The Prime Goal of Permaculture

HOW TO USE PERMACULTURE ON AN ACTUAL WORKING COMMERCIAL FARM

Extracted from the writings of Bryant Redhawk at the permies.com forums.

Chapter 1 – Commercial Farm with Permaculture

The great proponent of Permaculture, Bill Mollison, stated in his treatise "***The aim to create systems that are ecologically sound and Economically Viable***" as the ***prime goal*** of Permaculture.

Many people have taken this to mean that we should only be looking to feed ourselves and so have created what are defined by (Webster, Funk & Wagnalls and even the Oxford) dictionaries as "**Hobby Farm**".

Almost no where do you find a group of people discussing or promoting the use of Permaculture, which is a term that is short for Permanent Agriculture, as a method for **providing food for the masses**.

Yet this is exactly what Mr Mollison was referring to with his definition (above). **Economically Viable** means profitable income from an ecologically sound system of agriculture.

Yet, it is very difficult to find any writings, courses, or other method of teaching permaculture that actually addresses this prime goal.

The main focus I've seen (everywhere I've looked) of people practicing "permaculture" seems to be within the definition of "Hobby Farm".

Just a few have adapted some of the principles into a real, production oriented, commercial farming situation, Joel Salatin style. (Also Mike Sheppard, Michael Phillips and Sepp Holzer)

It is my goal to give some real life help along the lines of how to use permaculture on an actual working commercial farm.

In all the years I've been working in the agricultural field I have never been identified as a permaculturist.

Instead, colleagues have referred to me as either a restorative soil scientist or an ecological soil scientist.

I am currently a member of the Centre for Ecolonomic Excellence & Development's Ecolonomic Action Team, a group that is working to promote using ecologically sound methods to make the planet better and make a little money at the same time.

I state this as a sort of introduction about my agricultural background as well as my knowledge baseline.

Since 2012 I have been working to build my own farm.

The goals were originally to build a “hobby farm” defined as a farm that concentrates on feeding just the farm family or feeding the farm family with a little extra to sell at a farmer's market to off-set some of the expenses of the hobby farm.

This goal was set because I was planning to retire at age 66 and the farm was to keep me occupied so death by boredom would not occur to me or my spouse.

Events tend to change our objectives (adaptation is a tool of Mother Nature), since this is the way of life, and these happened to us this year in a big way.

Now we are re-evaluating our prime goals for Buzzard's Roost Farm, which initially was going to be a nice hobby farm where we raised most of our own food along with American Guinea Hogs for both meat for us and animals to sell.

Our grand plan has changed (drastically) as a result of the events that have happened to us this year.

Our current situation has prompted changing from our original goal to a commercial farm goal.

We are currently trying to decide if we are even going to keep the hog operation going.

Since it would take much more acreage than we have to make it a viable commercial operation, it is likely that should we keep any of our current hogs, it would be cut to one boar and one sow, with babies either being sold at twelve to fourteen weeks or butchered for the freezer.

One of the biggest hurdles, the one that seems to also be the largest negative in the eyes of most main stream farmers, involves the use of **tilling**.

Permaculture enthusiast seems to disallow the use of tillage as a tool for building a permaculture farm or site.

Get the Infrastructure first

Many also seem to want to start with building the soil instead of concentrating on getting a **solid infrastructure** in place first.

If you don't have the **flow of water** over your land taken care of, along with a road for ingress/ egress, a place to live, electricity, sewage, and all the rest that allows you to live on a piece of land, how are you going to build the soil in an effective way?

There is a line of “natural progression” Mother Nature uses it, and so should we.

Erosion results in most places where water runs at the mercy of gravity.

This makes **Water Control** the prime objective, since without water, there is no life and with too much water, life is washed down hill.

Keyline designing is a very effective method to control the flow of water on a piece of land.

However, one must remember that this method, introduced by P.A. Yeomans, was developed in Australia and so is more valid in dry landscape areas that match the conditions found in Australia.

If you use the method by sticking to his book, in a temperate climate or in a rainforest type climate, you will be in for some rude awakenings.

Adaptation is required, with a large dose of **observation** (Mollison's first principle) you will be able to design a hydrologically sound **plan for water** control that will work for your situation.

Failure to do this will most assuredly end in a lot of extra work or in the worst case, total disaster.

Paper and pencil or pen, photos, topographic-maps, all are your friends for developing a plan that will work best so you don't spend any energy fixing mistakes later.

Next are The Trees

Once you have the water spreading over the land and soaking in, it is time to start planting some trees.

It is sound methodology to use trees that are already thriving in your area as a base.

However, what if these are not food producers? In that case, you will need to do a little research on species that thrive in other places on earth where the normal conditions are very similar to yours.

By doing so you might find that there are many food producing trees (fruits, nuts, berries) that even though they are not naturally occurring where you live, they would in fact grow quite well for you.

If, for instance, you live in south Florida, you can grow avocados, mangos, papaya, even coffee, quite well, even though these aren't usually thought of as trees that grow in Florida.

There is a lot of data (in the form of charts and maps) out there that will show you; what type of area you live in and the many matching areas around the world.

The USDA web site is a decent place to start looking for such information.

We now have our water issues taken care of and we know which food trees are best for our area.

Bio-Diversity

Next is planting these trees in a polycultural way, using clumps of single species or alternating species, depending on how the pollinators are wanted to travel, leaving alley strips open for soil improvement and crop plants like vegetables.

When we use an **alley system** of tree plantings we end up with a very nice savannah like growing area.

If we have our land properly water managed, trees planted along the adapted **keylines** we have established for proper water control and soaking in, and then we have alleys for planting all the other food stuffs we might want to grow.

We will, at the same time, have diminished the amount of work required to keep these systems growing and working for us producing food stuffs.

This is part of the constant, utter neglect idea that is part of permaculture.

One of the strange things to me is the “food forest” it seems strange mostly because the definition of Forest does not sound like a place you could actually grow food.

A forest is an area of closed canopy woody trees, this means an area of not much, if any sunlight able to strike the soil beneath the trees.

A savannah on the other hand, sound like a perfect place to grow food since it has open spaces with clumps of trees here and there for those plantings that want some shade along with some sun.

Once again this is simple observation followed by implementation of systems found all around the planet.

Disruption

Utter neglect is Nature's method, but it is not her only tool, she also uses **disruption** via earthquake, flood, high-speed straight line winds, lightning strikes, wild fires and every other “natural disaster event you can think of.

When disruption occurs there is a “**reset**” of natural progression which may or may not result in some previously non-dominant species becoming the dominant species.

We can use the tool disruption to help those species we desire to be dominant to become so.

For us that could be a bulldozer, backhoe, chainsaw, or something else.

As an example, if we have a closed canopy situation and the dominant species is hickory and we have no use for the nuts of that particular species of hickory.

We might decide we want to grow hazel nuts, pecans, walnuts or perhaps we want fruit trees to dominate.

