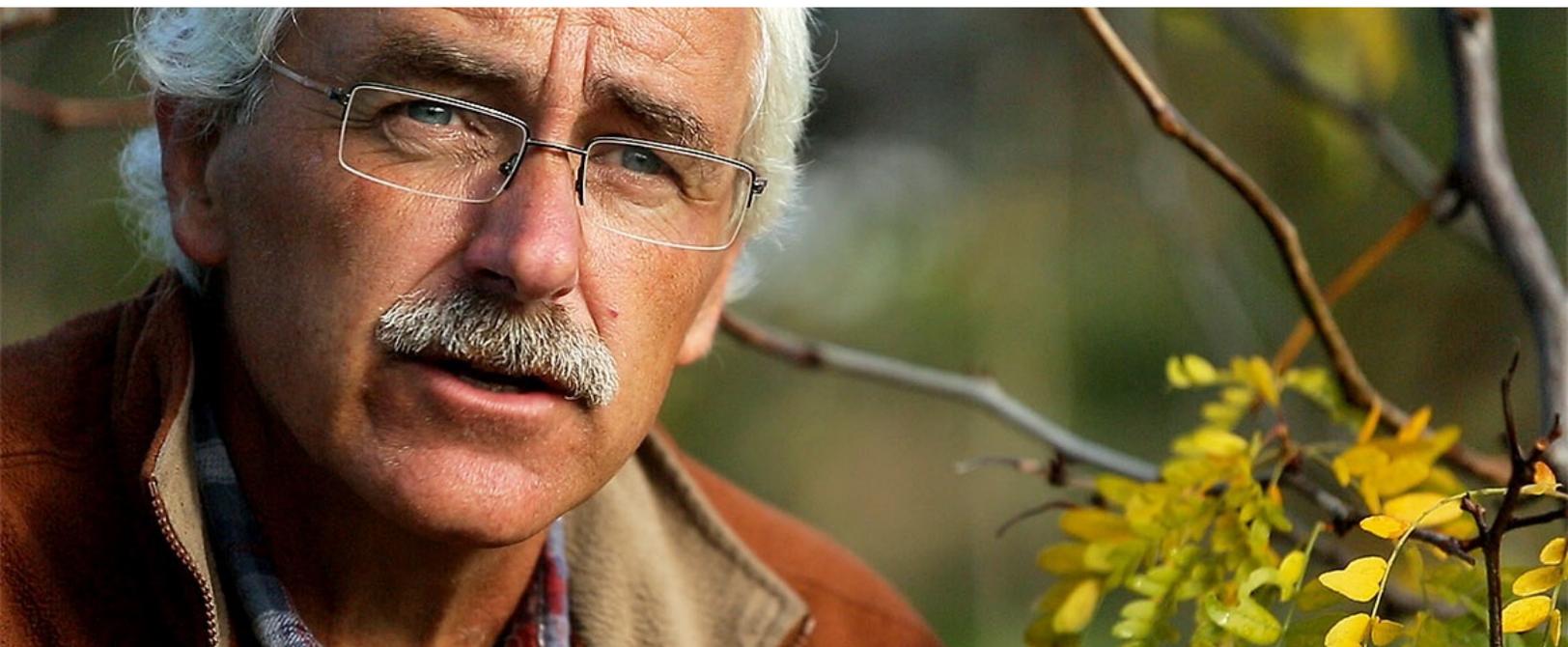


# The **Permaculture Orchard: Beyond Organic**



**Stefan Sobkowiak answers**  
**questions** from people like you

Compiled by Hugo Deslippe  
Formatted by James Samuel

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# Introduction

In June 2014, Stefan Sobkowiak and Olivier Asselin released an incredible movie called The Permaculture Orchard: Beyond Organic. Subsequently, Stefan was asked many questions about permaculture, orchards, fruit trees, etc. I decided to compile the questions about the permaculture orchard and the answers here. Most of the questions are taken from the following sources:

The permies.com forum, in the growies / forest garden section.

Les Fermes Miracle Farms Facebook page

The Permaculture Orchard: Beyond Organic's forum section

Lastly, I want to specify that I claim no authorship or any credits at all for what follows, it's all from elsewhere and only 2 or 3 of the questions are actually mine. If you have any questions for Stefan, especially after watching the movie: The Permaculture Orchard, Beyond Organic, please post them on the movie's website forum. This is a long thread so to find what you are looking for, you might want to do CTRL F and type the term you want in the search box. It should work in your PDF reader too.

Stefan answers multiples questions everyday so not all his answers are included.

Look him up on Facebook at <https://www.facebook.com/lesfermes.farms>

Enjoy the read,

Hugo Deslippe

## Tree Care

Stefan how do you train the pears? I have seen videos on pruning plums to keep them at 6-8 feet tall and may try that on some of mine closer to the house that I intend to harvest for our use. Most standard mature pear trees I know of are in the 30 foot range or more. What is your opinion on the new dwarf pear root stocks?

Paul Ewing

Paul I learned AFTER starting to train all my fruit in this technique that pears respond differently. DO NOT train them BELOW horizontal but only TO HORIZONTAL. In the video I show a way of training by bending the branches to below horizontal. This stimulates fruit production and limits vegetative growth. I do the same with the tops only of the pear trees to limit their height. I was very fortunate to learn from the lead author in 2009 his techniques and also very fortunate to host the 2nd author at our orchard for a special one day course on Biodiversity in the orchard. Here's the book that started it all: <http://goo.gl/GgT11x>

Hi Everyone, I have some apple and pear trees that I have thinned in the past to increase the size of the fruit. After hearing about how Holtzer and other permies don't do anything but harvest the fruit, I wonder if I am wasting my time. Any guidance would be greatly appreciated. Thank you  
Colin - Snohomish, WA

Colin good observation. Always good to stop and ask yourself if what you are doing is REALLY necessary. I always find it funny to see orchardists kill all the insects then spray to chemically thin. There are insects (like plum curculio) that will thin a portion of the fruit for you. I just let them. With a redesigned orchard their 'thinning' does not get out of hand. Not perfect but less work, more yield, more fun.

The apples in your permaculture orchard appear to be blemish free. How is that possible? There is surely too much fruit to affix paper bags on each fruit. Do you use an organic spray?  
Yohan

Yohan, we start with disease resistant cultivars. Yes we use some organic sprays, we use whey from cheese making. Bags are a symptom of a lack of biodiversity. I can never figure out how they are economically viable solution.

I am intrigued by what I heard on **“training” vs. “pruning”** trees during the Permaculture Voices interview (<http://goo.gl/D2UpMP>). How does one train, but not prune trees? Is it done just with spacers? Also, what is the basis of saying that if you prune once, then you have to keep pruning, whereas you wouldn't if you simply trained them? Masanobu Fukuoka said something similar, I believe, in the One Straw Revolution, but I believe I learned he was using seedling trees, rather than grafted, which produces a different form. Any guidance would be appreciated. Thanks!

Chris

Hi Chris, training involves placing a branch (with a spacer or we use wire) lower than the angle it was growing at. The goal for most fruit, and nuts, is to end up with a branch BELOW the horizontal from its point of attachment on the trunk. Once a branch is completely below the horizontal (except pears) the hormone for vegetative growth (that creates suckers) stops flowing in that branch and the hormone for fruit production is the one that dictates what happens on that branch.

The result is a branch that consistently produces fruit instead of branches for as long as that branch will receive sufficient sunlight. Simple but very effective. It reduced my need to prune by 80%!! Well detailed in the film. As for its reaction from a seedling maybe someone has experience with this, I don't. However the hormone reactions always work.

Do you have a preferred crotch angle for the branch (before fruit load)? Do you go for different crotch angles at different heights of the tree? Thank you for sharing your knowledge.

Chris

Chris, we train a tree in 2 rounds. The bottom half while it's 6-8' and the top half when it reaches its mature height (we use dwarf apple). The crotch angle should be 90-120 degrees. If the crotch angle is set at 60 or less I cut the branch off. Since it will be a troublemaker for its life. No, you should have a horizontal angle or more throughout the whole tree.

Try it, watch the tree for 2 years and you'll be sold on it.

First of all Great film. I also have a question on the training of the trees, how high do you let the trees grow? from the film it seems that you let them get quit high? Is that not a problem when harvesting. Can you also please. tell a little more about the chimney effect, that you talk about. Thanks

Frank

Hi Frank, glad you enjoyed it. All these comments make all the work worthwhile. How high: it really depends on the tree species and rootstock as well as your soil. Our goal for apple and pear trees is to reach 12-15' max. Honey locust 15-18 max. Some of the tree don't even make it others want more. The vigorous ones we bend over at the top. The shorter ones we leave the top and even prune off any small fruit branches to encourage them to grow taller.

We harvest the tops with a ladder we don't let members use ladders. Chimney effect, developed by the French allows better air and light circulation into the core of the tree. It's both important for better fruit quality and reduced disease. It also makes it easier to see what branches if any need to be removed.

I've found it especially important in plums to prevent black knot from occurring on the trunk where it is hard to remove. Try it you'll be pleased with the results. I'm going to France this fall and hope to learn some more from the best on their newest techniques. Perhaps I will transfer some of it to the USA in time.

Stefan, I keep hearing debates over whether to prune or not. What is your opinion? I have also heard that there is advantage to a higher canopy fruit tree. Let the animals browse though (in the fall and spring) to determine branch height and eat all the leaves and fruit fall. This will help break the pathogen/insect cycles and allow an area underneath for planting other items. I am leaning toward this method. Thanks in advance for any comments and suggestions.

John Devitt

John, I like Ben Falk's response from his book about such complex questions: "It depends" It depends on your tree age, species, rootstock. Your objectives, harvest height, with or without a ladder, work load, time available in season, experience.... Site conditions: snow depth, slope,... You see there is no pat answer. Look what orchardists are doing in your area and think about why they do it. In the film I show you the technique I learned from the best in the world. The researchers at INRA

(Institut Nationale de Recherche en Agriculture) are who developed the techniques. It's the simplest to master, can be taught in half a day. Watch the chapter 3 times to catch all the subtleties and then try it in season. But you have to know what you want. I can disagree with Paul Wheaton and anyone else. I've pruned 10,000's of trees, skilled a few hundred and have mastered the subtleties. Experience counts in pruning but also an open mind.

I now prefer to train the trees (also in the film) as the French do rather than prune. But they are moving to a no or very low- pruning system as well. Its an evolving field with many depends. I heard about your farm on a permaculture podcast on orchards. You mentioned in passing something about training your fruit trees rather than pruning them. Do you have some reading material you can recommend on this? I live in the city and have one apple tree I have been espaliering but it grows like crazy with new shoots every year. It could be nitrogen issue too, I am working on that but I would like to learn more about training versus pruning. thanks for the podcast, very inspiring!

Susan Ruddick

Susan we cover training vs pruning in our film: The Permaculture Orchard: Beyond Organic. You can get it here: [permacultureorchard.com](http://permacultureorchard.com). I learned the technique from the French. here's their book that describes it: <http://goo.gl/cDLYLT>

Stefan, what is the mature height of the trees in your orchard? Does it matter if the main trees in the orchard are the same size? I was thinking that I want them to be 18-20ft tall, but I'm interested in planting some quince for diversity sakes which are around 15ft when mature. It seems to me that they smaller trees will be shaded more than they should. Ideally, should all of the trees be similar height? Or is it okay to have a range of 5 – 6 ft for you mature tree sizes?

Rodney

Diversity in everything, species, height, mushroom species, insects, birds,... The fruit tree height I'm aiming for is 12-15 feet. I'm on dwarf rootstock for the apple trees. Pears are looking to go past that so I train the top by bending it, as if it was already heavy with fruit and within 2 years it is heavy with fruit that way. Don't be too concerned about shading unless your rows are north south. In that case put your shorter tree on the sunny side of your taller tree and use the nitrogen fixer as transition on the shady side of the taller fruit tree. Hope this clarifies.

Hi Stefan. Regarding your post above, is a staggered plant height in a north-south row the best approach or is a different row orientation better in a permaculture mixed plant environment. My own property is south facing and any row orientation will work here. Thanks  
Mike

Hi Mike, I presume you are the one I met on the weekend. You seem to have an ideal situation. South facing and a slope is a great advantage. You are correct that any orientation will work in your situation. The determining factor is the %slope you have. The steeper it is the more you want to run along the contour. If it's really steep you would want to make it terraced and run your rows on the level. If it's a small slope you can run up and down the hill to help with air drainage for frosty nights. Just avoid that low spot it may make a great spot for a pond but a poor spot for the fruit trees. Work with the site instead of against it. Hope you enjoyed the weekend.

What a wonderful DVD you have made – I downloaded the digital version and watched it Monday night. I have a few questions ...

- 1) Re horizontal wires – Why are there horizontal wires near the “NAP” trees? How many are there (I thought I saw 3), how far apart vertically are they spaced and what gauge of wire?
- 2) Re Honey locust trees (ie the “N” in “NAP”) – how is the height controlled from shading everything around it? Is the only “pruning” done by placing the wire hooks on it to make the branches go downwards, are they coppiced at all? My honey locusts are over 40 ft high in my backyard!
- 3) Re planting shrubs, herbs, etc – when can you plant the supporting shrubs, etc – is there an approx height you wait for the “NAP” trees to reach first?
- 4) Re “wire hook pruning” – is there an approx age or height or branch diameter when this is started?
- 5) How long are your tree rows? Is there any optimum length? I am looking forward to making a food forest in the near future. Thanks so much for any answers and guidance you can provide.

Cate

Good questions Cate and you have a keen eye.

1) The wires are a remnant of the old orchard, we kept first to give us our planting line. Now we have been raising them above the fruit tree canopy by attaching them to the taller honey locust (with fencing insulators and one screw). On the now high wire we attach 1/2" irrigation pipe with mist nozzles to serve double duty as frost protection and to apply our whey spray and we could also use aerobic compost tea and seaweed. I can't wait for the system to be finished so spraying will take 5 minutes per orchard block (1-1.5 acres each). Wire gauge? 12 or 10 not sure but heavy duty. So when finished there will only be one wire 12-15' in the air.

