our heating systems, we consulted various solar experts and HVAC folks (people who design conventional heating and air conditioning systems). At the end of the day, the design is our own. There was not a computer model we could find or a previously tested design that fit what we are trying to do. Since we started, a number of people have asked the obvious question – Are you sure this is going to work? Our answer has been that we are sure it would work, but not sure how well. Now with cold winter upon us finally, our solar heating system is running in the kitchen. So how does it work?

January 19, 2016. Last night it was 8 degrees F. Right now it is 25 degrees F outside with a breeze. The kids are running around the kitchen naked. It's cold outside. It's warm inside. We have been in the kitchen daily, taking shelter while we work on EarthHeart, the main house. So far this year we have used firewood for heat on 2 days, the days of the big blizzard. That was two days of a howling 30 – 40 mph wind, no sun, and lots of snow. Those were the only days this winter we have needed firewood for heat in the kitchen. The slab holds the heat just as we hoped. The building does cool down some on these cold nights, but overall the temperature is livably stable.

When EarthHeart is done, we will start taking more careful measurements of the heat inputs and impacts on our buildings. Then we will be in a position to more carefully assess our systems. We can look at the costs of building, and assess the overall value of insulation, passive, and active solar in achieving the goal of comfortable buildings that don't need fossil fuel to operate. Our solar cooling system using irrigation water will be part of that assessment as well. Then we will be able to help other LEFs start in other locations, perhaps more quickly and efficiently that we have built the prototype.

Utilities Complete on Earthheart

The solar heating system on our main house, EarthHeart, is much larger than the similar system already in use on our kitchen. It is a significant task to build it, and thanks to some hard work from interns Brie, Shawn, and Gevar, we have now nearly finished that big job. The ducts are built and insulated. We have not finished hanging all the glass, but the rest of the utilities in the building are complete. (Rough supply and drain plumbing, wiring for DC LED lights, copper pipe loops for the solar water heaters.) This is a major step toward finishing the house. The strawbale walls are pretty easy, and we will announce a workshop so you can participate soon. The biggest job after that will be interior drywall. If you have any experience or willingness to help with that this spring, do let us know.

Debbie hauls insulation for the air ducts by bike trailer- it warms you twice!

Solar Boiler

We have a solar parabolic cooker that works really well. You just hang a pot in front of it, and it cooks remarkably well. It is nicknamed the Death Ray because it will set a stick on fire in about 3 seconds. It heats up MUCH faster and more reliably in cold weather than a solar oven. The problem is, it dies completely when the weather turns cloudy, or the sun is too low in the sky.

That lead to us to the solar boiler, which we have now started building. The first step was to set up the solar parabolic reflector. A couple of years ago, we noticed a huge, old parabolic dish in a neighbor's yard, the kind that used to be used for broadcast television. We asked our neighbor if he had any use for it; he said he would be glad if we took it away, so we did. The Super Death Ray has 10 times the surface area of our smaller cooker, so it should have plenty of heat output, if we can capture it effectively. We've mounted the larger dish and covered it with aluminum tape for reflective material. We've experimented with some more expensive reflective materials that are advertised to be much more durable than aluminum, and found that they do not hold up as well as their manufacturers claim. A mirror mosaic would be more durable, but also take much more money and labor to build. The aluminum tape is cheap - it cost about $50 to cover the big dish with tape - and will probably hold up about as well as the expensive stuff, although time will tell for sure.

APO Volunteers and LEFers in front of the "Death Rays"

Land Day 2015

We had a fantastic land day in early December. We had an excellent day filled with music, good food, and good people coming to visit. Brie organized a mural painting, and all of our guests got a chance to add their touch. The result is really lovely. (See photo.) It was the first big party we have had where we prepared all the food on site. There were even homemade donuts, cooked on our old-fashioned cook stove.

Call for Interns

Living Energy Farm is looking for interns for our 2016 agricultural season! If you are considering doing a farm internship this year, keep us in mind. Details about our internship are available on ATTRA: https://attra.ncat.org/attra-pub/internships/farmdetails.php?FarmName=Living%20Energy%20Farm&City=&State=&Keyword=&allDate=0&page=1&FarmID=2613

Shawn Rutan was an intern with us from October 2015 to January 2016. Read about his experience as an LEF intern follows.

I came to Living Energy Farm at the beginning of October, 2015, with few expectations beyond exploration and learning. A three month internship served to provide exactly that.

My partner, Brie, and I had been living in Michigan and were looking to move to a new community. We'd both lived in communities before, her a Co-op she helped found in Grand Rapids, and me in a variety of situations in California, including an urban-sustainability-focused Collective in Oakland and a traveling troupe of play-professionals. We were eager to learn more about living off-grid and escaping the grind of city life. We were excited to be a part of the cluster of Communities in Louisa County known as the Federation of Egalitarian Communities (FEC). What we found at LEF (pronounced Leaf or L-E-F) were opportunities for both and more.