We can disrupt the current natural progression by getting rid of or heavily thinning of those hickory trees and coming back planting our desired species heavily.

Those plantings will thrive, die or be spindly depending on how well suited they are to their surroundings.

Under these, we can plant other, low growing or lower growing items such as blueberries, huckleberries or Saskatoons.

We then allow two or three years to pass, doing absolutely nothing to this area.

When we do come back we will find that some of each species will have claimed spaces as the dominant species.

If we then decide we want those species, we only have to **thin out** the dead and the weak.

This means we have used very little in the way of fuel or other expense creating manipulations so we are looking at a 100% profit from those plantings.

The culled items can become firewood or something else that we might sell to gain even more profit from the little effort we have put in over those last few years.

This is how I see permaculture actually working to our advantage and it is a great way to show those practicing “standard agriculture” that there is a better way that will cost them far less year after year.

What about alleys?

Once we have our farm set up so that our trees are in place and growing all on their own, we can direct attention to those alley ways we have created by not planting trees.

This is where we can grow vegetables as a cash crop and at the same time it is where we will direct some effort into soil building without the need of importing materials, which will also keep costs down to the minimum.

How much money can you save if instead of spending time to locate, transport and spread mulching materials, you simply grew them right where you wanted them?

If I want 6 inch deep straw mulch, I can spend money and buy the straw (not knowing what if anything it has been treated with) or I could plant cereal rye, wheat or barley right where I want that straw, at the same time I could broadcast something like yellow sweet clover as an understory planting.

Now I have options;

- I can let the straw plants grow to full fruit then harvest the seed as a cash crop,
- I can let it grow to seed heads and bring in animals to graze it and the understory along with any volunteer grasses,
- I can let it grow to seed heads and either uses a crimp roller or simply use a front end loader bucket to press the straw plants down, then let the understory plants take over.

Any of these will be of benefit to my farming operation.

- If I harvest the seeds, I have cash flow to the plus side.
- If I graze animals, I get stomped down straw plus manure to build the soil.
- If I crimp roll or otherwise press the straw down, I get my 6 inches of mulch right where I want it and I get nitrogen fixer plants growing up now that they can get the sun they need to grow and form seeds.
- I also get flowers that attract the pollinators back to the alleyway.

All this time those trees are growing happily along, maturing to give me fruit and nuts to sell.

Once the alley has been growing for around 12 months it should be time to plant some vegetable crop, say acorn or butternut squash.

I can now run a harrow to turn under alternating rows, leaving an equal space growing as is between the harrowed rows and in those harrowed rows I can plant my squash.

Now I am still building soil by decomposing straw, worm activity, nitrogen fixation and wild animal poop.

At the same time I am growing a cash crop that will bring in profit, since very little is being spent to produce that crop.

If I do this year after year, in as little as 3 years I will have carbon rich soil around 18 inches deep in my alley ways.

Trees that is mature enough to provide income from their fruits and nuts along with berries from the tree way understory.

My inputs will be few and my profit margin will be large.

I will be practicing real permaculture and I can advertise tours of my farm and charge money to show people how to do this and I can show them that there is real profit to be made by farming this way.

Do I believe that permaculture is the way of the future of farming? You bet I do and I am working hard to prove it to those who don't believe.

This is the first instalment of a little series on how to make money with permaculture.

Chapter 2 – Profitability in Permaculture

This time I'm going to talk about why we have to show profitability in permaculture.

Thank you to those who have responded in positive ways to this little series of articles.

In 1970, I was just finishing my BS in chemistry and began working with a soil laboratory while continuing my education in Biology and Horticulture.

I was soon leaving the soil lab job behind; one of my professors wanted me to work for him on a government funded project. This seemed a better educational opportunity.

His funding allowed me the opportunity for my master's degree so I jumped into a biologically oriented agriculture thesis program. The focus of my thesis was **improving the soil biology in farm fields** thus reducing the need for synthetic fertilizers.

Since the project was under a USDA grant, I had access to the equipment needed to do all the testing and checking of progress on my test 250 acres. The project was a great success and led to a job offer by a commercial hops farm located in Sacramento.

It was during this journey of education that I became friends with several vegetable farmers in the Middle California farm belt. They were unhappy with the profit margins they were seeing and they asked for my help with their farms.

Since I was still in college, gaining all the knowledge I could, I talked to one of my professors to get advice on if I should work with these farmers. He thought it's a great idea and offered to let me use this experience as a thesis.

Over the next year and a half I worked with the hops farm, a lettuce farm and one that grew squash, onion and broccoli. In each case they were practicing **monoculture** row cropping. My function was to **reduce the dollars of input** and **increase the cash receipts** so their margins went into the black.

I am happy to be able to say that I was able to live up to their expectations, after lots of discussions on why they should change their methods. At the time I had not yet understood that water control should be first on the list.

I was into soil and that was where I focused my energies. The results were great, larger crops with less money spent on fertilizers and insecticides resulted in more money going into their pockets, the result they all wanted.

After my time working with these real farmers and understanding that farming is more **business** than anything else.

I read a book that had been written in 1929 by J. Russell Smith, the title of this book was Tree Crops the subtitle "A permanent Agriculture" didn't really hit home for several more years, but later in my life the book became significant to how I think about everything on Mother Earth.

The ideas put forth in this book were not only timely when first published but have become even more important since agriculture has continued on the destructive path it became with the invention of the tractor.

Since farming is business, those who grow crops, do so for money first, it is fallacy that they farm to grow food for others, they farm those crops that will bring the most money.

This is why in the past 20 years corn has become the primary crop in states like Iowa, Nebraska, Illinois, Southern Minnesota and even South Dakota. Ethanol is the latest big cash crop and that means corn is the new king of the rows.

Food crops are not the primary crops grown in the United States, just like Manufacturing has gone away to other countries, so food crops are going.

We are at a cross road yet again and sadly the way "Big Ag." thinks that money is all that matters. This is going to end up yet another great disaster for the US as fuel becomes even more necessary to get food to the big cities, prices for that food goes up and up and up.

The Government says we are in a "recovery" but if you check prices at your super markets, we are in a **recession** and truly headed to **depression** the likes of which we have never experienced, not even the "Great Depression" will compare.

This is why I am working to build a Permaculture style farm that will make money growing food in quantities that allow me to sell it to Markets.

Anyone can take a few acres and grow food stuffs, sell them at farmer's markets and make a little money. This is great, but to build the future of farming it has to be done on the large scale and profitably.

Only then will today's farmers give it a try. The majority of farmers are not "progressive thinking" folks; they are stuck in the traditions practiced by their fathers and grandfathers.

That way of thinking, promoted by the Agriculture and Chemical companies since the 1930's has to be shown to be not only out of date but not profitable.

Even though you can show them these facts, they will stubbornly stick with “what they know” because “it worked for my dad, my grandfather and great grandfather”.