2) height control by training the tops, look closely in the film there are a few shots showing the 'bent over' tops. Plus we train the branches very downward. Yes trees are like clay in the hand of a potter. You can make them do whatever you want (within reason of time invested), just look at Bonsai.

3) shrubs: we planted most shrubs after the trees but can put everything in one go if the area is small enough. Our goal is to fully plant out (trees, shrubs, vines and herbs) 1/2 acre per day in the future. It's the next step needed to wider commercial adoption. No you can add shrubs at any tree height.

4) 'hook' training of branches: we start with the bottom half of the tree 2-3 year after planting and the top half when the tree is mature and reached the desired height. The branch must still be able to bend without breaking. Best time is July as it is past the peak season. Relax, you will break branches, but you will get the 'feel' of each tree type and how much it can bend.

5) Tree rows are 300-480'. Should have a passage every 100-150' to work best especially for animal pens, we do not have them but it would be better.

Best success on your project, post your pics and progress over the years on our film website forum ([www.permacultureorchard.com](http://www.permacultureorchard.com))

Bill Downes pulled a quote from your Facebook page about water use: “Yes, we have perpetual rights to the water in the lake next door. It was one of the clinchers to buying it in the first place. We pump 60 gallons per minute for 3 hours per day to water 12 acres.” Doing the math (at 6:30 in the morning, so buyer beware!), that comes out to 10,800 gallons per day, or 324,000 gallons per month. \*\*edit\*\* whoops, math error! I knew I shouldn’t be doing this so early in the morning... (in the original version I was calculating inches of water, but used the 324k number as the \*daily\* not monthly amount) Okay so that comes out to about an inch of water per month over 12 acres, which sounds very reasonable. Still, can you recommend strategies to reduce water consumption for people who have less water available? Is this watering done whether you get rain or not, or only during dry spells?  
Erik Lee

Wow a math whizz! Nice one Eric. We only water half the area at most since the grassy lanes get no water so the trees get 2-3 times more in reality. One inch per week would be optimal.

To reduce water :

1) Study your crop water needs tables (most irrigation suppliers and extension should be able to supply that for your area.

2) get a potentiometer (I think that’s the name) that measures available water at different depths in the soil. Fancy ones will hook up to your irrigation controller to only allow the irrigation to go on when the trees need water.

3) at least get a rain click device to stop the irrigation when it’s rained. The more you pay for water the more these tools pay off rapidly. We probably waste water sometimes, and it just goes into the ground water and returns to the lake. We also have the lowest electricity rates in North America so it does not encourage much conservation. I pay \$200 per year max to irrigate on electricity.

You show how to prune apple trees in your movie. Do you prune other fruit trees according to the same principles?

Hugo Deslippe

Yes, Hugo. Pear, plum and cherry. It gives great results on plum to reduce black knot damage. Especially the part of clearing the chimney.

What's the best way to protect trees from girdling by little critters? I've only lost one tree that way – probably rodent or rabbit.

Cj Verde

I prefer 24" hardware cloth with 1/4" mesh.

It has been interesting reading the different perspectives on what is considered an orchard and what is considered a food forest. By my own narrow definition, I have called what I have started to plant in my back yard both (a diverse mixture of fruit and nuts). Intense diversity is a very large focus in my plantings. While, for many of my fruit trees, I have tried to find self pollinating varieties (with the exception of the apples), I purchased and planted the self pollinating varieties with the thought of converting them to multi-graft trees down the road. Stefan – what are your thoughts on multigraft trees in an orchard, in the sense of your definition or in a small backyard personal orchard system?

Jen Shrock

Multigraft is great. Use it, especially if you are space limited. It will aid in pollination most of all.

Stefan, Farmer Mike and I (Head Weeder) at Elk Meadow Farm would like to know if there will be a tree list available for the permaculture orchardists who are wanting to plant soon. We've been working up a plot and have been planting bee enticing plants this year so far in anticipation of your video coming out. We need info on what varieties to track down. (I think the same varieties you grow in Quebec will grow here in our zone.) There are really great prices at Wells Nursery in Ellensburg, WA but I'm sure they don't have everything. Best of luck with your video. May you change the world and you're welcome on our farm anytime!

Denice Moffat

Thanks Denice. I appreciate your FB posts. As much as I want to say get to it, I see you've already gotten to it. June is a hard time to plant your trees. I know Sepp Holzer has a great technique with covering the roots and withering the leaves. Overall the best time to plant trees is in the fall (85% of root growth happens after leaf fall). Use this time to track down your trees. Many will be hard to find or in small numbers. Yes I have lists in the film of what I use and am constantly revising that list by removing the under performers and adding new ones. What works for me may not work well for you. Sorry I wish it was a recipe but it's just not that easy. Many plants

have a wider adaptation but some don't. Mollison's <phases of abundance> is a great article for the process you will go through.

Sorry we did our best to get it out as early as possible, Olivier Asselin did a Herculean job of shaving off a month from the deadline. Best regards on you project, or should I say your journey.

What type of whey do I use for foliar spray? Where do you get it?

Kris Edler

We use goat cheese whey because that's what we can get. Cow milk whey should be just as effective, preferably from raw milk cheeses. The cheese producers don't separate it by types so just use what you can get.

I am in the plant collecting stage right now and I am wondering if my collecting is becoming hoarding! I am packing as much diversity (both kinds and different cultivars) as I can in my space. Your comments help to reconfirm in my mind that I am on the right path and not crazy as many of my neighbors might have me believe! I sort of take Mark Shepards approach to things...STUN (sheer total utter neglect). While not completely neglecting, most things are on their own to survive and I want to let the site and natural forces to do the selection of what should stay. I tend to observe things quite a bit and delay my decision making on what to do with things. So far it has paid off on a couple of things (critters at off a couple of Pecan seedlings and they finally have popped out a bud – the butternut with some disease on it's leaves last year seems to have corrected itself this year so it won't get chopped) and not on other s (critters, namely rabbits, have decimated quite a bit – seeded clover and alfalfa to try to distract this year so we will see).

Jen if you read Mark's book carefully he describes his STUN. Give the tree 4-5 years or 3-4 years of care to get it off to a good start then STUN. I made the mistake in one block of trying it from planting year and now have STUNted trees. You are on the right path, keep going. Soon the neighbours will be quietly copying some things you are doing, never all.

## Types Of Trees

Hi Stefan and everyone. I already initiated a discussion with you, Stefan about how I have recently been using 'feral' apple tree suckers as rootstocks for propagation. I already have a small orchard of Golden Russet, Sweet Sixteen and Haralson allegedly on EM26 (East Malling) semi-dwarfing rootstock. I say allegedly because I 'ordered in' these trees as 3 year 'feathers' from a local nursery. The russets are not known for being heavy producers, and mine are not. You will note that these are all late-bearing varieties, because my initial purpose was to start a small orchard for juice and cider – and late bearing varieties are good for this. I am not impressed by the development and vigour of these trees over time. They were planted 6 years ago. We are in zone 4b, clay loam soil, southeast aspect with good air drainage and soil drainage. So to get to the point of my question(s)

- Where does a 'home grower' acquire rootstock in small quantities (suppliers seem to favour large quantities of at least 100)?
- Does anyone have experience (especially anyone near here – southern Quebec) with 'Beautiful Arcade' rootstock?
- What about 'Antanovka'? I am under the impression that both these rootstocks are very hardy but difficult to find.
- Are there local sources of cultivars above and beyond the extremely limited offerings of the local/regional pepinieres?

I know about NAFEX and a few other sources of cultivars in New England (which seems to have a rich and vibrant presence of valuing heirloom cultivars), but getting any living tissue over the border is next to impossible. I grow and save seeds from quite a large array of vegetables. I acquire some varieties from Fedco Seeds in Maine, which also has a Tree division with a huge array of cultivars, but once again the border issue.

I will start with those questions for now. Thanks for any advice!

Brian

Hi Brian. Thanks for posting here for others to see. You're correct about the difficulty in getting small (less than 100) quantities. The past few years I initiated some group orders. Asking everyone who had asked me about rootstock to bundle their orders so we could order one larger order and pay less per rootstock. There used to be a rootstock grower in Canada called Groen's.

They still exist under a new name but have moved out of the rootstock business. We

now order from Lawyers nursery in Washington. They are real pros in rootstock. But you may as well order a big bunch or you will pay more for the phytosanitary certificate than the trees. Getting material over the border is only difficult if they are potted. Bareroot, like rootstock is ok but requires a phyto cert. Anyone out there want to get into rootstock in a big way in Canada???? An opportunity awaits.

You can try Eric DeLorimier's <http://pepinieriste.ca/> ; They grow all their own trees and sometimes they may have extra rootstock. Like for all nurseries ordering at least 6 months and preferably 1 year ahead will give you a higher chance of getting the material you're looking for. Ask Eric about 'Beautiful Arcade' and 'Antanovka'. Yes they are among the hardiest rootstock for apples. One of my 2013 interns planted a nursery of 1000 apple trees on Antanovka to be planted in zone 2!! So it better be hardy. I know 'Antanovka' is one of those rare varieties of apples. I say varieties since it tends to come true to type from seed. Most all other apples are cultivars and must be propagated vegetatively. If you are lucky enough to have a mature 'Antanovka' that is producing I would be interested in seed. I would especially like to get seed from the Kazakh apple forest apples. Especially if it came from bear crap! Bears have been selecting the sweetest apples for millenia in those forests. Good luck.

Hi Stefan, thanks for your thoughts, and thanks for correcting my spelling of A-n-t-a-n-o-v-k-a! I was recalling it from memory. I actually know Eric from Seeds of Diversity involvement – I am a grower member and a bit of a seed-head! I sell seeds locally and give workshops etc. as time permits. We exchanged scions a few years back. A generous and forthcoming kind of guy! I will contact him as you advise. If one has the patience and latitude of time, one does not need many rootstocks to start with – the beauty of biological systems, whether they are seeds, vegetative tissue or animals – is that they are self-perpetuating. This seems to be lost on the modern mind. I cannot bring myself to buy fruit trees at nurseries now that I have some practical experience in realizing that it is not rocket science to generate your own! I did not know that Antanovka was a variety that bred true to type – in fact I did not know any apple was an actual variety. Fascinating, I know that the centre of origin of apples was originally in and around Kazakhstan/Kyrgyzstan, according to Vavilov. Reminds me, I must send you a link to an interesting article about that in last months MOFGA magazine, as well as one on loss of scab resistance:

<http://www.mofga.org/Publications/MaineOrganicFarmerGardener/Winter20132014/FruitExploringinKyrgyzstan/tabid/2705/Default.aspx>

<http://www.mofga.org/Publications/MaineOrganicFarmerGardener/Winter20132014/LossofScabResistance/tabid/2711/Default.aspx>

About B. arcade and Antanovka – I think Cornhill nursery in New Brunswick carries them, but with a few qualifications – only in wholesale quantities being one. I will include here a few links to rootstocks & cultivars that I have come across mostly here in Canada over time.

<http://www.cornhillnursery.com/retail/apples/apple.html#root>

<http://www.pepiniereancestrale.com/> (there was a bit of a tiff between Eric and these folks regarding name – they are here in Quebec)

<http://www.silvercreeknursery.ca/index.php> (Ontario based and member of Seeds of Diversity)

<http://www.appleman.ca/korchard/rootstok.htm> (Not a seller of rootstock, but a good explanation of types available)

<http://www.cumminsnursery.com/rootstocks.htm> (Cummins Nursery in Ithaca NY)

These links may be of use to others (at least in Canada) looking for or researching rootstocks. I'm sure there are many more. Are you still doing rootstock group purchases, or are all your rootstock needs met by now? Do you sell or trade scions?

Be well,

Brian

You da man Brian. He's right for a future supply stool mounding for your rootstock is the way to go.

Stefan, I am curious to hear if you've used the honey locust pods much as food? I have fed them to livestock with good success and have been meaning to experiment more w/ them as human food. Honey locust miso? Loved the interview on permaculture voices. Keep up the great work!

Trevor Newman

Thanks Trevor enjoyed doing the interview. I have not used them for any use other than seed. What animals have you fed them to? I would LOVE to know what human food you can make of them. They are really starting to produce so we will have 100's of pounds soon and tons in a few years.

Size matters, what size trees do you grow, for what reasons and how do you do it?

William Bronson

William I grow dwarf trees to reach 12-15' max. Reason is we sell by u-pick so smaller trees are safer since we do not let members use ladders. How do we get trees to that size only? We use dwarfing rootstock m-26 for apples and train pears and plums to limit their size.

I have only read of the sweet pulp being used to make a beer...I've tried very basic experimentation with processing the beans and I've yet to figure out an efficient way to remove the bean from the pod en masse. I have used the pods as supplemental winter feed for both goats and horses..they relish them whole just store them in feedbags in the barn through the winter. The sugary pulp must provide a lot of nutrition too. We are now designing silvopasture systems using that as an overstory tree with things like chestnut. I've heard the pods can improve milk production with cattle..probably anecdotal but interesting none the less. I'd be interested in getting some seed from your variety. The thorny one I have does great and isn't even too thorny but I'd love to diversify. thank you

Trevor Newman

Absolutely. I can send you a pack of seeds. I usually harvest seeds in the spring on the grass. We extract seeds in two simple ways. Put the pods in a feed bag and whack the bag on cement until the pods are all broken then just pour out the seeds, some seeds will still be clinging to the pod pieces but so what, just give those to your animals. Second way put pods into a solid garbage can and put a weed whacker in for a few seconds. Voila like in a blender, some seeds get broken but are easy to screen out. I've always read of the sugary pulp but all the ones I've seen don't have it! Maybe thornless are not. Send me your address by email: [miraclefarms@videotron.ca](mailto:miraclefarms@videotron.ca)

I have a bit of a love interest for old and exceptionally rare varieties of plants, but I was wondering how the choice of cultivar affects the permie orchard, if at all. Modern varieties of fruit trees seem like they need a lot more pampering most of the time. Do you find that using certain cultivars makes a large difference? Diversity is probably the name of the game so I would expect a large number of different trees of each type. Old and new. I somewhat assume that the older varieties would do better in this sort of orchard, but I don't have the experience to back that supposition up.