From the first day, we were thrown deep into the seed-saving business that forms the life-blood of LEF, being trained and trusted by Debbie, who learned the business at the neighboring Twin Oaks Community, where she was a member for some years. Alexis is a gruff but patient teacher, willing to share his wealth of experience designing and building sustainable systems. He's also really excited to share the fruit he grows. I especially enjoyed the long evenings of conversation/debate with him (he's quite opinionated). Both he and Debbie have many ties and relationships there, and Brie and I got our chance to experience that larger community by participating in a Labor Exchange system shared by many affiliated FEC communities.

Other projects we quickly became engaged in included working on the 8-room common house known as Earth Heart, where we learned how to solder copper pipes for the solar water heaters, cut and form sheet metal for the solar air heating system, and many other small projects. We also planned and hosted the 5th annual Land Day Party. Spending our days and nights watching the seasons turn, enjoying the cozy-comfort of the off-grid, recycled-material, passive-solar cabin, sharing meals and

songs with our hosts, we learned that the coming energy crisis need not be feared. Living simply, without standard AC electrical power, refrigeration, electric-clothes washer, or gas-stove is not a burden, but a blessing.

But be warned. It takes a certain kind of person. One who is not only willing to give up the excessive frills of modern life, but is eager to do so. Also, come ready to learn, get dirty, and play.

Our Future

The year 2015 saw some dubious record-breaking. The global average temperature was not only the highest in recorded history, the margin of increase over previous years was also very high. The year 2015 also saw the highest volume of automobile sales in the U.S. ever. As a society, we are in a state of collective denial that has become a kind of madness.

The mainstream environmental response to climate change is not effective. At this moment, at any given moment of the day or night, there are thousands of heavy electrical motors running to keep the industrial economy moving. Our environmental leadership tells us to add grid-tie solar panels and windmills to “offset” the carbon created by the coal plants that keep these motors turning. The assertion that each watt generated by wind and solar “offsets” a watt generated by coal and nuclear power just is not true.

It takes hours to heat up a coal plant. The power plant managers use peaking plants (electrical generators powered by big jet engines) that come on line quickly to cover fluctuations in load. But peaking plants are less efficient and more expensive to run, so the power plant managers prefer to keep the coal plants heated up to cover “base load,” which mean all those heat pumps kicking on and off, day and night, all year round, keeping our houses warm and cool as we demand.

The base load issue is the reason climate scientist James Hansen, perhaps the most well-informed person on the planet about the science of climate change, supports nuclear power. The disconnect between the scientists and the leaders of the climate change movement is the “elephant in the living room” of modern environmentalism. Our environmental leadership is spinning pleasant fantasies, and not copping to the real-life mathematics of base load.

The big problem with grid-tie photovoltaics and windmills is that NONE of the existing infrastructure shuts down. It all keeps running. Wind and sun are fickle friends. The power plant managers have to keep the coal-fired power plants hot to cover fluctuations in supply and demand. The “carbon offset” from grid-tie is at best exaggerated. By the time you count the resources to create this second-layer of “renewable” energy infrastructure, the whole project is probably a dead loss environmentally. When we screw up this badly, its not an accident. It's politics. Grid-tie is popular precisely because it doesn't change anything. With grid-tie, the power plant owners are still in charge.

In terms of supplying human needs on a prolonged basis, the modern industrial economy is horrifically badly designed. We can't fix that by tweaking the existing design, by putting a few grid-tie panels on the roof. We have to do some fundamental re-design. That means re-prioritizing how we do things to *eliminate the need* for those industrial motors. It's actually not that hard, but it does demand a different approach.

Once we take sustainability as a true priority, it's not hard from there. Now that the winter is cold, the LEF kitchen is staying warm, running almost entirely on sunshine. It was not free to build, but neither was it inordinately expensive. At LEF, there are no heat pumps. There is no baseload. We respectfully disagree with Mr. Hansen. LEF is but one meager example of what can be done when we put sustainability forward as the primary design criteria for how we organize our lives. It is not true that living without fossil fuel is a horrible sacrifice. It is not true that it is so expensive we can't afford to build it. We simply have to make it a priority. To take it seriously. To bring in the kind of focus, dedication, and resources we have allocated to so many other important interstates, runways, and high-tech industrial factories. We can afford a sustainable infrastructure. We simply have to decide that it's

important. That's all. It's not that hard. Please help us create a better future.

Links for Media Articles About LEF
LEF on CNN
http://www.cnn.com/interactive/2015/09/us/communes-american-story/
Cville weekly in Charlottesville VA
http://www.c-ville.com/off-grid-model-environmentalism-made-easy/#.VcHobF054yo
First video on youtube
https://www.youtube.com/watch?v=ppTBO8d6jhY
Second video on youtube
https://www.youtube.com/watch?v=wdSX_TIYkD4
Video on vimeo
https://vimeo.com/128744981
Slideshow produced by Alexis a while ago
https://www.youtube.com/watch?v=4x_C3iScoAw

Living Energy Farm is a project to build a demonstration farm, community, and education center in Louisa County that uses no fossil fuels. For more information see our website www.livingenergyfarm.org, or contact us at livingenergyfarm@gmail.com. Donations to the Living Energy Farm Education Fund are tax deductible.