I've been told this so many times that I don't even bother to ask why they continue the road to bankruptcy anymore. Instead, when I consult now, it is all about how I can increase their bottom line by reducing the money spent to get the crop in the field, reducing the money spent while the crop is growing.

I then talk about introducing multiple crops instead of row cropping.

This is more uphill since they need a way to harvest with their machines and that (in their minds) means mono-cropping.

Machines require certain things in order to work best; this is what has driven the farming methodology since the invention of mechanized farming.

Our mission is to show the conventional farmer a better way to do what they do now. Spouting verse and verbiage from some book or books is not going to impress the very people we need to convince to change.

It will, in fact, tick them off so much that they will close their ears tight enough to be water tight. I know this well, I've seen it happen many times. They become even less interested if you start talking about “putting more land aside for nature”.

Sound like their idea of a “tree hugger” and you can get in your car and head home.

However, if you can show them a **working farm**, using techniques that cost very little to implement, need far less irrigation and produce bigger, better quality crops that people will pay for, then you can get their attention.

Thus the new direction for Buzzard's Roost Farm into being a “show and tell” profit farm. I know the people in my state that farm up to 1 million acres, have earned their respect over the last 35 years, and they seem to be willing to try things I suggest.

Once I can invite them to my "working permaculture farm", I should be able to not only gain their interest in trialling my methods but I might even get paid to help them build their farms into what they can become. **Large Scale Permaculture Farms** operating in the black from profits made.

It should be no surprise, or perhaps it is a shock, that most farms in the US operate in the RED.

The average large farm loses approximately $1.50 for every dollar of input.

Subsidies are how they survive, without government money, we would have no farms.

The Convincing Plan

The Farmers I work with are first convinced that instead of laying a field fallow (doing nothing to it) they instead plant a multi crop such as a tall grain, along with red and yellow clovers.

This way they can come in and high combine (harvest), leaving lots of stalk in the field to crimp down so it will rot and allow the clovers sun so they start growing and fixing nitrogen.

When I show them that they don't have to leave a field unproductive, ever, they start listening.

Once I have their attention and confidence in my proposals, we can start getting them to multi crop all their fields in this manner so they are not only getting a crop but **building their soil** which reduces their per field costs for fertilizer.

When they see that money saved is money earned, they sit up and want more ways to stop spending, this is when I can start showing them how to turn a huge monocrop field into a multi crop field all the while building their soil.

Strip Planting

We do this by strip planting, it could also be called **alley cropping** but I prefer to use the alley description as space between tree rows and strip planting simply as alternating two or three combine header widths strips of plantings.

They have to understand that their fields will be producing at least two crops at the same time but the harvest will not be an all at once affair.

Wheat, Barley or Rye can be planted with the understory of clovers, they can even have options of doing a full field planting of these then do the high setting harvest of the grain, crimp roll and let the clovers continue if they want to do so, it will build the soil of the whole field.

They could plant the whole field as above then harvest the grain, then crimp roll the stalks and disk alternate strips to plant second crops as well, still building soil in the left in the crimp state alternate strips.

They will still make a profit larger than what they are used to since they are not spending money for fertilizer, If they will **run cattle** through the field after the harvest of the grain, they will help build the fertility even faster.

In Arkansas I have one farmer that has gone the alley method, planting pecan trees in strips along the main line system which also manages his water better.

He uses his alleys to grow winter wheat mixed with clovers, he “high set” harvests the wheat which is less wear and tear on his equipment, his trees help break the winds so he has far less wind damage to his wheat and those pecan trees will be a second income that will continue beyond his grandchildren.

He was very resistant and it took several years to get him to even entertain the ideas but then his wife got sick and his kids wanted to help run the farm, he suddenly wanted to know his land would stay in the family for more generations.

That thought happened by several of his neighbours farms went to auction from bankruptcy. He liked pecans, even had a mono orchard of them near his house so it was easy to point out that he could use more of these trees since he already had a market for the nuts.

His farm land had been ravaged by the abuse that conventional farming does, for three generations the land had been in constant disturbance and he was willing to use 1,000 of his acres to test out the methods I was proposing.

I even told him that if he didn't see major soil improvement in water usage, fertilizer independence, crop growth rates, after the second year of the trial he would not owe me my consultation fees and I would help him put that land back the way it was before the trial.

After the first six months, he was seeing improvements he didn't think possible and those observations led to a second thousand acres going into the trial.

At the end of the first harvest of soft red winter wheat, he saw that his bottom line was in the black, it was the first time he had ever made money without including the subsidy money he gets.

He remarked that "I think you are really onto something here" when he told me about these first results.

This farmer has taken on the role of **evangelist** in his area and he teaches his fellow farmers what he has learned. (I still get to layout the water management for new converts, so I do get a little money from that consultation).

He doesn't charge the farmers, just brings them to his farm and walks them around, pointing out how he does things now and that he doesn't buy fertilizer or herbicides anymore because he doesn't need to.

His soil has improved greatly and the top soil goes down around 24 inches deep, everywhere. Rains don't wash away his soil or rut up his fields (His fields, like the whole area, are slightly rolling hill type).

I consider these farms a good compromise, they are not true permaculture but they are **holistic land management** that is **restoring fertility**. A great first step forward to a new methodology.

These farmers have formed a sort of co-op for cattle, none of them wanted to get into the cattle business so they all own part of the one herd and they move them through all the fields after the harvest is in and before they move to the second crop planting period. (**stomping stalks and fertilizing the fileds**)

They usually have a first of winter slaughter event where every farmer gets his grass fed beef for the freezer. (They came up with that idea all on their own, that it would be cheaper to share a herd since all their farms interconnect, and it is easy to move the herd through in a two day progression).

In California there is one Avocado grower that harvest squash and broccoli from between his trees. The left overs are "chopped and dropped" from the vegetable harvesting. (Chop-and-drop mulching)

I've known this man since 1963, His son was a class mate of mine and now runs the orchards, and it was pretty easy to get Sammy to give the alley concept a good trial.

His dad is in his late 80's now but is still going strong (avocadoes are truly a super food).

The California farmer really needs to get involved with water management, just like everywhere else that will be the only way they can survive this super draught they are experiencing right now.

My friend with the avocado orchards has not needed to use even half his allotment water over the last four years, instead he sells his surplus water for extra income. We did main line water

management works in the orchards back in 1971, a year before I moved to Arkansas, we had to go around the trees since most were near 60 years old then, it was a long process since we didn't want to harm any of the roots of those trees but it works very well.

When they do get a rain, all the water that falls on his land soaks in and the water that flows to his land from other places around him also is spread out and it soaks into his soil.

His topsoil depth is almost 5 feet and the biome in it is fantastic.

Chapter 3 – Requirements

As I have previously mentioned, the goals of Buzzard's Roost Farm are undergoing major changes due to life changing events that occurred this year.

Previously we were going in the direction of **Homestead style** living where we would grow most of our own foods, vegetables, fruits, berries, grapes, and we were going to produce our own meats, pork, chickens, ducks, geese were all in the line-up and being procured.