D. Logan

You are correct about the modern cultivars. They were mostly developed under a blanket of pampering, not the real world. Except for the PRI series which were developed with disease resistance in mind. Old cultivars (pre-1920 say) were real world situation cultivars and not sprayed. Some are more disease resistant and others not so much.

Yes the one you choose makes a HUGE difference at least regarding disease resistance. Old and newer do well as long as they have a large or total disease resistance. There are usually disease resistant lists for each fruit growing regions put out by ag agencies.

We are starting a food forest on our 60×140 lot, and I was wondering what fruit trees would be best for this small space? Should we just cram as many different varieties as possible into out lot? Or are there some fruit trees that would be better suited to our small space? Should we invest in the dwarf varieties or just heavily prune a regular sized tree? What type of pruning is best for the small spaces, or does it vary for different tree types? Thank you for taking your time to answer all of our questions!

Jenna Sanders

Jenna I would refer you to the film for most of these questions, regarding pruning and training. I would suggest using dwarf if they are hardy in your area, disease resistant certainly. Make sure you have 2 cultivars of each species you cram in for proper pollination. If you can grow cherries in your part of Michigan they are nice along the north edge since they can be the largest tree. Plums, apples, pear, kiwi, peaches, small fruit, cane fruit,... Why limit yourself? Just try to put enough for you and the wildlife. The major problem in the city is wildlife helping themselves to the crop from a limited number of trees.

I believe in that video that you were using Honey Locust as one of the trees in your permaculture orchard, largely for nectar for pollinators, and to block same genus trees from being too close together for pest insects. I know there is some controversy about whether Honey Locust fixes nitrogen (or less of it), since it doesn't produce root nodules, but it is a legume. What's your experience on this? When hearing Mark Shepard present back in February 2014, I was surprised to hear him say that he'd planted plenty of Black Locust in his plantings, and not noticed a difference in terms of assisting nearby fruit trees, though he said there was a measurable difference on grass and herbaceous plants near the locusts. He also mentioned the important fact that locust thorns have burst a lot of tractor tires on him!

My overall question is: have you noticed nitrogen-fixing trees affecting crops/tree health, and if so, which ones seem to have the most effect? I love locusts – I think because they have some amazing qualities (nitrogen-fixing, rot resistance (Black Locust), huge pods for forage (Honey Locust), soap substitute (I think it's Chinese Honey Locust), Caspian Locust (sweet sap), but also have some management challenges (large thorns, fast-spreading with suckers).

Rob

Rob I don't see where you're from. Honey Locust are our hardest working trees. As per Permaculture design the elements you use should have 3 functions. Here's what honey locust do for us:

1) FIXES NITROGEN. I don't care how but they give us a commercial yield on our fruit trees so I assume they are doing something in that department.

2) In BLOOM nothing we grow beats honey locust for straight power of attracting insects. It's just amazing the insect in those trees in bloom. Not just bees, everything that sips nectar and seeks pollen is in there.

3) Once the trees are tall enough (12-18') we use them as LIVING POSTS. Attach our frost protection wire and pipe on to them.

4) LIVING STAKES. We grow our annual vining crops up onto them (peas, beans, cucumbers) in the early years and are now switching to our perennial vines (grape and hardy kiwi) to grow up them.

5) MULCH the leaves fall as leaflets and make a great mulch that quickly turns to compost under the trees. It allows many seedlings to sprout and grow beneath them serving as a LIVING NURSERY tree.

We operate as a members only U-Pick. Black locust with its thorns is not a crowd friendly tree. All our honey locust are the thornless variety 'inermis'. We are trying all nitrogen fixers and have not seen a noticeable difference so far. Time will tell?

Wikipedia says Honey Locust range from 66-100'. I can't say I've ever seen one that big in my area – where they are just barely native species at the very north of their range. I see them up to about 30' or so. I imagine those tall heights are pretty old trees in the south of their range. Note that I've only tried this so far with Black Locust, and only for a few years, but Martin Crawford uses this technique with nitrogen-fixing trees (Geoff Lawton too – I think it's him that calls them 'nurse trees'). I expect Honey Locust would respond the same way to coppicing, but don't know for certain. Also – as noted above, it is said not to have as much nitrogen-fixation.

Rob Read

Yes Honey locust is an excellent coppice tree. Most of its nitrogen release happens by pruning and subsequent root sloughing or so they say.

As you know, I will be in your region so this is a personal question. What place, if any would a nut tree have in a permaculture orchard in your climate and where would you put it in the NAP setup? Also, I would like to know how are the peaches doing in your climate.

Hugo Deslippe

Peaches took last winter hard (-28c). They are slowly coming back but a back to back winter like last will likely kill them. Oh well so much for play trees. Nuts: we have many types (hazels, Japanese walnut, black walnut, oaks, chestnut). We are trying most as single trees in the NAP instead of a fruit tree. Except for the black walnut which we use at the start of the rows and have a few different combos next to them to see their effect over the years. So far only one black walnut is not happy being next to a spruce. We have some near apple and pear with no noticeable effect so far. Trials always trials. Hazels do great instead of a fruit tree and add nicely to diversity of families in the row.

We are planning to start a permaculture orchard in PEI, Canada this spring. Our climate zone is similar to yours in southern Quebec ours is 5b/6a. Is there a list of what cultivars of apple/pear/plum/cherry/nitrogen fixer trees do well in your orchard and which ones don't do well. It would be helpful. Thank you

RonPaul

Plum: Mount Royal, early golden (not yet producing so don't know long term how good it is) Cherry: SK series, the romance series from U of Saskatchewan Pear: some faves summercrisp, savignac, conference, Taylor asian pear. AVOID the most

recommended flemish beauty (we call it flemish ugly) unless you want to spray as much as for macintosh. Apple some faves: belmac, trent, golden russet, haralson, haralred, the fave list tends to change every year as I discover new ones. The full lists are coming out soon in the film.

NOTE: what works for my orchard may not work at all for yours. I know one organic grower in our area who ripped out all his Trent apples since they were too susceptible to fireblight. Try a wide variety and refine after a few years. Don't rip them out instead cut and over-graft. Quick and easy.

My opinion is that nut trees can be very important. I am not sure how they would work with Stefan's model of timing harvests on rows to be the same would be thrown off with nut trees in the mix since most nuts are much later harvesting than fruits. In my setup I am going with mixed nuts and fruits with different ripening times in my back fields because I plan to harvest almost everything with animals and want to be able to swing them through the rows three to six times a year going from mulberries to peaches to early apples to pears to late apples to pecans to persimmons.

Paul Ewing

Good one Paul. Timing is not a problem, we put the Hazels in late September harvest rows as that is when they ripen mostly for us. Animals on 6 pass rotation will GREATLY reduce insect pressure, leaving you with lot's of beautiful fruit out of reach of the animals.

In researching apple varieties for our short mountain season, I look for data on bloom and harvest times. I try to choose at least mid-season bloom and no later than midfall harvest. It can be hard to find info on many varieties, especially cider apples. Do you know of some good references or have a chart of what blooms first in your orchard and order of harvest?

Ann Torrence

Ann you hit on a tough nut to crack. Harvest dates are the key to a good grocery aisle planting. We aim for 3 periods of 10 day harvest per month. Getting these dates RIGHT is the key. I don't have a chart but we do note harvest dates. Most of the cultivars for our area may not suit your mountain climate. Contact your local nurseries, any governmental fruit collection body, NAFEX chapter in your area and private collectors. One good reference for our area: <http://goo.gl/x0GTBm> (apple, plum, strawberry)

Good day, Stefan! It is very nice of you to answer questions and I see there are quite a few very excellent questions already been tossed out at you. I have a very newbie permie question for you. I am looking at options for planting nitrogen-fixing trees and nutrient accelerators amongst my fledgling food forest and would welcome ideas of good trees to consider or to avoid. I'm in zone 8a (or is that 7?) on the southeast coast of NC. My homestead is a mere .6 acre.

Currently planted: Santa Rosa Plums (3 of them) and a blueberry (lone survivor of a planting of 9), and 9 mulberries. I also have 60 bush willows (SX61) planted as a fodder source for rabbits. (There are also 4 mature pecan trees, a number of young pecans planted by squirrels, and a couple of oaks and a holly tree which I hate.) Planned for planting (or trying again): figs, blueberries, peaches, apples, Chojuro Asian pear, strawberries, Chickasaw plums, muscadines One tree that I've read to be a good nitrogen-fixing tree in our area (if somewhat invasive) is the Mimosa (Japanese silktree) (*Albizia julibrissin*). I've also got a lead on some Autumn Olive seedlings. Other than that, I'm open to ideas.

Tina Paxton

Tina you live in one of the nicest places on earth. I worked one fall at Mattamuskeet National Wildlife Refuge in East central NC. If I had stayed 3 more months I would have never left. Fantastic people, pace of living and environment. You already have a great thread for answers. Sounds like your choices are good. I would like to hear from others what would be great N fixing shrubs, max 10'. Since many plants Tina is mentioning are shrubs or small trees. I'm not familiar with mature mimosa height. A few more N fixers would be nice, anyone else have some suggestions for NC?

I'm establishing a mini-orchard and I was told that for limited space the best choice would be to plant columnar fruit tree varieties, mostly Ballerina columnar apple trees – 'Maypole', 'Waltz,' and 'Polka' varieties. I was told that such trees can be planted very dense, the distance between them can be as small as 80-100cm (30"-40"). I have searched the Internet a bit and it seems that there is a mix of opinions about columnar trees – some confirm they grow as advertised, some say it's a scam and that these trees do not keep columnar form and grow to sides, cannot be planted as dense as sellers say and are not a good choice.

Richard Gorny

Sorry Richard I have never used columnar cultivars. I did see them at a research station where they were developed and they were as per the pictures.

## Other Plants

A very technical question about planting hostas: how close to the tree would you go? I've heard concerns about letting the trees 'breathe' by not covering 'root flares.' The most obvious concern with root flares is not covering them with soil or mulch, but what if they are heavily covered with hosta leaves during the growing season?

I'm thinking it wouldn't be a concern, because air would still be able to get in there. And a note which many will already know: hostas are edible when coming up in the spring (just before unfurling, or as they are unfurling.) I've only tried them steamed/stir-fried so far, but they are very good – a nice mild green. I've heard you can eat them raw at that time of year as well, though don't wait too long – as they get very acrid tasting once the leaf is fully open. I wonder if the flowers are edible too? They are loaded with nectar.

Rob Read

Rob I plant them half of their total spread from the tree, usually 1.5-2' from the tree. No need to waste plants there are lots of trees that could use them. I tried them raw this spring, not my taste but maybe steamed.

Hi Stefan, I also run a permaculture orchard, but it's on a smaller scale and just for my family and community. I am interested in how you deal with what non-permaculturalists call "weeds". By that I mean plants that grow quickly and unplanted, and can go from seed to seed in say, 70 days. Since I'm growing for my family, I eat a lot of the weeds, but you're doing things on a much bigger scale. I leave horsetail, comfrey and dandelion because they're such good dynamic accumulators and I chop and drop. I leave umbelliferous plants because they're so great at attracting bugs that defend the orchard by killing plant attacking insects.

Do you have a general plan for dealing with weeds? They're also by definition great botanic diversifiers of an orchard. I'd love to hear what you're doing with the weeds in your orchard.

Thanks,

John

John, great observations. 'Weeds' are not the problem but point to the problem (Sir Albert Howard, an Agricultural Testament (I think)). Weeds are great at indicating problems. Horsetail tends to show you have an impervious wet layer that could have been reduced or solved before planting by sub-soiling or key-lining. Dandelion is

great to show calcium deficiency or compaction. You may do well to 'rip' your lanes to improve aeration and de-compact. OR just add a lot of organic mulch and let worms do it for you.

If you can add cardboard and 4-6" wood chip mulch under all the trees to the drip line, do it. It would solve a lot of your problems. We use plastic because of the scale. We can't get enough material to put mulch everywhere. After spreading 30 loads did not want to repeat it the next year and over and over.

Creeping Charlie has proven to be a beneficial insect powerhouse. 6 weeks of bloom at a time of year (early may to mid-June) when it can be too cool for insects to work the trees. This ground hugging creeper provides food especially important at those times and on nice days. I used to dread it now I Love it. Patience with a plant rewarded!

I'm really curious on this topic too. My current orchard is also pretty small (20 trees – a lot of them nitrogen fixer 'nurse' trees, most dwarf or semi dwarf).

Rob Read

Rob At first, I was trying to 'weed' the orchard, but now just accept that Creeping Charlie (Ground Ivy) is beautiful, and as long as its not strangling something, it's a great ground cover, and also right now in full flower, an excellent pollinator attractor. Grass is harder for me to accept, but I've come a long way into just letting that be too, especially as the balance towards broadleaved plants is starting to emerge.

Hello Stefan, What is your most successful/favorite guild so far? Do you replicate most of your guilds around your keystone species, or are most of them different? BTW – I look forward to your video, and have found your website very helpful, all the way down to the links section. Thank you!

Aimee Grimmel

Great question Aimee. All the onion family is great. Chives, garlic chives, Egyptian onion, perennial bunching onion, perennial bulbing onion, wild garlic (ramps), garlic, all work very well. All the herbs where there is enough sun. Perennials for beauty and nectar, use lots of them. Perennial vegetables work great. We are trialling a bunch of them and are working out our top 15.

Certainly rhubarb, asparagus, sea kale, sorrel, are top of mind. We should have a good supply of seeds for most of these by the fall and will be starting a seed sideline to provide one stop shop for all things Permaculture Orchard in the next years. Read Mollison's 'phases of abundance', we have reached abundance for most plants.