We have guinea hogs, a heritage lard hog breed that suits our land size quite well. Then Wakantanka decided to test us once again to see just how firm our resolve is.

The illness of my wife, Wolf, has been handled and she is recovering well. But, she has decided that she would like to be able to take trips away from the farm that last more than half a day.

There is much of this country she wants to see, and I want to show her as many of our natural wonders as I can.

She also wants to attend more Pow Wows and ceremonies. To do these trips we will need the **ability to be away from the farm** for more than one or two days on occasion.

This means that animals that require daily interaction need to either go away or **we need to find a "baby sitter"** for those times we are going to be away for extended periods of time.

Initially we were going to raise the hogs to help the breed survive long term. This meant that we would be breeding and selling registered baby hogs and raising enough of them to also provide some restaurants with their meat and organs.

This has now changed and I plan to only keep the boar and one sow. The others we have right now will be slaughtered and put in the freezer.

This frees us from having too many hogs on the land to be able to leave on two to three day trips. Our neighbour will be the baby sitter during those times and we will reciprocate for him.

This development means my original plan is out the proverbial window and a new long term plan needs to be created.

Since I have spent two years observing our land, noting what is here, how it got here and the direction the succession is headed right now, how the rain water flows (erodes in places) and our main line.

We are still installing the **water management** since it is hard going with only hand tools, swale and berms take a while to dig, shape and then the connecting ponds have to be hand dug.

A long process that is rewarding when one run is completed. With our steep grade, I'm not sure machinery would work for most of our land, but it would be nice to be able to get more done at a faster pace.

I have come to some conclusions that will work very well for us and they will fit into our overall forest agriculture design.

When we started this journey the first goal was to find the **right land**, this took three years and it was Wakantanka that brought us to it.

First Year

That first year we would come and set out folding chairs, build a little fire and sit. We cooked on the fire, eventually brought up our little travel trailer and began our **first disruption process**.

This land was overgrown with sour black berries and sumac trees, the first stages of reclamation by the earth mother had been growing for seven years.

This first disruption cleared out almost all the blackberry vines and crowns and we dug and pulled most of the sumac since neither were what we wanted where they were growing.

Once this was finished the grass that had laid dormant got enough sun to sprout and grow. We found the remnants of the house foundation, just the footing remained.

The house had burned and the remains were scraped into one huge pile and two smaller piles, these were found at both sides of the property.

We decided to leave these alone since it would take large machinery to even begin to move them, and we didn't know what had taken up residence within these mounds of metal and rubble.

Since permanent agriculture is all about observing and then working with the Mother Earth, it was good that we only had hand tools to do this work with.

Slowness is the Key

It creates the situation of thinking through before you break a sweat since you don't want to bite off more than you can chew and digest on a weekend.

It forces you to go slowly, which allows your mind to process more than if you jumped on a big tractor or other machine to do the work.

It also builds muscles and creates sore backs, eventually you get stronger and the aches are smaller but you also get the feel of your land.

You get to know how it breathes and drinks and eats, then you start to hear what it is saying to you and you stop to listen well. For us this land is sacred, we were drawn to it and now we must nurture it so it will provide our needs.

This is what our people have always done, regardless of how we got food, **we are caretakers** first.

This is how I see permaculture.

The beginning of this year, 2016, was to be the year we really got things going.

We had already planted two each of pear, plum and mulberry trees. We got two Arkansas Black Apple trees and one Macintosh as the cross pollinator.

These first trees are in our backyard space for easy access. The land gives us wild grapes and Muscatine along with Passion fruit and Persimmons.

Just as we were getting ready to finally put up our perimeter fence, Wolf was found to have cancer and that has put our works in a state of maintenance only since February.

Now in October, it is looking like we will be getting back to building around the first of the year.

This pause was good; it has made us see a different direction than the one we started on, this new direction will be better for the land and for us.

Wakantanka has always looked after us, even though sometimes it is hard to understand the reasons things go the way they do, if we just stop and watch, listen and keep open minds and ears, we eventually learn the lesson being taught.

My first application of water management was along a **key-line**, it ended just shy of catastrophic since our land does not fit the assumptions of the key-line methodology.

The resultant water plume occurred in a really bad spot for us and I had to undo 6 months of work to save our road.

The Main-line technique (promoted and taught by Mark Shepard, fits our land better than the key-line method), fits our 18% to 35% grade much better so a complete redo is in order.

We have also decided that I have to have a tractor do be able to do the amount of work there is to do.

That machine will be purchased after the first of the year.

For now I will be laying out the lines using a laser level to set a 1% grade to move the water along, bringing it where it can soak in instead of creating a spring or just rushing down the hill sides and leaving us only rocks.

With our house on the ridge it will look fantastic once all the swales, berms and ponds are made.

If you ever think that water management isn't the first thing to take care of, go stand on a mountain top during a major rain event, it will change your mind quickly.

Our land will end up with **terraces** going down both the north facing and south facing slopes, the design shows it will look a lot like an Inca landscape but with wider terraces in places.

Since the land is so steep, we will also be building rock retaining wall features to hold the berms in place.

We use our **hogs** as ploughs and they do a great job since I refuse to ring them and if we leave them in a space for a full week, they get rid of all the vegetation that we don't want, leave loads of manure and lift lots of the rocks up to the surface.

I am also going to use them to help with building the swale and berm structures, I've observed that they will root along any line I start with my pickaxe.

Their help will save a lot of my back now that I know they like to help out just for grubs and worms and so on.

Once they have worked through an area. We go in and broadcast a seed mix to sprout and establish good root systems, this mix is loaded with **protein producing plants as well as nitrogen fixers and tubers.**

The hogs (and fowl) will be chowing down on all these goodies once they are well established.

Our land is dominated by Bitternut Hickory trees with White Oaks as the secondary trees.

I will be using my chain saw to severely thin the hickory stands so light will get to the soil surface.

This will act as a **coppice** area since the hickories will send out sucker shoots from the stumps.

Once that starts I'll have to go through and pull the root systems of the ones that I don't want as coppice firewood trees.

Once I have created the clearings, **pasture mix seeds** will be broadcasts and then **fruit trees** will be planted in groups so that there will still be clearings for the pasture mix to flourish.

We will perimeter fence our land so that we can use electric tape fences to move the few hogs we will keep around, they are pasture eaters and only root once they have eaten all the pasture mix of greens.

Putting them in a larger area will allow us up to 4 days travel time when needed; otherwise they will be moved every two days.

As I have already mentioned, we have a neighbour that will tend our animals when we make trips.

Chickens will be fully free range over the whole farm, (chickens don't really travel that far unless they are raised with guinea fowl that do travel widely and chickens will follow the guinea fowl they are raised with).

We already have one 8' x8' x7' coop built and I will be building a second, larger coop.

The current coop will be able to house all the chickens and guinea fowl we plan to start with.

I will be putting up a large (10900 sq. ft.) covered run around the coop.

This will use 1/2” rabbit type hardware cloth for the walls and 2” x4” fence wire for the roof cover, necessary because of raccoons and hawks that live on our land.

Automatic doors and feeders will be used along with a constant flow water nipple setup to meet the needs of the fowl.

This area will be opened when we are home but is also large enough to allow us to lock the gate and not worry about being gone for a few days at a time.

There will be expanded vegetable garden spaces on the North Slope which will allow us to grow Chef desired vegetables so we can make some cash by selling excess produce to restaurants.

Wolf has developed intolerance to high gluten wheat products so we will be getting einkorn and a couple of other old world wheat seeds to grow our own and produce flour she can tolerate.

Neither of us eat corn except after it has been ground or turned into hominy, this being the normal way our people have always used corn.

And that about does it for the new plan for Buzzard's Roost Farm at this point.

When things change I'll post those changes with the why they came and how we will address the resulting adjustments to our little patch of the earth mother.

If you have any questions, or would like me to go over something in greater detail, post those questions and requests here and I will do my best to answer them.

Dylan Mulder asking

Ever since I first heard of permaculture, it became very confusing to me that there was not a single for profit permaculture farm selling at any of the local markets*. I used to do farm work, and have sold at markets, and I'm not saying that to show off - what I observed was that a for profit permaculture farm could certainly work as a business.

In the spirit of this thread, I'd like to run through some of the biggest reasons that I see farm businesses fail. I'm not just being morbid. I want to see people succeed. I want to see permaculture farms. All too often, the failure has NOTHING to do with farming. It doesn't matter if it's a conventional farm, an organic farm, a permaculture farm, or a bunny wool farm, all farm businesses adhere to the same rule that,

1) A good business needs good business management. When businesses fail (and many do), this is the first and usual suspect. Whenever I see a farm fail, it's usually not the fault of the farmer, but the fault of the farmer as business manager. You simply have to run the numbers - it doesn't matter if you don't like it or you aren't good at it. Run the numbers. Learn basic accounting principles. Keep a balance sheet. Keep an income statement. You can learn it all on the internet for free, and it's not only some of the best business management knowledge you can learn, but it can make a huge difference in your personal life. It sure did in my life. These are great tools, and you can use them to identify weak points in your business. If turnips are only netting a $26 profit at the end of the year after the expense of growing them is deducted, then it's time to make a change. I've seen too many small farmers getting trapped into growing a crop that they lose money on. Then they do it year after year, because they either didn't run the numbers or they are sentimental, which brings me to,

2) Animal hoarding. This is a phenomenon I've seen that's specific to farms and small farms. People decide they want to farm and for whatever reason; they suddenly and rapidly acquire a great

number of different animals - with no clear business goal or strategy in mind. They then haemorrhage cash on the very real expense of keeping living things alive, and keep doing it until they're broke and frustrated. What the f**k? Sometimes the best animal to keep on the farm is simply the Human animal. However, it isn't exclusive to animals as the same thing happens with plants. Hoarding acres of unsellable perennials is only going to tank a business. Unfortunately, some of the ideas and projects we'd like to be profitable, simply never will be. While it's a harsh reality, we can design functioning permaculture systems that are profitable, but only if we observe and let economy influence the ecology. Speaking of Human animals, I've seen a lot of,

3) Working to death. Failure to prioritize tasks and manage labour is another huge slayer of businesses. As business manager, you have to identify the activities that will yield the most 'fruit'. QUICK QUESTION: Should we spend six hours digging hugel beds, six hours handpicking squash bugs, or six hours harvesting 500$ of mushrooms? THINK FAST! Which is best for the business? Maybe we should pick bugs for two hours, or not at all? Don't we need to pick the ripe berries before it's too LATE OH MY GOD WE'RE TOO LATE. We're working 12 hour shifts! There's so much work, and so little time!

The point I'm trying to...crudely illustrate, is that farm work can rapidly pile up to an extreme. Unfortunately, the kind of driven people who actually go out and make businesses will often fall into this trap, precisely because they are so driven. They'll rack up huge hour counts, working very hard, on tasks that yield little or no 'fruit'. Labour is an expense. They burn themselves out, and they burn their pocket out, and they throw in the sweaty towel broke and frustrated.

Identify the projects that are barely or less than profitable, and drop them. We'll pick the mushrooms and the berries, sell them both, and dig that hugel next month...but only if it’s going to yield 'fruit'.

4) Keep personal and business finances separate. Keep personal and business finances separate. And...Keep personal and business finances separate. The business MUST pay for itself, or it isn't sustainable and the whole farm ecology collapses. You MUST pay yourself for the time you put in. It's sickening, how many farmers I've seen who are NOT PAYING themselves. Absolutely, vomit inducing, utter stinking bullshit. If you fund your farm business, you MUST be paid back your initial investment. The farm business is not you - it's effectively its own artificial entity. A massive super organism if you will compose of fruit trees, flowers, puppies, and shit. And. It. Owes. You. Money.

The farm business needs its own bank account. It pays its own taxes. It has its own name. Why? Because it's not you. Because, if the farm business keels over and dies, you don't want to BE the farm business. If someone, heavens forbid, sues the business, you really don't want it to be you.

I know people, good people, who live in a bizarre state of self-slavery to their farm entities. They don't pay themselves. They cover extra business expenses out of pocket, with no repayment. They have never, and will never, are repaid their initial investment. What a f**king tragedy. Don't let it be you.

In conclusion, I think a permaculture farm could be a fantastic enterprise. Did you know that current small farmers, of the organic smallholding market garden sort, blow great sums of cash on very expensive rock fertilizers and fancy biocides? Did you know that they import most, if not all of their

animal feed from offsite? Permaculture systems can reduce, if not entirely eliminate, expenses like these. That's a pretty awesome advantage.

* Unfortunately, the only permaculture farmer I know went out of business. He's a great farmer, super knowledgeable, and a horrible businessman. Whoops.

Bryant Redhawk answering

Spot on Dylan! Farming is a business as such it has to be profitable. Businesses need to have a solid business plan and books have to be kept.

It is bad business to hang on to something that is causing red marks in the books. Most of the "permaculture folks" I have met in person are not "in business".

Those that are, do not "Go by the Book" as much as they adapt the concepts to fit their needs and that is how they start turning a real profit.

There are times I recommend "no disturbing the soil" and there are times that disturbance is the best method. This is not "constant disturbance, like what most farms use now.

Merry Bolling asking

This is one of my favourite threads ever! My husband & I retired to start a small hobby farm with no economic goals in mind, just utilizing permaculture as a way of growing wholesome food with less work later on as we aged. We, too, have had changes in our lives and are now considering what plants & animals to raise that would be profitable and yet keep the land fertile. We feel a strong responsibility to the land and the life within it to return the blessings it provides to us.