We are still trying combos. So far everything has worked well to neutral. Only a couple of plants did not work but only because we use plastic mulch (loosetrife tried to lift the plastic).

## Ground Cover

Hello Stefan, Thank you for your orchard pioneering and for being here to answer questions. What do you like to use for ground covers around your fruit trees, and how densely do you think it's good to plant them? I keep mostly wood chips around some, with things like yarrow and chives and other alliums in small quantities. But I have a young apple, for example, that has some kind of alpine or wood strawberries (they were here when I moved in and continue to send out runners prolifically) and mint growing all around it, and I wonder if it is too much or what the apple might prefer. Thanks very much,  
Anna

Anna I like to grow what grows, thrives and spread on it's own. We have a good list of plants in the film we use. The may not be the ones that you would use however. If wild strawberry and mint grow well, grow more of them. Let them form a green carpet it is not too much for the apple in fact those are natural guild plants for apple since both like a little shade. Maybe just add some onion family to the mix (chives, garlic chives, garlic, Egyptian onions...)

When is the best time to mow?

Kath Macintosh

Kath, watch your grass and know when you need to access the area. We pretty much mow on a weekly schedule. Once a week we mow one sixth and mow weekly. Gives plants a chance to flower and some set seed.

Hi Stefan! I'm in Bulgaria, so different climate to yours, but I am wondering what grass you grow between the rows and how often you mow? It looks all green and lush! I am trying to do everything small scale, no electric or gas run equipment, so I would have to scythe, and would like to keep it to a minimum. Do you have a slow growing grass? Do you think Buffalo grass would be ok?

Margie Nieuwkerk

Margie I tried to scythe in the beginning. Bucolic, romantic, great exercise. After a few 500 foot rows I realized this is WORK and I had another 25 rows to go!! Small is beautiful. Grow the grass that grows best in your area. Look at what grows along the sides of the ditches. That's usually a good indicator of what is best suited for your conditions. Use the grass to chop and drop. We now use mow and blow as a faster version of chop and drop. Maybe you should just grow herbs and vegetables in the rows if it is small enough to maximize your yield. That's how you can be profitable from year 1.

Stephan. I enjoyed the movie very much. I was wondering whether you have ever let grass grow around your fruit tree and can talk about the difference in yield?

Nathan Pickard

I planted another 1.5 acre block in 2008 the year after the block in the movie. I let grass grow around the trees. It's a disaster. Many trees are 4 feet high and covered in flowers. These trees should be 12 feet high. Yield is 10-20% of what they should be. A third block of 2 acres with a plastic mulch planted in 2009 gives far more and is doing much better. Lesson: if you plant fruit trees make sure they have 5 years WITHOUT ANY GRASS competition. Once the trees are mature they can tolerate some grass but will yield less.

Once the grass is well established & grown in, how do you apply the plastic mulch? One row on each side of the fruit trees, cut where needed or fill in with other pieces in between?

Wooden stakes hold it down until chop & drop covers it?

Serge Leblanc

Serge, I explain the process visually in the film. Yes one row on each side and a slit where the tree is. We use rocks since stakes would just get in the way and make holes where we don't want. Rocks are abundant and simple. The mow and blow is not enough to hold it down you need weight, so rocks. Rock on!

I have a small orchard, most trees are eight years old, and I have a ready supply of wood chips. Would you recommend spreading chips around the trees to subdue the grass and help nourish the soil?

Curt Regentin

Curt, wood chips are THE best mulch material for trees, especially fruit trees. By definition use branches that are 2" or less. Not trunk wood. Hardwood is best. You have conifer from your trees and hardwood chips from the town. I would mix 50-50 so as not to use just conifer chips. Yes spread around the fruit trees but put a layer of cardboard first to get better grass suppression. No chips right along the trees trunk. Good one you're doing.

## The Soil

Thanks Stefan, Great ideas. I had to look up ripping to understand what it meant. I have seen in a video a kind of a solid, tall, metal bar , 5' tall or so, that people step on and it acts like a plow, but it doesn't turn up the soil, just break it up. That might work well because I don't want to kill the mycorrhizal fungi I've been inoculating. Also all the microbial soil life gets exiled from its homeland. I can't get in there with a tractor because it's a suburban yard, and it is already extremely densely planted. I think I could use a bar like that as a kind of suburban equivalent.

I have already been spreading inches of wood chips and cardboard every year. The soil has gone from horrifying pure clay to fairly good clay loam, which is quite an improvement. We also are getting way more mushrooms than before, which should help make a spongier, more draining soil with more microbial life. I have been using the deep rooted weeds like dandelion and horsetail to help break through the heavy layers, and I think chop and drop/toss should bring the nutrition and microbial life up. I'm already at 10% organic matter and a TCEC of 15.4, so I think it's working. Has anyone here used that kind of bar to break up compacted soil layers? Thanks,  
John Saltveit

Wahoo! John 10% OM is fantastic. You have already seen the changes. Keep it up. 6"-10" of shredded leaves have completely mellowed a friends heavy clay in an area that once was a brickyard.

Hi Stefan, Thanks for coming to answer some of our questions. Some areas of my property are not what someone would consider good spots to plant fruit trees. If you don't look too closely, it just looks like hills with rocks and moss. However, those spots have good sun exposure and native trees (arbutus, Douglas fir...) don't seem to have a problem growing there. My questions are: do you think it is possible to grow say an apple tree on difficult terrain? How would you proceed to give that tree a decent chance?

Sam Boisseau

Sam everything is POSSIBLE to those who believe. Do you want to put in the work to achieve it is the question. My take is 'It is easier to choose the right site, than to make the site right'. You don't seem to have the right site, so want to make it right. Possible but takes much more work. Move to a deeper soil site or grow what the site is best suited for. I'm not familiar with your part of BC, ask Gregoire Lamoureux of Kootenay Permaculture Institute about what is best in your area.

Can you give some more insight into the amounts, types, and timing of application of amendments? Which of these are produced on-site and which are external inputs?

Big question Patrick. I touch on it in the film. The 3 essentials for a healthy soil: organic matter, minerals, soil life. Forget all the rest. Use what you have on site or can easily get for organic matter (except sawdust, not a good C-N ratio). Biochar will become one of the absolute best OM additions in the next few years, as long as it is charged before using. Add minerals to REJUVENATE your soil. You have occasional dusting of minerals from volcanic eruptions to make your soils younger, that's great. Otherwise basalt is excellent mineral in most situations.

See Joanna Campe's magazine Remineralize as a great resource on mineral subject. Soil life is best given as compost (always apply on cloudy evening before a rain for best soil life effect, those micro herd die in the sun). Or as aerobic compost tea for larger areas. That's the insights. Now for the details.

Amount is money in the bank. None of these will burn or damage our soil so be generous and the soil will be generous back for years to come.

Timing ASAP but don't kill the micro herds.

On-site: as much as possible, external mostly for the minerals. Soil test will give you an idea of what key elements may be lacking. Copy nature and surface apply. Never add amendments in the planting hole (see research by Dr. Carl Whitcomb on the subject, don't argue with me, I use his info for technique of planting).

Thanks guys, Mother Earth News has a diagram and article about building a broadfork from John Jeavons (Grow more vegetables than you thought possible). It looks like it might be fun to build. I may use a pitchfork until I build or buy one. I forgot to mention that I also usually gather free diverse leaves from trees not in my yard in the fall to add to the soil. I often mix gravel and old wood into the soil when I plant a new tree/shrub, to improve drainage, mineral content and fungal life. We have heavy clay. When I have moved them afterward, they are doing really well.

John S

Broadly speaking I don't give a fork about using such a tool. I would much rather let the soil life do it. Worm and ant will both tunnel, aerate, mix in organic matter and generally do wonders for your soil.

So I just watched the film again and I have a couple of questions.

1. You mentioned that your wood chip mulch only lasted 6 months or so. When you are explaining how to correctly plant a tree, you lay down a layer of cardboard and then wood chips. How long does that typically last? Is that your preferred way of planting or do you plant and then lay out the plastic soon after?
2. People often recommend pruning a whip after planting. I believe to encourage a vase shape for the tree structure. I assume you do not do this if you want a central leader?
3. In the film you mention an alternative to plastic is to use plants such as hosta. How does this compare to using plastic right after planting? What about to cardboard and wood chips? Does hosta compete too much with young trees to get proper growth? I would like to avoid using plastic in my orchard if at all possible and am hoping to find an alternative while still getting good growth/yields. Are there other plants that would work well? Comfrey? Maybe it would be better to use a biodegradable sheet mulch for 2-3 years before planting living mulches so close to the tree?
4. After training branches to below horizontal, what is the growth like? You said a good

time to beginning training the branches is when they are 3' long. Will they only grow very slowly after being trained? It appears that is the case. What would you recommend for apple tree on b118 rootstalk? An 18' tall tree with only 3' long branches might look a bit funny. Maybe train the tops in order to limit the height?

5. When you were demonstrating pruning, you mentioned that removing the branches/spurs underneath a branch is the polish when pruning. It sounded like that was optional. Do you usually remove them or leave them be? Thanks so much for producing the film. I really enjoyed watching it. The film has been extremely helpful in my planning of a Mark Shepherd / Stefan Sobkowiak influenced planting going in the ground this fall. Keep up the great work!

1. RJ The way I show in the film is the preferred way if you are NOT using plastic. It should last for 2-3 years our site soil is VERY alive so the exception. We mostly planted in fall and laid plastic in spring.

2. Correct, do not touch or prune the central leader, it allows the tree to follow it's natural architecture.

3. If you can use cardboard and woodchips for 1-2 years to really give the best to the young tree then you can add comfrey or hosta. I have used both plants and unless you use a large clump of comfrey will not get the smothering effect of hostas early start and large leaves. Hosta also does better with some shade.

4. The branches continue to grow outward until the branch reaches maturity (flowers near the tip). The growth then slows because of fruit bearing and training speeds a branches fruit bearing by simulating a load of fruit on the branch the year previous. A big load of fruit bends the branch downward and once it reaches below horizontal the hormonal stimulus changes to encourage fruit production instead of mainly vegetative growth. Try it on a mature branch you will be surprised at the change.

I'm not familiar with b118 rootstalk. You will not limit the branches growth that fast. Usually when you train branches you will eventually train the top when it reaches your desired height by bending it as well.

Good questions, thanks.

I can make as much biochar as I want... my question is how best to charge it. I have a small pond (about 700 square feet, ~20,000 gallons). There are currently three muscovy ducks living in the pond. I would like to use biochar to soak up nutrients in the pond and then use the biochar around the forest garden and regular garden. Can I just throw a burlap sack full of char into the water? Is it better to put use a solar pump to pump the water out of the pond – maybe over some rocks and the biochar? This will aerate the water and make a nice little waterfall. Will the biochar turn out any better? Is there any way to tell when the biochar is sufficiently “charged”? There are certainly nutrients in the water left by the ducks, but it won’t be the same as covering the biochar with pure manure. Thoughts?

Karen Walk

Yes Karen your burlap bag technique is the simplest low tech but very effective method of charging biochar. As long as you have small enough pieces of biochar and not big lumps of charcoal. You have to give room for the micro herd to get in there easily. Good for you, good for the pond, good for the biochar then good for the soil.

## **Pests and other critters**

Stefan: You mention strategies for rabbits & voles in your video. I was wondering, however, what your experience with deer has been, and any strategies for mitigating the impact they have on your orchard. Do you have fence s or not? Loved the video and all the specifics it contained. Thanks!

Rob Stenger

Rob our experience has been one deer in 20 years and we just chased it out. We are blessed with a 5’ frost fence with barb wire above and below and are next to the town so no deer pressure. I would go with Premier fencing systems for deer, especially the 3D fence. Never tried it but it makes sense, and per foot a reasonable cost. So fence or get eaten. Forget all the ‘repellents’ deer habituate to any stimulus in their habitat quickly. They NEVER forget an electric fence shock, at least not after the second time!

I am the newest of newbies. I had barely heard of permaculture before a few months ago, and of forest gardens not at all. Our family has been in apartments for the last decade (moving in between each degree), but we’re moving this fall (hopefully permanently) to a

house in the Rio Grande Valley in Texas (zone 9), and a forest garden is my dream. I have almost no experience with growing things, so I intend to proceed slowly, but I am so excited. So far, I have read: Gaia's Garden, Paradise Lot, Perennial Vegetables, and started the two volume Food Forest books, as well as a book about earthworks rainwater harvesting for dry lands. I have read that you need to spend a year observing your land before you jump in, which gives me a lot of time to learn more, but I thought my kids and I might dabble in some annual gardening this fall, just to get our hands in the dirt.

On the property we have purchased, there are already several mature trees: Lime, Banana (several), Fig, Pecan, Ash, Texas Olive...I want to add some more citrus and persimmon for sure, at some point. The one thing I want to address kind of quickly, is the lime...it appears to be the favourite tree of some local fire ants, and I would like to know what I can plant around it to deter them– would ginger/galangal/turmeric be good choices? Daffodils? Garlic? Chives? Help!  
R McCauley

I can't grow any of the plants you mention. But why do you want to deter the fire ants? Are they harming the tree? Are they directly harming you? Ants are extremely useful in soils that do not support earthworm. They both provide the same ecological function for FREE to you. They AERATE the soil to great depths. Bring down organic matter (saving you tilling, ploughing, work). And overall improve the soil immensely. I know they have a bad reputation but so do wasps which are the ABSOLUTE best ally you can have in the garden against caterpillars of all kinds. Give the fire ants a chance and see what GOOD they do. If we take one step toward nature, nature will take 10 steps toward you. If you take a step away from nature you will always be running from it.

Last summer was a terrible year here for apple borer damage. Anyone have guild/companion plants for apple to deter borer? Moved to a beautiful property with LOTS of wild apple trees. Have grafted several and trying to plant guilds around them.  
Suzanne Lefebvre

Sorry never had one in our orchard. Know people who are plagued by them. They ended up putting screening around the base of the tree 0-3' to keep them from infesting.