To be a really long-term steward of the earth, you must be profitable enough to be able to pass it on to others who understand & honour that responsibility and yet they and their children can afford to stay on it. Economic profitability is essential for both the people living on it and the health of the land!

With long-term profitable stewardship as the most important goal, your land's geographic location to various markets and the cost to transport those goods to them must be a big part of what and how much you choose to grow. You need to remain flexible as well, keeping an eye on what is selling at a decent price now and your best guess for the future.

From my less-than-experienced viewpoint, this will be particularly difficult with long-term crops we love like nut and timber trees. Our land is fairly far away from large cities and their many restaurants and grocery stores. Far enough away that we are considering selling our land and buying different land closer to a larger city. But we love this area and prefer to try and find crops that can pay for the added transportation cost from here.

Timber and cattle are the two main crops that most local farmers manage to stay in hereabouts, but their children grow up and leave for mainly economic reasons (of course, a few just have other gifts and interests than farming).

We're still figuring what to invest our labour and money into, so we'd greatly appreciate it, if this thread would address how to make these kinds of decisions (choosing profitable crops with an eye

on transportation costs, as well as how to set up bio-diverse crops so the costs of harvesting are reasonable). Any and all suggestions are appreciated.

Thank you so much, Redhawk, for starting this important topic! Permaculture needs to go mainstream and must be profitable to get traditional farmers attention. This will also allow the next generation to stay in place and make a living from the land they love. A win/win for both the earth and the life forms who live in & upon her!

Bryant Rredhawk answering

Merry, thank you for asking.

I am working on this very topic for you, and I will be posting that as an instalment within the next two days.

Wolf and I are fortunate in that she went to chef school and is licensed; I apprenticed and was sous chef at two upscale French establishments.

This gives us a nice background for heading in our new direction, which is "Local Fresh Food", oriented to the Up Scale Chefs in the cities near us.

Local foods usually means within a 100 mile radius from either the restaurant or from the farm, depending on which one you are.

You will be able to read how we are going about becoming "main stream restaurant suppliers" in that instalment.

I also plan on giving some suggestions on how to research what you have planned out before you expend energy on something that might not or just flat, won't work.

Thanks again for asking the question.

Chapter 4 - Research

So, let's say you already have your land and you too have found that you need to change directions as far as what your goals used to be for your piece of the earth mother. Perhaps, like us, you have found that to live a nice life after retirement you need to find a way to make a little money from your farm, or perhaps you want to make all your money from your farm. Since making this decision, your big question suddenly is; how do I do this?

Setting up a business is done in steps, just like building a farm, house or anything else that is built. First step is to find out what your market is and which part of that market has a gap that you can fill. This is basic research for all businesses and failure to do this first, means lots of extra work or down the road failure (it is the primary reason that so many start-up businesses fail in their first years).

In our case, which I will use as an example, we know there are **5 high end restaurants** In the Capitol city of Little Rock. By calling and making an appointment with each of the **Executive Chefs**, we will be able to ask what they would want to use that **they can't get now**. This gives you the identity of the items you would want to produce to sell to them and you can find out their estimate of how much of each item they would want each week. **Multiply those figures for each chef and add them up and you now know exactly what your production numbers have to be** to be the filler of those

orders. **This is step one**, you now know **your market**, the **quantities needed** and **frequency of deliveries needed**. This step is the same regardless of type of produce; vegetables (full grown or micro), pork, beef, lamb/mutton, etc.

You have the quantities so you can calculate, **land mass needed**, **water needed**, etc., to be able to fill those orders. You can also determine if you need high houses/green houses and how many of them will be required. From this information you can **build a business plan**, **build a delivery plan** and calculate total expected costs and revenues. Those figures will show you if this plan is economically feasible and don't be afraid to tell yourself the truth.

IF THE FIGURES AREN'T GOOD, THEN DON'T JUMP IN

If the figures are marginally good, decide if you really want to jump into this venue. For us we have some choices that will work pretty well.

1.) We can go with our Heritage Guinea Hogs as long as we can meet the demand of 4 hogs per week, per chef. This really isn't an option for us at this time, we can build up to those numbers but that means we have to be present every day, month after month, this option isn't going to fit our new goal of being able to travel some. Our decision, this is out, at least for the next few years.

2.) The chefs would love to have a steady supply of **fresh micro greens** as well as **fresh fully grown and baby vegetables**. The micro greens will require either one large high house or one large green house, growing lights, and probably **at least one hired worker** to help us with seeding, growing, harvesting, packing. This is very doable for us but it means we have to build the growing house, buy and set up the lights and expect a higher electricity bill every month along with heating costs in the winter months. This option is still under evaluation.

3.) The chefs would also like seasonable fruit items like Figs, Arkansas Black Apples, Pears and Plums.

This means we could build our land into strips of trees and alleys, the alleys can grow vegetable products and the tree strips will grow the fruits, little maintenance will be needed, the alleys can also build the soil even better than we have it now along with retaining more water in the soil, which the trees will want to have as well as the vegetable crops. We might need some seasonal helpers which we can find at our high school. We already have the beginnings of this avenue established and it can be scaled up pretty quickly to meet the chef's needs. **The down side is it isn't a year round income supplier**.

4.) We can go into chicken, duck, guinea fowl raising and provide eggs from the pasture raised chickens and ducks and we can provide guinea fowl meat as well. This option will take one year to have the numbers needed to provide all of these products in the quantities required and still have numbers needed to continue along without having to buy more stock.

5.) Our fifth option is to just raise everything for our own needs plus some extra that we can sell ourselves at some farmer's markets. (We have a good friend with a country store that will buy the surplus as long as we can provide the quantity he requires to consider us a producer.)

As you can see, we have done some **homework** on ways to fulfil our desires and still have a working farm that produces income.

There is also the option of setting up for more production of different items as the years go by which would increase probable income year by year.

It will be work but that is the nature of real world business and farming is very much a business.

From my example above, there is a lot to consider and a lot of preparation required to start a business and **insure that you don't go broke right off the bat**.

The more you prepare, remain objective, willing to believe the figures and not just go into any venture without knowing all the risks, pratfalls, and other curve balls that will be thrown at you.

The more likely you are to set yourself up for success instead of diving into failure.

If you are selling something, you will always be looking for other people to buy your product(s) because Murphy's laws always come into play.

EVEN IF YOU START OUT A SUCCESS, THE MOMENT YOU DECIDE YOU CAN SLACK OFF JUST A LITTLE BIT, IS THE MOMENT YOU HAVE HEADED TOWARDS FAILURE.

I have seen it happen many times.

A business starts up, goes along pretty well, building up customers, money starts coming in, and then the person who worked so hard to get to this point decides they can take some extra salary or they decide they need to take an expensive vacation because they have earned a big reward, even though they are still considered a start-up business by the rest of the business world (5 years).

Poof, they suddenly are scrambling to keep their business alive, they start to flounder since they didn't wait till they were well established in their market, with enough good employees that they were able to take some well-earned time for themselves and their market share went to others.

This happens very rapidly in the restaurant business, perhaps more so than any other venue.

It happens to many farmers too.

They are chugging along, seeing their books go into the black and suddenly they want a new car, new tractor, new combine harvester and then the next crop is not the bumper crop they thought they would have and they find that they can't meet their financial obligations.

The new car is repossessed, maybe even that tractor and combine then their house/farm mortgage goes into being late and suddenly, that is in receivership and being sold at auction.

In my area, just this year, 4 such occurrences have happened to people who believed they had it good.

Rule One of business bit them in the butt and now they are not just on the skids but out on the streets.

I am not saying it can't be done, I am saying to **always be prepared** and get set up for that worst case scenario.

Build slowly, get out and find the buyers for your market goods, and then go find more buyers and then go find more buyers, don't contract with all of them at once, but rather know who will buy from you as you build up and are able to provide your goods to more people.

Don't go deep into debt, build a “travesty” savings account that is separate from your bank accounts and never, ever think the business till is there for you to dip into, because it isn't.

You are not the farm and the farm should not be you.

An LLC is a good, inexpensive, way to protect your personal assets.

In the real world, sole proprietor or partnership are the two worst ways to be in business, no matter what that business is.

Both keep you personally responsible for any debt the business incurs and should the business fail, those creditors are free to come after your personal bank accounts.

That is why there are Corporations, they are separate entities and no personal assets can come into play at court time.

The steps you want to follow to build your farming business are;

- Find the land, in that 100 mile radius for a farm fresh type business and buy it.
- Find out what market or market niche you want to serve and determine the needs of that market.
- Write out your business plan (this includes your farm layout plan) and keep several copies of it around to look at every day.

It is hard to ignore the written word, so use that to your advantage, it will keep you from deluding yourself and that is a good thing.

While there is a silver lining, it is for clouds, not for businesses.

Expect to back slide and prepare for worst case scenarios, they will happen but if your prepared for them, they won't shut you down.

Create some sort of Corporation; an LLC is the least expensive insurance you as an individual can have to protect your personal income and property.

Get into the habit **of working at least 12 hours a day** (that's half a day) it is your new, chosen work day.

Know you will succeed as long as you don't fool yourself with "pipe dreams", while they can be good, helping you have goals to achieve, this is the real world and it is just waiting to chew you up and spit you out.

Marketing is key to selling anything, doesn't matter what it is, it has to be sold and at a price high enough while at the same time, seeming like a good deal to those doing the buying.

Do not be afraid to ask for help, anytime, about anything. Somewhere out there in your area there are others, just like you that are willing to offer advice from experience.

You may not know them, but they can be found by asking, at the feed store, church, farmer's markets, fairs, etc.

Be firm in your resolve to succeed and be ready and willing to do what it takes to have that success.

Always remember, nice guys can finish first, and they get more satisfaction out of it than those who cheat, lie and steal their way to first.

The trick to that is to not be suckered into not being smart first.

Spending money should be done wisely, not just to have that "latest Greatest" or "because I want it", while they can hurt personal finance, they can destroy business finance.

The best way to succeed is to not go into debt over 1/4 your lowest income year.

That way you can dig yourself out of that debt hole no matter what happens

It is easier to build a savings account than to pay off debt.

Chapter 5 – The Musings of a Rebel

"We must turn all our resources to repairing the natural world, and train all our young people to help they want to; we need to give them this last chance to create forests, soils, clean water, clean energies, secure communities, stable regions, and to know how to do it from Hands-on Experience."

Bill Mollison

This quote is a call to arms.

It speaks of the very real urgency all humans must act with if we are to undo the harm our species has done to the very place that supports our lives.

If we don't act with this urgency, then we will all go the way of the dinosaurs, dodo bird and every other creature that has vanished from the face of our planet.

One of my all-time favourite quotes is;

We have met the Enemy, and He is US!" Pogo.

Indeed, we are the only creature to ever live that makes a habit of **destroying the very planet** that we live on.

Imagine this; if there are other intelligent beings out there in the vastness of the universe, what must they think of us earthlings?

How stupid and idiotic we must appear to them.

Killing the very planet that gave rise to the vast diversity of life, all around us, including us.

Would it be a wonder if they took us to be a plague that could infect the rest of the universe, and so needed eradication to protect all other life?

Gives you pause to think about it doesn't it?

Sure there are many things we can do to fix what we have broken but we really must act faster than any government is willing to.

This is “do or die” time, right now, and what do we see happening by those “powers that be”?

Slowness to react, in a war that gets you dead in a hurry, in governments that is the normal mode of action.

We, the people, have to take matters into our own hands.

We have to learn fast and react quickly; this is what Bill is meaning in the quote above.

Sadly, it is absolute truth, and a statement of the situation humans have created.

It is only by doing, that we can teach the lessons we must pass on to the coming generations, least our legacy is one of polluted water, ground that will grow no food, no trees to provide shade, give off oxygen, sequester carbon, regulate the weather patterns.

Without all these things going on, Earth will become just like Mars, dead.

Yet humans, in the greed fuelled quest for money, are doing exactly that.

In most cases they are doing it with the blessings of Government, since Government is funded by taxes, they want us all to be chasing the almighty coin of the realm.

This is not in the best interest of our earth mother, and so it is not in our best interest, even though Governments tell us it is.

We have a duty to ourselves, a duty to our children and grandchildren and any children after that, to leave this earth in a state that is beneficial to their wellbeing.

We are renters, not owners; earth mother will be here long after every human has breathed their last breath.

The problem has always been our perspective of time, the way I understand it.

We, humans, think of time as a way to measure our life time.

When in reality of the universe, we are not yet even a blink in time.

“The biggest problem we have is the inability to think in the time frame of mother earth. What we call a day, she calls less than a second.”

Luta Ceta

Only by building farms that follow the principles set down by Bill Mollison and other forward thinkers / doers will the future generations gain the knowledge they will need to continue the work we are doing to heal the earth mother.

It is up to us to work with Nature instead of fighting Nature, for the fight is sure to be lost since we do not live but a moment.

Our challenge is to overcome the spouting of those who say constant disruption of the land is necessary so they can sell their poisons and convoluted seeds that poison those who eat products made from them.

It is not coincidence that the health of nations, who have listened to those corporations that make their living by saying theirs is the only way, are going downhill.

Pre-Monsanto, Dow Chemical, Bayer and the other "Big Ag" corporations, **people were healthier**.

Despite our “modern medicine”, **people are fatter, sicker, than ever before in history**.

Part of the problem is the medical advance of anti-biotics and their abuse by physicians and farmers.

Children, of any of the recent generations grow taller, at a faster rate than ever before, probably induced by all the growth hormones given to the animals we eat.

New diseases show up all the time, with little clue as to where they came from.

Until you look at the changes in diets, that's when that big question mark starts to shine in the sky.

Our wheat is now higher in gluten than ever before in history, as well as being able to resist things like Roundup.