Thanks for your valuable time this week . I am looking for strategies to deal with plum curculio. We have 6 peach and 2 nectarine trees spread out over an acre and a half. The damage has been consistent since season one. We have free range chickens and remove all fallen fruit. To no avail. Any tips would be much appreciated.

Wayne Stephen

Wayne, curculio is an insect we just live with. I agree there can be a WIDE range of damage. Stone fruit are more attractive to it (plum, peach). Changing the design of the orchard has solved a lot of problems, by design. NAP. Trios. Make each fruit tree an island onto itself. Never 2 plum trees should touch. Never 2 peach trees should touch... Apply this logic and it solves a lot. Trios means the same species of fruit only re- appears every 3 trees, at most, and should not be the same cultivar. So much is solved by design. Trios explained in film or on our youtube video: <http://goo.gl/83mqfl>

Thank you Stefan. I had already come to the conclusion peaches are not the best tree for my region. Apples, pears, pawpaws do much better. So many variables in the curculios life cycle that make a blanket fix near impossible. Thanks again.

Wayne Stephen

Good for you Wayne you are observing what is most SUITABLE instead of what you WANT for your site. Don't try to fight nature too hard it tends to have a lot of perseverance.

## **Animals and friendly insects**

Hey Stefan, Have you grazed poultry in the orchard?

Kevin Searcy

Kevin, we have had a few thousand over the years: turkey, chickens (broilers and layers), ducks, geese, guinea fowl, quail, pheasant. Also rabbits, guinea pigs and at one time 100 sheep in the 12 acres to do all the mowing. The subject of animals in the Permaculture Orchard will likely be a subsequent film in the future since there is so much to cover on the topic. Would that be of interest to you?

It's too bad there wasn't anything on the chickens in your movie. Any other livestock that you have?

Cory Arsenault

We have a few sheep, later in the season we get broilers and ducks. Some years turkeys, guinea fowl, rabbits, quail, pheasant. Cory we are entertaining the thought of making another film on Raising animals in the Permaculture Orchard. Would that be a good topic to follow up on the film?

As for chickens, do you also give them grain? Or do they only eat compost?

Paul Jennings

Yes we give them grain as well. Would be better cafeteria style where they choose the type they want. In the compost they get all the protein they need, protein is the expensive component in feed.

I was considering running turkeys in my future orchard based on the video's principles. But I imagine it would be hard to keep turkeys in the alleys and out of trees and shrubs because they are flighty. I haven't owned turkeys but am in preliminary pondering stage...and wondering how they would work in conjunction with my orchard. As an aside—I have some fruit trees already but they are offset rather than planted in rows. Maybe dwarf fruit trees would work better as far as keeping turkeys from flying up high into them. I would prefer to not have to do a fully-enclosed turkey tractor with roof. Stefan, what do you think of dwarf fruit trees for an orchard? Thanks,

Beth

Beth turkeys are a natural in any orchard, assuming it is not sprayed to death and has vegetation other than trees. They will roam but should return to their home, roost and grit pile. As long as they have all they need in your orchard (food, shelter, roost, grit and water). Our orchard is well fenced but the turkeys would fly up and over walk along the road and eat the gravel then come back in. I knew it was time to refill their grit pile.

We set up a mobile roost near their bulk corn feeder and moved it every other days. A GREAT WAY to build up a weak soil area is to simply put the roost over it. Here's one of my photo albums, from it you can see older albums. In some older ones you will see the roosts with turkeys. <http://goo.gl/URAJEH>

Did many of your bees die this winter?

Megan Williams

Yes we wrapped 9 hives in the late fall and only 2 survived. At this pace we can't produce hives quick enough to replace the losses. At least we may be back to 8 now and the stronger and larger hive has not filled up the 2 boxes yet but it won't be long. Maybe a repeat performance next week.

I have a few young (2yr old) apple trees (5' tall) in the paddock where my turkeys are. They're a little too small for the turkeys to roost in. The chickens have been more damaging, scratching up the mulch I put down. I did lose a 2 year old hazelnut very close to where I feed the turkeys but it might be a coincidence or the chickens may be to blame. The problem with dwarf trees is that they are relatively short lived.

Cj Verde

You may not want the turkeys roosting in your trees. They can kill them by dropping a little too much LOVE onto them. Best they move around where they roost. Mobile roost works great.

## Orchard Patterning

I noticed you put Dave Jackie's Food Forest book on your website. Have you done any work making orchards look more like patterns found in nature rather than straight rows? I was thinking of the mandala pattern for example.

Nathan Pickard

Nathan we bought the orchard already planted. Ended up ripping out most of it. The infrastructure was still in place (irrigation, posts, wires, grassy lanes). We needed to move fast so we just kept the existing pattern. Simple, safe, efficient. When I look at trees in the forest I see lots of straight and parallel lines. Nature is not without straight lines it just depends what patterns you're looking at. No I never tried a mandala, our smallest row has 35 trees, hard to fit that into a mandala.

Plus how do we ever expect mainstream fruit growers to adopt a permaculture approach by suggesting they HAVE to use mandalas? Let's give them a chance to get familiar with the approach. It's already a HUUUGGGEEE stretch for most of them to think of multiple species in their orchard. One step at a time.

That makes a lot of sense. I am showing your video to someone this weekend who is buying 12 acres and is very conventional. I think your video is the perfect thing to show him he can make more money by going your route while not straying so far away from a normal orchard that he thinks we are all crazy. I was just curious if you had experimented with it at all and good reasons against it from a practical standpoint.

Nathan Pickard

Nathan don't expect everyone to get all excited as you are about it. It take several exposure to such 'RADICAL' ideas as mixing a lot of species in an orchard,even though it is so logical and works well.

I never experimented with mandala's. If you can figure out an efficient way to use them on several acres I'm all ears. Remember we are WAY NORTH in Canada. Our limiting factor most of the year is sun. Most (all?) Mandala ideas are applied in tropical and subtropical areas where sun is not a limiting factor in fact mandala's help limit the sun's effect on the root zone of the trees.

## **Permaculture concepts**

What are the differences between a Food Forest and a Permaculture Orchard?

Size. Easily debatable and I'm not one for debates. I consider more than 150' of row (about 20 trees in my orchard) to be more than you will need for your own use. So beyond 20 trees you no longer have a food forest but a Permaculture Orchard. There comes a point where the size and scale goes beyond a garden size. Permaculture Orchard is usually sized for some sort of commercial harvest. If you find a more diverse orchard than ours in Eastern North America please let me know. Not just for a collection of cultivars but for trees, shrubs, perennials ground covers and vines. We are always adding more as we find them. First to try and if they fit well to use more of them. Start with as much diversity as you can get your hands on whether you have a food forest or a permaculture orchard. Let the site decide what will do best.

The Permaculture Orchard has a rather limited number of species and diversified cultivars. A Food Forest has many more species.

Richard Hauser

Richard I followed Mollison's advice in 'Phases of Abundance'. And although it is certainly at a scale of an orchard if you find a more diverse orchard than ours in Eastern North America please let me know. Not just for a collection of cultivars but for trees, shrubs, perennials ground covers and vines. We are always adding more as we find them. First to try and if they fit well to use more of them. Start with as much diversity as you can get your hands on whether you have a food forest or a permaculture orchard. Let the site decide what will do best.

Hi Stefan, thank you so much for your work in spreading the ideas of permaculture to the world at large. I spent much of this spring bicycle touring through the central valley of California, pedalling past miles and miles of identical rows of almond and pecan trees. I had a lot of time to contemplate solutions to this obvious problem and I am curious to hear your thoughts.

The general theme is, of course, ruler straight lines of trees with either bare plowed dirt or a small amount of grass in between. There is plentiful space underneath the trees to grow other crops, and it would seem that the orchardists would be utilizing this space to produce a second income stream, but in my entire journey I only came across one orchard that had hay growing between the young trees. This was the only example of polyculture I witnessed in the valley.

As a permaculturalist, I have plenty of ideas about how all this space could be used to produce more food/income, add fertility to the soil, solve the problem of migratory bee keeping, etc., but I wonder why these concepts are non-existent in the world of commercial food production. What are your thoughts on this? My thoughts are that the core of the problem is that of cooperation vs. competition. In the farmers' minds, different species in the natural world are locked in a war over resources. To them, a crop growing in the empty spaces between the trees would be stealing water and nutrients from the trees, and neither crop would do as well. In permaculture, we know that the natural world operates on competition, and that the right plants together will result in better yields for both crops, but why is this idea so foreign to an industry that in the business of better yields? How do we convince these farmers who have been operating on the competition model for so long that

the better way to go is cooperation? I feel that if they could be convinced to at least grow a legume cover crop in between the trees, the doors would be opened to more complex polyculture. I am curious to know if you started out as a traditional orchardist using conventional methods and then discovered permaculture, or did you discover permaculture first and then decide to become an orchardist?

Ah Jesse your thinking and musings are correct. Keep those thoughts pure and unadulterated. California is a balloon waiting to pop. It is so far from regenerative that it needs to pop to find a proper balance again. Yes their limiting factor is water but more so mono-cultural notions in their heads. 2 crops producing at 70% capacity of yield gives a TOTAL yield of 140% to the space. 3 at 60% gives 180% and so on and so on. They only focus on 1 giving 100% and then POP. The balloon bursts and they have ZERO. Your reasoning is right but as some wise person noted “Common sense is not so common anymore”.

I bought a conventional orchard, never farmed conventionally. Went into an organic transition right away (3years) then certified organic. I understood permaculture before I ever heard of it. I have a similar background to bill (wildlife biologist then Landscape Architecture for Design). I just ‘discovered’ permaculture then one day found the book. That was it. Someone had written the ideas down. Bam! I was sold, finally someone had put it all into a easy to read book (Designer Manual – yes it was easy to read since I had a solid background).

After I ‘discovered’ permaculture I was faced with what to do with this organic orchard that didn’t work as an ecosystem. So we started a 6,000 tree nursery and began to rip out trees. Keep up the great thinking but match it with great DOING. There is no failure only feedback.

## **Starting an orchard**

I was just wondering what you would recommend as a first step to a gradual conversion of an existing orchard to a permaculture oasis of perpetual abundance. I have pretty good access to resources, what I don’t have is a lot of time, in a situation like this what would you recommend. Would it be best to sheet mulch to snuff out most of the existing grass and other undesirables, fence it off and bring in some less destructive livestock to clear the under story out, just start building guilds incrementally with the hope of the new plantings gradually

out competing what is already there, or just start over with a completely new orchard area planned this way from the start.

Like I said I am short on time so I would like to optimize my labor to achieve the quickest conversion. This is currently my home orchard with 25 or so trees aged from 6 yrs to 1 yr (in the ground, planted from bareroot stock), but I would like to expand and move to production and as surplus is achieved. I'm open for suggestions beyond what I've listed, but it just seems a little overwhelming right now and I don't know where to start. Thanks.

Dave Redvalley

Dave I answer most of your questions in the film since I did a similar conversion. Time is your crucial element. Keep it simple and use animals to graze in a MIG fashion but forget about adding the diversity until you have time and can keep out some of the animals. Otherwise you can set up a small area of time manageable size to add the diversity and build your mother plant base so when ready you will have the material to plant out and mulch.

The big problem with a conventional orchard is the cultivars need codling with sprays. Sprays and animals don't coexist well. You can consider over-grafting to disease resistant cultivars. Tearing out 1/3 to 2/3s of the trees. adding in trios. Then diversifying the shrubs and ground layer. You have to decide what you want. A permaculture Orchard is all work on the front end to save lot's of work on the back end. Decide if that's what you want and if so go for it.

What's the biggest challenge of converting a conventional orchard into a permaculture orchard?

James Hershiser

Worth repeating: "The biggest challenge is getting over the fact that you will rip up most of it and start over. Better to start right than start over."

Quick question: I too have a conventional, monoculture orchard, much of it dead/dying. Plus we have a serious infestation of Russian olive trees everywhere as well. It has "overtaken" hundreds of trees. It seems everyone, starting with the local ag people from the state university to national experts all saying everything has to be "ripped out". This for us is a potential deal breaker, or "deal setter back another few years". Why does everything have to be ripped out? This would require a bulldozer or whatever and dump truck, crews of

people...tens of thousands probably. My plan, all I can afford, is cutting flush, then sheet mulching heavily over the stump, leaving the roots to rot. Is this not a good idea? I have 18 acres of a dead/dying orchard. In serious need of help and consultation!

Ted Journey

Ted you seem to have an IDEAL conversion situation. True most of your monoculture is dead and dying. That's great it just saves you time. Your 'infestation' of Russian olive is a Godsend. Nature's repair crew sent to do a job for FREE. How neat is that.

Here's a few simple steps:

- 1) Carefully examine your existing fruit trees. Select the ones that have withstood the no spray regimen the best (I'm assuming you have not been spraying). Flag or spray paint the ones you like most to identify them.
- 2) Do the same for your Godsend trees. Identify the ones that look the healthiest and that seem positioned where you would imagine a fruit tree should be.
- 3) Now you have 2 of the 3 elements of your future trios of trees (the basic building block of a Permaculture Orchard). Determine where the repeating pattern of trios works and where it does not (try to avoid 2 trees of the same species touching). Keep the flags or double paint the ones that ultimately fit your future trio design.
- 4) Remove all the rest of the trees. The ones in the rows, the weakest fruit trees and those not in the right place. Before removing the fruit trees consider the possibility of overgrafting them (saves you years of work and speeds harvest of new cultivars).
- 5) Yes you can cut flush and use the regrowth in a mow and blow fashion to mulch under the trees. If you are really stuck I can consult, (miraclefarms(at)videotron.ca). Only phone consults however.

Thank you so much for your reply. The creator of this orchard passed away in 2004 and every day since then my wife and I have been ruminating, stressing, obsessing (on my part) dreaming, fighting, wondering and asking about what direction to go. I have talked to lots of folks, read some books, visited some orchards and I have to tell you: Your words of encouragement and a simple permaculture plan brought tears to my eyes. Good tears. I can't express how much these words, combined with then watching The Man Who Planted Trees this morning, and aside from being a blubbering mess of emotions, I actually feel good about all of this for the first time in a long, long, long time. Thank you. I very much am

interested in a phone consultation, and will contact you offline. I really do feel like buying 12 copies of the DVD and just arbitrarily giving them to people, that may happen... Thanks to you, Paul, and Permies everywhere!

Ted Journey

Wow Ted a reply like that makes it all worth it for me. I THANK YOU. I have been in this so much and long that it's just second nature, not something I have to think about, I just react. Your situation was so OBVIOUS to ME. It's hard to comprehend that it could have created so much stress and grief. It was my PLEASURE to help with that burden. We can't all be good at everything. I'm just a man outstanding in his field. Thanks for making my day.

I am in the process of planning a commercial orchard planting on 10 acres. I'm modelling my orchard after miracle farms and mark shepherds farm. I'm looking forward to the movie coming out as it seems like there will be a lot of great information. I had a question about planting. When establishing an orchard without your own nursery stock, would you suggest planting already grafted trees, or buying rootstock and doing the grafting yourself? Planting rootstock would be a lot cheaper and possibly allow for a double density planting where I could thin the trees later and keep only the best trees. Planting rootstock would also allow me to have a greater selection of varieties to choose from as I'm a bit late in putting in my order and am not going to have trees custom grown for me.

Rodney

Hi Rodney, thanks for joining the discussion. You are correct about availability at this time of the year being low but it also applies to rootstock availability. Since it's most important to start put in what you can get and afford. Select the smallest grafted trees you can get (they are cheaper and suffer less transplant shock) and mulch them well upon planting. On the flip side put in bigger rootstock since you will graft in spring or late summer (budding). Interesting idea to double plant.

Hello Stefan, First of all thanks for everything you're doing. You mentioned Mollison's phases of abundance. He suggested you could start with 2-5 acres and work with 800 dollars (probably need to calibrate that to current value/currency) and 300 plants representing some 240 species and 70 or so varieties. Could you shed some light on how one goes about starting and what is needed to work with that amount of space (2-5 acres)? I've experienced a lot more heartache in this space and the results are much less inspiring on much less land (we have both a 1000 meters and 2.5 acres). We're trying to go with seeds and cuttings and

young nursery stock as much as we can but it is very difficult to grow the seed, propagate the cutting, or even find seed/nursery plants at a decent price. Thanks,  
William

William if I remember Mollison suggests you start in your zone 1 around the house. There you plant your first 300 plants. Yes it is in 1980 ish dollars. Probably closer to \$3,000 today. You don't bother with the rest of the area just focus your attention, energy and \$\$ on that initial zone 1 planting. Get those 300 plants going as they will be your mother plants to extend to all the rest. You will sacrifice yield productivity of these plants so they yield more plants (divisions, cuttings, scions, and in some cases seeds to plant out). You also evaluate how they perform. Easy enough with 300 plants close by not so easy for 30,000 plants on several acres.

Evaluate your resources every year: mulch material, propagation material, \$\$, energy, time. Be realistic about how much you can extend your area every year. It's always better to extend smaller than you can handle and have great success than to bite off more than you can chew and see disappointments all around. You NEED SUCCESS to fuel Your ENERGY. It seems like you took too big of a bite. Pull back and focus on your immediate area and do it really well.

You may find you really don't need most of your land and will be totally satisfied doing less on less area and getting great results. I realized while harvesting one day that one branch of a tree had a lot of fruit. We measured: so we got 1 bushel of apples (40 pounds) off one branch, and only 20 pounds off ALL THE OTHER branches. Pause to reflect. That led me down the path of learning to train trees from the French and French pruning techniques.

Result: it's not how many trees you have, but how much you get from the trees with a given amount of work that counts. I can't recommend enough, get the film, study it. Don't just watch it. There's a whole lot packed into 2 hours. Almost 20 years, so it's info dense. Take great care of your plants while they are young. We plant 500 shrubs in a relaxed morning with 2 people and get 80% survival. Total cost 8 man-hours and a bottle or 2 of rooting hormone. That's it. That one trick will save you THOUSANDS in plants!!! Get the film.

I have a number of old apple trees (perhaps 100 years old). Many of them are still producing fruit, (some massively) and I want to keep them. I am putting in permaculture forest in other places on the property. I would like to incorporate those old trees into this system. What

would you recommend to keep the existing trees healthy, and to transition them into a permaculture system. Thank You Kindly,  
Topher

100 year old trees were planted before the onslaught of chemical sprays. They chose disease resistant cultivars for the most part. KEEP THEM. Work around them with your new plantings. Use nitrogen fixing shrubs and vary the fruit trees species. For example if you have old apple trees add plum nearby NOT another apple tree. We detail the idea very well in the film and call it TRIOS. N-A-P (nitrogen fixer, apple, pear or plum) then repeat this pattern. You must change the DESIGN of the orchard.

I recently bought some land and am planning a forest garden. First, though, the large pine trees need to be removed (it was a pasture about 30 years ago...). Should I have the stumps just cut to the ground and plant around them, allowing them to slowly compost in place, or have the stumps removed? Thanks for the Q and A, Mr. Sobkowiak!  
Terri Simmons in NC

Terri don't make work for yourself. There is enough to do as is. Based on your question there are STILL pines standing. If pines plant blueberries!! If you will remove the trees leave the stumps, cut to the ground so you don't trip over them.

Hi Stefan and thanks so much for being here! I can't wait to see the film. I was completely enthralled with the YouTube video and want to model my permaculture orchard after yours. Unfortunately before we saw your video and before we took Geoff Lawton's online PDC, we put in a 275' long swale at the top of our 24 acre property and planted 14 fruit trees (apple, plum, pear, peach, quince, nectarine) in the berm which is a bit steep.

Following Michael Phillips' Holistic Orchard recommendations, we put about 2' – 3' of pea gravel around each tree and chipped 2" or less alder branches around the gravel extending another 3' or so. I cover cropped with crimson clover and an annual rye on the rest of the berm and planted out various sages and rosemary with the plan to add a whole lot more herbs, berries, etc.... Frost ended up killing most of the herbs (I planted them out too early) and the pasture grasses took over the berm. This is a property we are building everything from scratch and on weekends (we currently live 2+ hours away) and these trees are in our zone 3/bordering zone 2.

We've tried to be diligent, but have too much going on and are trying to figure out the best

way to mitigate the situation. It seems overwhelming at this point to get all of the pasture grasses/weeds out so we can plant the comfrey, herbs, berries, etc... We have been able to keep the pea gravel and wood mulched areas under control, this is the area between the trees. Right now we are just weed whacking the grasses down. Sheet mulching comes to mind, but it is a lot of ground to cover and a lot of material to haul up to the top of the hill, when we are really trying to focus our efforts on getting zone 1 under control, but if that is the best way we will do it. Needless to say, we see the err of our ways – we should have completely planted the berm out when it was bare, but any advice/recommendations on how to get this under control would be greatly appreciated!

Laurie Branson

Laurie, relax it's all part of the learning curve. Remember it's an uphill curve not an easy downhill slope where you just glide and enjoy the view. Your original planting is working and you did well with Michael's advice. The swale will be a benefit over time and as you learned timing is crucial. It looks so easy in Geoff's videos, just remember they have no frost but have their own challenges. As I mentioned in another post about Mollison's phases of abundance. Focus on your zone 1 it may end up being all you need. Are you doing that swale area for commercial production or just your own need? I suggest 150' of well planted Permaculture Orchard will supply all of your own need. The rest is for other uses.

Getting the berm under control? You can use Martin Crawford's technique of plastic or carpet for a time right onto grass, kills the grass, remove and fully plant. Then move the plastic or carpet to the next area. Geoff shows a similar technique with his chickens. We did the same one acre at a time with plastic but leave it on for good. None of the 3 examples tilled the soil to stir up the seed bank. Just suppress the grass and FULLY PLANT. Don't take on more area than you have good strong plants to fill.

The most common mistake is to think we NEED to get in there and do the WHOLE area at once. Take it on like an elephant project. How do you eat an elephant? One bite at a time. Same for each project. One bite (piece) at a time. Build on your successes otherwise you get discouraged seeing ALL the failures. Great start. Regroup and take on less one bite at a time.

The entire 2-acre lot is wooded; the pines are about 70-80' tall and shade the south-east corner. The other sides slope significantly and have more of a hardwood forest, which I had planned to leave intact except for a few shrubs here and there. I was thinking about growing

several fruit trees in addition to berries where the pines are now; what else could grow underneath them?

Terri Simmons

Terri save yourself a lot of work changing the soil conditions for fruit trees from pines. Plant your fruit trees on the slope where the hardwoods are. It's closer to the conditions the fruit trees like. You only need to go the trees a few times a year anyway. Realize that where there are pines there should be pine needles. This mulch will be home to some of the best mushrooms as well.

This is my first post in the forum. Thanks Stephan for coming on and answering questions! We are at the very beginning of our forest gardening planning/planting, we are in zone 6a. I was just wondering if you have any "if I knew then what I knew now" advice? Maybe your top 3 recommendations for starting a food forest or larger scale permaculture orchard. (I bet you've got some very happy bees too). Cheers!

Donna Mays

Hmmm Donna 'if I knew then what I knew now' have you got 2 hours?? Actually the film is full of them. I made most every kind of mistake you can imagine. I'm actually running out of possible mistakes since I've covered most of them. May I suggest the film, it will honestly save you years of trial and error, mostly error. Biggest costly one I ripped out my old orchard then discovered overgrafting (explain it well in the film). Don't rip them ALL out.

Stefan – Really looking forward to seeing the video! I'm working on setting up an urban farm along a new bike trail that the city is working on. Hoping to include a permaculture orchard with the project. Any advice off the top of your head would be a great help.

1 – Some of the sites we may get access to are definitely old industrial (brownfield). I've read that fruit crops are the least likely to transfer contamination to the crop. Any thoughts on using these fields for some orcharding? I'm probably more comfortable with leaving these sites alone or doing some sort of native restoration project on them. The web soil survey on them shows that it's good soil (minus the god-knows-what contamination).

2 – In the past, I helped to start up an orchard at an organic farm. Not permaculture by any means. The cost of the trees from a nursery + supplies was an eye opener! I've taken some grafting classes, and know that rootstock can be gotten for cheap/free. Starting up from

scratch, would you recommend starting your own trees + grafting, or just paying a bit more up front for trees from a nursery? I'm guessing a bit of both. Trying to keep costs down where I can.

3 – Fruit quality – Do you have an acceptable level of insect/disease damage that you and your customers can agree on? Or do you mostly sell dessert quality, no damage fruit? just curious. Thanks a ton for your time!

Joe Skeletor

Great questions Joe, bike paths are the BEST URBAN ORCHARD SITES. People are going slowly, can stop and pick. I dream of the day that my city, Montreal, will have 100km (60 miles) of permaculture orchard bike paths. Imagine the productivity!!!

1- RE contamination and transfer I know little. But I understand the power of FUNGUS. These FUN GUYS !!! want to work. Highly recommend 'Mycelium Running' by Paul Stamets. Great, great Book. They are known to breakdown the nastiest chemicals. Wood chip mulch, which cities produce a lot of can be used extensively under the fruit trees as mulch would solve, bind, breakdown a lot of the contamination.

2- yes trees are costly but so is gas! The best time to plant a fruit tree is 20 years ago. Yes we grew all our trees. An intern started our nursery of 6,000 fruit trees on a 50-50 basis. Left to start his own orchard and had 3,000 trees valued at \$70,000 to start. Not bad. In the film I show you how we graft now. Tons of good youtube videos on it.

3- Quality we aim for 50% nice fruit and get it. Not nice can be insect, misshaped or disease damage. All good for juice anyway. We guarantee some bug juice in our juice and people love it! My customers are less picky than I am. Think of it where can you get NO Pesticide on fruit?? Not even copper or sulphur (organic sprays). We use whey from cheese making to spray. We can eat it.

## **Business questions**

I am an accountant by training and one of the hardest things about permaculture is getting financial revenue numbers from existing permaculture farms. Could you help us out by sharing a range of revenue by acre that you have experienced? That would be a huge help to

those of us trying to write business plans, etc or trying to make informed decisions on when to get away from our professional careers.

Nathan Pickard

Thanks Nathan for the question. We are working on a comprehensive spreadsheet with a few agro-economists to do exactly that. Customizable so you can plug in our own variables and give you a great idea for projecting your future revenue. We expect to have the project finished by the end of the summer. Stay tuned, if you would be interested in it send me an email with: 'Permaculture Orchard Spreadsheet' in the subject to: miraclefarms(at)videotron.ca I'll notify you when it's ready at the end of summer.

Our target revenue from the Permaculture Orchard is \$1 per square foot. Where we have fully planted and the plants are mature and graze animals we can reach that. We do not yet achieve that over the whole of the orchard since we still have plantings to add. Caveat we sell all direct, no middle man but we are far from a major city (1 hour to Montreal). If you are 10-20 minutes from a town with a McDonalds I envy you since it is so much easier, you already have your customer base nearby. Read Booker T. Whatley's great book on the subject of marketing your farm products.

Can you answer these questions?

- 1 What's best for rows: N-S or E-W orientation?
- 2 How do you practically (commercially) organize the orchard for selling? What do you mean with members? Do they pay a fixed price per month, year? Or do they pay a fixed price per kilo...
- 3 If you start from scratch, what's the best way to earn some money (survive) the first few years before there's any fruit yield? Is raising chickens (eggs) a good option, besides some vegetables?
- 4 What amount of fruit and vegetables is realistic to expect after 2 years? And after 5-6 years.

Robin

Robin we have both although not exactly N-S or E-W. Both appear to have some advantages and disadvantages. Go with N-S if you want to grow more sun loving plants along the row but not directly under the trees. Use E-W if you want to grow more shade tolerant plants since this orientation creates one side of the trees that is more in the shade (N side of trees).

2. Members pay an annual membership fee of \$55 which entitles them to come pick at all our open days, come for a day in the country (no need to buy anything just enjoy the orchard), they can attend the tours for Free (\$25 FEE to non members), we usually have an overstock item available for Free, allows them to order our meats and we include 20 pounds of tree fruit Free in the membership. Non members cannot pick any fruit or buy meat they may be able to buy from our small roadside stand at 2x the u-pick price when we have extra produce. Membership has it's privileges but it's a great deal if you use it fully.

3. Surviving the first years. No. You CAN THRIVE the first years if you set up a CSA meat and vegetable operation the first year. Use the space under the trees to grow the easiest veggies you ever grew and the rows to raise animals in mobile pens. Both can be regarded as annual crops and will return a profit in the first year IF your marketing is cranking right from the start. Certainly a team effort but can be done with a team of 2 and a great work ethic.

4. Fruit after 2 year: only strawberries and some raspberries, no tree fruit. After 5-6 years you should be getting your first commercial crops depending on the rootstock you use (longer with standard trees, 7-8 years). Vegetables can be a full crop in the first year, especially if you had a sod and use a mulch. The sod will provide a good fertility for the first year.

I am looking for resources for and direction for starting my Home Nursery for a Permaculture Orchard as recommend by Stefan Sobkowiak on PERMACULTURE VOICES PODCAST 021: THE PERMACULTURE ORCHARD. <http://goo.gl/JSGwx4>

In the interview Stefan talked about the 10 ft. by 10 ft. Nursery for starting trees and recommended 4 in pots, that works out to be around 900 tree starts! In general what kind of container should I be looking for? How Deep? Any soil mix recommendations? Can you offer some guidance as to the process for a Home Nursery, what steps to take day to day, month to month, year to year. As an adult I was reintroduced to gardening with The Square Foot Gardening Method. <http://squarefootgardening.org/> I really benefited from the way the method was laid out. With step by step instructions on how to get started. I have never plated a tree from seed and need some general How To on the subject. On the specifics of each plant I can find reference different places on the web as needed. Plants I am looking to propagate are:

I have an abundance of Black Locust and Honey Locust seed.

<http://tcpermaculture.com/site/2013/11/18/permaculture-plants-black-locust/>  
<http://tcpermaculture.com/site/2013/08/01/permaculture-plants-honey-locust/>

I also have access to lots of wild Raspberries, Gooseberries and Mulberry.

<http://tcpermaculture.blogspot.com/2011/07/permaculture-plants-gooseberries.html>

<http://tcpermaculture.blogspot.com/2011/12/permaculture-plants-mulberry.html>

I will be receiving Siberian peashrub and Russian Comfrey (Bocking 14 sterile)

<http://tcpermaculture.com/site/2013/05/13/permaculture-plants-pea-trees/>

<http://tcpermaculture.blogspot.com/2012/03/permaculture-plants-comfrey.html>

Ben

Hi Ben, in response to your questions I know there is a need for such information. It would make a great follow up to the permaculture orchard film. I've done pretty well all the steps and types of propagations for nursery production so it would be easy to do the DVD. First don't use raspberry or gooseberry seeds they will give far inferior quality of fruit to what is available.

Get raspberry roots from someone who has a great quality of fruit or just buy 3 or 4 plants, well worth it. Gooseberry are easy to root from cuttings so get some cuttings of great gooseberries (not wild ones) or just buy a few, also well worth it to get superior types (Ben series from Scotland are excellent). Mulberry ok from seed but there is also superior selections out there and mulberry is easy to root from a cutting or to propagate with a graft.

Black locust, honey locust and Siberian peashrub are easy to grow from seed. Direct in the soil or in pots. Use rootmaker pots as they are the best to maximize the roots and will eliminate girdling of roots ([www.rootmaker.com](http://www.rootmaker.com)). The depth of pots depends on how long you intend to keep them in pots. Look at the info on their site. A good promix soil should work well enough. You can add 1/2" of compost on top after the young plants get up 3-4 inches. Russian comfrey will have to be divided in spring or fall since bocking is sterile (seeds are not viable). Try to divide before the leaves get to be more than a couple of inches, they break off easily at this stage so be careful, but it is easier to tell where there are some 'eyes' at this stage. One 'eye' per root will work, just split up the clump into individual carrots and you will have lots of plants.

Stefan, I'm thinking about the business of running a profitable orchard as much as the actual growing.

Patrick Mann

1) Running an already insanely great designed Permaculture Orchard. Anything else but a redesigned orchard keep away from since it will be a ton of work. Any retail sales experience is great (oh yes I worked retail as well). Since you will have to think like retail in sales per ft<sup>2</sup>. Know yourself. Do YOU really like the sales aspect, the growing aspect, the design aspect? Maybe you would do best to partner with someone who is passionate about the parts you are not.

2) Establishing such an orchard (design and implementation phase). Maybe get someone who loves to design for this phase. Implementation: you better like planting. We are working on a system to establish such an orchard at the rate of 1/2 to 1 acre acre per day. That would be a huge breakthrough needed to really take it commercial. I've done the R&D to show it works. Now to get it to scale and deploy rapidly.

3) Skills: you have to love working with people (unless you will do this for your own food only). Holistic, systems wide thinking is a great asset. Ecology was one of the most useful subjects in school it gave me a broad outlook. Design (you can farm this part out).

4) Operations: You can get someone who loves the day to day operations of such a system - and if you find someone send that person my way!

5) Implementation: Be able to follow a plan and please see the film before you embark on such a journey, it really will save you 10 years at least of trial and error and \$1,000's of dollars. Don't reinvent the wheel. Take what I've learned and build on it. There is still so much room for improvement but start there, please.

Do you process your own juices on site? If this is already discussed in the movie, I can just wait to find out.

Joe Skeletor

No I get it custom pressed on a high volume press (3-4 bins per hour). Well worth it in time savings and juice quality.

Hi Stefan, You mentioned that part (or all?) of your orchard is U-pick. Do you have any challenges with this model? The ones I'm thinking of are things like: – people are not familiar with picking, and pick off lots of spurs accidentally, harming next year's crop – kids eat excessively while picking, lowering the amount of fruit that's paid for – other kinds of random abuse to trees from (for instance) school groups coming through – walking all over herbaceous crops, not realizing they are crops As I write this, I realize that all of these could be tackled with education to the customers. Is this what you suggest? Anything else?  
Rob Read

Rob your last sentence summarizes it all. EDUCATION. That's why I LOVE Whatley's formula of a membership club. You can limit the number of people, invest the time to educate them, get to know them, 'weed' out the ones who don't get with the program. I don't want a customer for a season, I want their life span, their kids life span and their grandkids lifespan. I want customers for life, and more and more I get very faithful members. You will get some damage but realistically you will damage some yourself when you pick, especially in a hurry.

Kids will be kids, we constrain them too much, let them enjoy the farm experience. We walk on crops sometimes to. In the end this format suits me just fine.

Stefan, in a different thread you mentioned you use a mechanized mower between your rows. What other machinery do you use? And up to what scale do you think that it makes sense to work with hand-tools only?

Patrick Mann

Machinery: 20hp Sears lawn tractor mower for most all work (mow, pull trailer), chainsaw for pruning and mostly now a stihl pole chain saw since it's so much safer than a regular chainsaw (pole allows a much higher reach, so not much ladder use, which is much safer, plus I'm a Pole in origin so I have an affinity for Poles). Sometimes I borrow and use a 2 wheeled tractor with sickle bar mower to mow, since it's more bird nest friendly and frog friendly (I'm always concerned for those ally friends that do most of the work). That's it.

We have a small farm just 12 acres total. Most people are FAR OVER EQUIPPED. Thinking that since they have a farm they NEED a tractor and a pickup and maybe a second tractor and a .... Realize what you need to do, RENT EVERYTHING you need the first time so you can see if you will REALLY NEED it. If a tool is used for less than

a week a year don't buy it, rent it. That's my take on tools and machinery, in fact none of this machinery is mine I borrow it all from Frank who rents a piece from me for vegetables. More machinery means more repairs and maintenance.

## About Stefan and the Farm

Stefan, I'm curious about your background and how well it equipped you for becoming a permaculture orchardist. Did you simply learn by doing? Or are there skills it would make sense to acquire in a more deliberate fashion? I'm thinking about the business of running a profitable orchard as much as the actual growing.

Patrick Mann

Patrick you're a keener I keep coming across your name. Good for you. Yes I learned by doing with a great background to complement what I was and still am learning. I'm a wildlife biologist by training (my penchant for the 'allies' in the orchard), furthered by a Masters in wildlife on animal behaviour. Then a Masters in Landscape Architecture where I learned design. 20 years running a landscape design office that phased out as I phased in the farm.

Finally I had to decide since Design and Farming have their peaks of activity in the spring, I decided to close the design office to focus on the farm and begin the Permaculture Orchard. I was a near total newbie respecting orchards when we bought a 4,000 tree conventional apple orchard.

Began conversion to organic immediately, lost 1,000 trees first 2 years (ouch!!), learned a WHOLE LOT. Certified Organic for 4 or 5 years. Now just beyond Organic with the Permaculture Orchard. Lot's of teaching (8 years teaching at McGill University), training (PDC's and parts of PDC's since 1995) and speaking (over 400 presentations). You can see the links to most of these at: [www.miracle.farm](http://www.miracle.farm)

Hi Stefan, I'm really curious about the impact you've had on others since going into permaculture. How many other people have you affected since you started getting into it? Not only the people who eat your food but just wondering the impact you've had on others starting to grow something, other farmers, etc. I'd love to hear some of the stories. I think once the film is released you'll have a much greater impact so wanted to ask you now before

that happened. i guess I'm also asking because I have some theories on tipping points and so wanted to see how much feedback you've had in the past years and the changes in others you've noticed because of what you are doing.

Sheri

Sheri I stopped trying to keep track. Members and customers over the years maybe a thousand. Interns over the years about a dozen, PDC students a couple hundred, 3 day forest garden graduates maybe 40 and climbing fast, University students a few hundred (I taught at McGill U. for 8 years) talks thousands, podcasts, interviews, radio, TV (just one tv program gave them over 600 shares in a day!), the little 9 minute video has been viewed by over 100,000 already since November, the film by how many??. My goal for the film and orchard is 1,000 hectares of Permaculture Orchards by 1,000 people in 50 countries.

I would love to say everyone was impacted equally but it's certainly not the case. Everyone is at a different stage in their knowledge and interest in permaculture. I enjoy helping a mix of people at all the levels from 1st exposure to permaculture to those who are really diving in deep. Your tipping point theory is correct. I believe we are at or just before the tipping point for Permaculture. We have seen some huge increase in interest in the last 6 months. Our PDC+([www.pdcplus.org](http://www.pdcplus.org)) was full (50 participants) before we even announced it beyond one brief mention.

What amazes me most is the age groups, there is a huge interest from people fleeing their Dilbert cubicles looking for something real in their life. Some will be disillusioned by the hard work but many will bring fresh energy and perspectives to make all the systems more resilient. It's all good. Would love to discuss your tipping point theory and observations more, perhaps add a tipping point chapter in my book.

Hi, I just saw your video about creating a Perma-Orchard! Thank you for what you are doing and for sharing it in this inspiring video. How far from Montreal are you? Thanks

Trisha

Les Fermes Miracle Farms One hour southwest of Montreal in Cazaville Quebec.

I am in Maine but I have friends in Montreal so perhaps when I visit them in the spring I could visit your perm-orchard?

Les Fermes Miracle Farms Tours are first Saturday of every month starting in May

Thank you, that gives a time frame to plan a visit. thanks! What will be the hours or the tour?

Les Fermes Miracle Farms Starts at 10am and 2pm. One in English and one in French. Best send me an email and I'll add you to the farm tour list to keep you posted: [miraclefarms@videotron.ca](mailto:miraclefarms@videotron.ca)

Do you only allow a certain number of people per tour? (Stefan offers tours of his orchard to the public on weekend.)

Lianne Stevenson

30 to 40 people at a time.

Thank you for adding me Stefan! Watching the videos for your farm has made me feel nostalgic. My wife and I share a mutual dream of having a permaculture orchard. We've both had that dream for years! Do you by chance offer any courses? nous pouvons parler en français aussi

Joe Nelson

Yes I do. Here's my updated Facebook post of Nov 28 (2013) for ways I can help you gain information.

Dreams do come true when you decide to walk in them.

Since the video November 2013 (100K+ views) and the Film in June 2014, I have been deluged with REQUESTS for Information. So I've summarized HOW I CAN HELP YOU learn more:

1) You can take a look at all my Facebook posts and photo albums.

[www.facebook.com/lesfermes.farms](http://www.facebook.com/lesfermes.farms) There is a lot of great information there of what we have done at the farm to give you ideas.

2) You can WATCH the original video of the farm (9:06 minutes on YouTube [http://www.youtube.com/watch?v=3riW\\_yiCN5E](http://www.youtube.com/watch?v=3riW_yiCN5E) or on Vimeo: <http://vimeo.com/78527630> or see all the videos on my playlist: <http://goo.gl/psvjsE>

3) You can LOOK through my picasa PHOTO ALBUMS: <http://picasaweb.google.com/LesFermesMiracle>

- 4) You can attend one of my TALKS, here's the schedule and topics (English and French) <http://sites.google.com/site/dorrose/upcomingtalks>
- 5) You can BOOK A talk on one of the 20 topics I speak on <http://sites.google.com/site/dorrose/home>
- 6) You can come for a TOUR in 2015, \$25 per person. First Saturday of the month TOUR LINK and tour outline. <http://miracle.farm/en/tours>
- 7) You can ORGANIZE A TOUR for a group (minimum 20 people, \$25 per person) and you and a friend get the tour FREE. Contact me for reservations: [info@miracle.farm](mailto:info@miracle.farm)
- 8) You can attend a WORKSHOP at the farm where you will Learn AND Practice a technique. Topics in the past have included: pruning fruit trees and fruit shrubs, grafting, training fruit trees, tree and shrub propagation, nest box building. Topics for 2015 would include: pruning fruit trees and fruit shrubs (April), grafting (May), beginning your own nursery and plant propagation (May), creating hugelkultur beds (June), training your fruit trees (July) as well as others as the need arises.
- 9) You can attend a 2 day course on "creating a Forest Garden" or "creating a Permaculture Orchard" . Dates and locations for 2015 include New Zealand ( <http://beyondorganicnztour.com> ), France ( [http://www.conservatoirevegetal.com/liste\\_stages.php?type\\_produit=2](http://www.conservatoirevegetal.com/liste_stages.php?type_produit=2)), Switzerland and at the farm in Cazaville, Quebec. (examples for Québec city 2013 Public Google Groups: <http://www.facebook.com/groups/coursforetnourriciereQc/> and Baie de Chaleurs, Qc 2013: <http://www.facebook.com/groups/646650222028401/>, Portneuf, Qc 2014 and Nicolet Qc 2014: <https://www.facebook.com/groups/589771857805520/?fref=ts> scroll down to the beginning since these groups were started for the courses.
- 10) You can organize a 3 day course on "creating a Forest Garden" (minimum 20 people) and you get the course FREE.
- 11) You can get our documentary film DVD "The Permaculture Orchard: Beyond Organic". [www.Permacultureorchard.com](http://www.Permacultureorchard.com) please SIGN UP for updates and LIKE our Facebook page: <http://www.facebook.com/permacultureorchard>.

12) You can join the farm as a member: [www.miracle.farm/en/membership](http://www.miracle.farm/en/membership).

13) You can be one of the select few who become INTERNS AT THE FARM. Check out our intern page on the website <http://miracle.farm/en/stages>.

14) We can TALK to CONSULT on the phone or via FaceTime (apple products), google hangout or Skype, \$300 per hour 1 hour minimum FIRST 15 minutes FREE, if you decide I can't save you money and help as you imagined we're still friends and you owe me nothing). You can take the phone to different parts of the site or record video and comments and send them then we can discuss them over the phone.

15) You can invite me for CONSULTING with a goPro video report file at the conclusion as we walk and discuss your sites possibilities @ \$300 per hour, 4 hours minimum (including travel time) within 2 hours of Montreal (Canada and US) or 8 hour minimum beyond that range plus I require a 30 minute to 1 hour discussion of your needs and wants FIRST so we are both best prepared for consulting time (at \$300 per hour FIRST 15 minutes FREE, if you decide I can't save you money and help as you imagined we're still friends and you owe me nothing). Canadian and International consulting (beyond 2 hours from Montreal) 1 day minimum on site plus travel and lodging (if needed) expenses. Plus I require a 15 minute to 1 hour (at \$300 per hour, FIRST 15 minutes FREE, if you decide I can't save you money and help as you imagined we're still friends and you owe me nothing) discussion of your needs and wants first so we are both best prepared for consulting time.

16) You can have a PERMACULTURE DESIGN PLAN or Model of your site. Such a plan or model requires that we first talk over the phone or FaceTime for a 30 minute to 1 hour discussion of your needs and wants so we are both best prepared for the first consulting visit (at \$300 per hour FIRST 15 minutes FREE, if you decide I can't save you money and help as you imagined we're still friends and you owe me nothing). Then there are several steps in the process with back and forth feedback at each stage:

- 1) elaborate the program: written goals and objectives for the site
- 2) First site visit and consulting during which I will complete an inventory and analysis of the site as needed to attain step 1, or return for added details as needed to attain step 1.
- 3) I will complete and present to you a series of at least
- 3) concept plans or concept models of the site identifying where every major land use will be. We will examine together which most suits your needs and wants and I will then combine the best concepts and ideas and complete a final Master Plan or

Master Model. For some clients this is the end of the process as they will complete the final details themselves (planting plan, plant choice, construction details...). Budget a minimum of at least \$5000 for a master plan or Master Model.

For those who want all the details elaborated, the next step is the elaboration of a Planting Plan along with a detailed list of all the plants needed and their quantities and any construction details, landworks details, irrigation details, lighting details. Budget a minimum of at least \$9000 for this stage depending on the level of detail needed.

I can then provide site supervision for implementing the different plans.

I must let you know I have always learned and gained experience at the clients expense. There have been mistakes, there have been adjustments. It's been a learning process. 20 years of operating a landscape design office has taught me a lot. 20 years of owning and operating a farm has taught me a lot. 20 years of giving presentations and courses and teaching at the University level has taught me a lot. I am always looking to push the envelope, to try something new. I have always aimed to save my clients at least the amount of my fees, in the majority of cases I have succeeded.

It's up to you.

Just a few options. You need to start by knowing what you want and need. Then dream big.

Stefan Sobkowiak, 514-830-9640, email: (farm) [miraclefarms@videotron.ca](mailto:miraclefarms@videotron.ca), (for talks and courses) [stefan1@videotron.ca](mailto:stefan1@videotron.ca)

Hello, I'm writing to see if Les Fermes Miracle accepts intern applicants from outside Canada? I'm 25 years old from southern New Hampshire and an aspiring permaculture farmer and food forest designer/installer. I've helped out locally at Phoenix Hill Farm, a permaculture pork farm in Boscawen, NH, completed my PDC with Ben Falk this past September, and took a workshop with Eric Toensmier in October at his "Paradise Lot" in Holyoke, MA. I'm also an aspiring timber framer having completed several workshops and also recently took a cob oven construction workshop. Although my spoken French is poor, I do understand a little because I grew up around the language as both my parents hail from Quebec.

I first heard about Miracle Farms when I met Stefan Sobkowiak at the permaculture convergence in Quebec this past July. I was enthralled with his presentation and his work at Les Fermes and had a brief chat with him afterward. Of all the facets of permaculture I believe perennial poly-culture tree systems will be the most important, highly productive, and resilient systems in an uncertain future. I'd love to be a part of the team at Les Fermes for a season! When do you typically have interns start? Thanks,  
Luke Vaillancourt

Hi Luke, I remember speaking to you at the convergence. I would enjoy reviewing your cv. Please send it to : info@miraclefarms. I see no problem with you interning in Canada. I do not know the regulations but at most you would need some category of Visa. If I don't keep in touch please contact me in a month to remind me. As for when to start, it depends on you but April , May are ideal as it's the period with the most time sensitive work Thank you for inquiring.  
Stefan

You are probably inundated with emails and calls but I have to give it a try. First I want to thank you for the great video and the inspiration. I have 3 acres I just cleared and would love to do something similar. I live in the Pacific Northwest (Washington State)...the wet side of the state. Trying to figure out what I should plant for my area and a better idea of how. Would I be able to call and speak to you or do you have another suggestion. I understand if you can't due to available time.  
C.G.

Got Mac products? Face time call would be simplest. You could walk around the property and point out things. I can ask for clarifications. Aim for 1 hour just to get an idea and what other info you will have to dig up. \$300 per hour no travel charge. One of the best investments you've made on your land. I guarantee I will save you that and more easy. If not no charge. Sounds good? Let me get back next week with a time slot. Stefan

I LOVE what you are doing with your orchard at Miracle Farms! My partner, Catherine, and I are aiming toward doing something similar to what you are doing. We live in Ontario and are currently looking for a nice piece of land to make the transition from city to country. We've been reading various books (Mark Shepard's Restoration Agriculture, Ben Falk's The Resilient Farm and Homestead, and of course classics from Bill Mollison, Toby Hemenway,

Sepp Holtzer, and others. The video posted on Vimeo and YouTube about your project is impressive and very inspirational for us. If you have time to answer a couple questions, I'd be very grateful: what hardiness zone is your farm? do you have any reading/watching recommendations that you think might further assist us? In other words, what material/information has informed and inspired you?

Hi John, Ag. Canada zone 5b Books: Sir Albert Howard's soil and health, tree crops J. Russel Smith, Hamaker & Weaver 'survival of civilization', 'Farmers of 40 centuries', are a great start to the basics and classics. Most can be downloaded free at soil and health Library [www.soilandhealth.org](http://www.soilandhealth.org) Good reading. Stefan.

PS consider renting with a 25 year lease with an option to buy. Far better than sinking all your life's savings into a place.

# Profiles

## About Stefan Sobkowiak

Miracle Farms is the largest and most developed example of a commercial Permaculture Orchard in Eastern North America. Through Miracle Farms Stefan's goal is to restore the Wow factor to foods. His personal mission is to help, 1000 people, 1000 hectares, in 50 countries, adopt the Permaculture Orchard model of fruit growing. The 3 cornerstones of it's mission are: production, education and research and development. It is used as a continuing education lab for students of the permaculture courses, for workshops (grafting, pruning, nursery propagation, raising small fowl, processing fowl) as well as a premier training site for Interns. Farm tours take place on the first Saturday of every month from May to October and are also available for groups.



[www.miracle.farm/tour](http://www.miracle.farm/tour)

Production from the farm is sold to over 100 member families through a Members only U-Pick system. Research is ongoing and has already resulted in The Permaculture Orchard as a model of commercial fruit growing using a multi-species orchard.

Stefan has been TEACHING PERMACULTURE in Quebec since the beginning in 1997 in collaboration with the RHA, Grégoire Lamoureux (Kootenay Permaculture Institute) and Bernard Alonso (Permaculture Internationale). More recently with [www.PDCPLUS.org](http://www.PDCPLUS.org).

His teaching experience also includes courses at McGill University: fruit production, landscape plants and design, and natural history of vertebrates and over 400 presentations as a professional speaker for 25 years. Owner/Operator of a landscape design office for 20 years to develop 100's of projects for private, institutional and municipal clients. A Biologist and Landscape Architect by training, permaculture has been a natural progression of his training. It's also the solution to most of the modern world's problems. Follow this projects progress on Facebook (Les Fermes Miracle Farms).

## About Olivier Asselin

Olivier grew up in Eastern Quebec, Canada, where he studied and worked in the IT field before dedicating himself to photography. He graduated in 2004 from the Western Academy of Photography in Victoria, British Columbia.

Olivier has worked on assignment for humanitarian organizations and media clients in over 25 countries throughout Africa, Asia and the Americas. He is fluent in English, French and Spanish and has a working knowledge of Portuguese. He is available for assignments worldwide. His first book *Nwentoma : Visual notes from West Africa*, was published in 2007.

In 2013, he setup to creating [possible.org](http://possible.org), a documentary project about telling the stories of individuals and communities who are actively engaged in creating a better, more sustainable future.

Through this project, he set up to travel around Canada and the Eastern U.S. and make short films about different projects. Through a successful Kickstarter project, he got the funding to make a full length movie on Miracle Farms, which came out in June 2014 entitled "The Permaculture Orchard: Beyond Organic".

If you would like to watch more videos about the farm or Stefan check out his YouTube channel's playlist: <http://goo.gl/psvjsE>

One video of the farm featured on a Canadian TV show, watch this one. Make sure to set "captions" to "on": <http://goo.gl/WamwrV>



## About Hugo Deslippe

The 5 elements farm is a family owned operation. The head honcho, Hugo, lived in Japan from 2007 to 2015, where he met his wife Mika and her daughter, Sasha. Together, they decided to move back to Canada and take over Hugo's parents' land that had been unused for over 40 years.

The farm is situated in Saint-Philippe de Laprairie, in the Monteregie area of Quebec. (about 40 minutes from Miracle farms) It is very nicely situated at about 30 minutes from downtown Montreal and 10 minutes away from all the dormitory towns of the South Shore of Montreal.



It is on a parcel of the bigger land that was in the family for at least 4 generations. Hugo has always been interested in Asian culture, philosophy and medicine. In the past few years, he also discovered permaculture and while studying it, he realized that working with nature to produce food in a natural, sustainable way is a little like alchemy. We work with the elements to produce our food.

The 5 elements, in traditional Chinese philosophy are:

**Earth:** The soil we live on, that produces our food and is full of micro-organisms supporting our life. This is the most important element for us because without a healthy, living soil, the fertility of our land would not be what it is now.

**Water** is the lifeblood of our operation. We try to keep as much of it on our land as possible before it leaves. We might reuse it in many different ways to help fertility.

**Fire:** The sun. Our climate is not what we can call clement. Winters are harsh. We will do some work to try to harvest as much solar energy as possible to be able to use it in winter. This is done on many levels but here are a few ideas we have: Solar power accumulated in batteries, solar inertia for buildings, passive solar for buildings, forage for winter.

**Wood:** The plant life is used in many different ways in permaculture. There is no weed, all plants have a function and the challenge is not getting rid of them but figuring out what is the

function and how to best utilize it. Plants can provide: food, forage, mulch, heat, shade, wind break.

Metal: The tools we use are made of metal. This is the element that man uses to try to make nature do what we want. We try to use as few tools as possible because we are both lazy and clever. We don't want to do unnecessary work when possible and we want to disturb nature as little as possible. For this reason, we use what is called appropriate technology to make our task easier.

To join him, the farm is situated at 13 A St-Gregoire, St-Philippe, Quebec, J0L 2K0 Quebec. You can also try [ferme5elements@gmail.com](mailto:ferme5elements@gmail.com)

## About James Samuel

2007 kicked off a career in building resilient community by spending the next two years facilitating the growth of Transition Towns in New Zealand. Following that I co-founded [ooooby.org](http://ooooby.org), a social enterprise food distribution model with Pete Russell, then put a stake in the ground for Food Forest NZ.

In 2015 I coordinated a 4 week Beyond Organic NZ Tour with Stefan Sobkowiak.

[www.beyondorganicnztour.com](http://www.beyondorganicnztour.com)

[www.about.me/jmsinnz](http://www.about.me/jmsinnz)