This is not nature working, it is humans working against nature.

Now I will step down from the soap box and get back to how to use our principles on a real life working farm to make it better for both the farmer and our earth mother.

After all, it is what Bill would want and expects from me.

Chapter 6 – Commercial Crop and Disruption

Let's do a little exercise on “**What things will work well to make money** (on our farm), with as little effort and input as possible?”

The first thing to do is:

Observation of the land.

- What is growing there now?
- Was it put there by humans or by Nature?
- What are the characteristics of what is growing there now?
- What will fit into this ecology system without a lot of effort and that will provide an income source next year and many years after that?

- Does this area get fires often?
- Does it get flooded often?
- Does it see high velocity, straight line winds often?
- How long does it appear that this area has existed in the form it currently has?

(There are clues on the land about these questions; good **observation** skills will give you the answers to the questions) fire leaves tell-tale signs; no understory, burnt bark scars, only the tops alive, etc., as do floods and high velocity winds.

Pocket and mound structures tell of past tree blow downs, even if there is no part of a tree left as an example.

Now that we have the answers to our observation questions, it is time to make some decisions that will be of benefit to us as farmers.

If there is a closed canopy over-story (true forest shades the soil enough that nothing but shade loving, low growing plants are present, or nothing grows under it), how do we make that an advantage?

In this scenario, disruption is needed in the form of either a chain saw or a bulldozer to take out some of or most of the over-story trees to allow sunlight to strike the soil surface.

This sunlight will stimulate grass seeds to sprout. This is what you would do if you wanted to make this area suitable for grazing animals.

If you leave the closed canopy, then the trees need to be valuable as timber for lumber since pulp wood trees don't bring much in the way of dollar value (as little as .14 per tree) at all to the land owner.

At this point you need to know what commercially viable or desirable plants or trees would like to live in such an area, if they aren't there already.

If there are large trees, spaced around, with understory trees growing taller and taller.

The issue of fire just might be the first though since if these are fire tolerant or fire loving understory trees (think conifers, birches and others similar to these).

A fire comes along; they turn into torches, and if tall enough, start a crown fire that will destroy the tall, over-story trees.

If the over-story isn't fire tolerant, the disruption with fire, would result in the understory (if fire tolerant species) becoming the dominant species after the fire event goes through.

If we don't want that to happen, then we need to do the disrupting by removing the understory trees to prevent disaster in the event of fire.

Then we still need to come up with something to plant that will serve us economically, with as little input as possible.

What if, the area doesn't really have a true over-story of tall trees, but is full of shortish useless trees with some grass and low, shade tolerant bushes growing there?

In this case it might be ripe for disruption by cutting the useless trees for use as mushroom logs and the branches left to rot or ground up and left to rot.

This gets rid of a lot of the shade, and the left over shade lovers will become dominant. Unless we also don't really want those around either.

Which gives us some choices; we can run some grazing animals through to do some tramping, eating and fertilizing before we continue with our disrupting.

Or we can just go through with a heavy duty bush hog and mow all that stuff down, chopping it into small bits that we leave to rot.

Either way is great for us, the animals means less to bush hog though and we get some animal feed from the land.

Once we have done this disrupting, we can come through and plant the trees we want to grow, such as **nut trees** and or **fruit trees**.

Once these become established we can do other plantings that will benefit us like **shade loving vegetables**.

Market Demand vs. What Naturally Grows

The other part of the "what will work best" equation, is **market demand**.

Perhaps you want to grow nut trees as one of your long term money crops.

If there isn't a buyer or buyers for nuts in your area, then you either have to forgo that idea or find a buyer/ market for those nuts.

Nuts are great since even a three year old tree will produce some nuts, heck; even a one year old tree might produce one, depending on the nature of that particular species.

But what we want are trees that will, over a long period, produce more and more nuts.

Pecans are fickle trees when it comes to nut production, most of them will have off years where few nuts are produced and even years that no nuts are produced.

The Pecan has male and female trees; **Pecan is single sex tree**, so there is no self-pollinating.

Drought and extreme wet at the wrong times of year can create a year of little or no production as well.

But, when they do produce, they bring a fairly high price, which can help make up for the lean years if you have prepared the rest of your farm with these characteristics in mind.

Chestnut trees are steady producers, self-pollinating and not so bothered by differing weather conditions.

As long as they can access **enough water**, they will produce.

Hazel nuts are really nice, they usually will produce well, the nuts drop to the ground and can sit there for quite a long time before there will be damage to the shell.

You can even use a big shop vac to vacuum them up instead of needing fancy, expensive harvesting equipment.

Apple, **Pear**, **Peach**, **Plum**, **Fig**, and every other fruit producing tree should be looked at in this same manner.

The nice thing about fruit trees is that they can be sold to individual grocery stores that have instigated a "**Local Food**" section.

You will need to know how many bushels you will need to supply, the times to bring them and the preferred condition.

Condition (of the fruit) is probably the one thorn in the heel of the fruit grower.

People have become used to seeing perfect looking fruits in their grocery store cases.

They buy these items only to find that not only do they not have great flavour, but they take forever to ripen, or never actually ripen.

Why does this happen in every grocery store in the US?

Because those perfect fruits were picked so far ahead of being ripe that flavour didn't have time to develop.

Our "Natural, no spray fruit" will have blemishes, it is unavoidable, but these are also the marks of better flavour, better for you, fruits.

You just have to be **aggressive in marketing** your fruit this way to the grocer.

Market Demand is going to be one of the deciding factors; regardless of what "crop" you want to plant, without a market demand, you will not make much, if any, money for your efforts.

Farmers are in business, **businesses need profit** to stay in business.

Once you have decided on the blend of trees, it is time to start laying out and installing the water management system (swales and berms, catchment ponds, all laid out on either a key line (if you happen to be in Australia or somewhere like it) or a Main line.

Once this most important part is completed, the alleys should be set so you know where the annual crops will be grown, and where the trees will go in.

Some of your alleys might be put into long term, perennial crops that won't need much else done once they are planted.

Perhaps you have found that Asparagus that is fresh cut is very appealing to your local grocery store and the manager has indicated that he would have to have it bunched (25 spears or perhaps 1 lb.) to be interested in buying it from you.

He also brings up that he would have to have 100 bunches per week during the Asparagus season or he won't buy any at all.

In this instance it would be a good idea to know how many crowns need to be established to furnish enough to supply his stated needs.

Remember that it takes three years to get to production for Asparagus, expect some plantings to fail and now you know you will need to use about an acre of your Alley strips to be able to become a supplier in three years.

Talking to the manager once you have him interested can lead to his bringing up other items he would be interested in stocking for his customers.

Buyers that know they are being listened to and that you will do your best to supply their demand for exactly what they want, will be long term customers as long as you deliver the produce on time, in the right quantity and quality.

The fact that they can advertise that **your produce is better than Organic**! Will appeal to their business sense, as well as the fact that they can charge more for your produce.

Check the price of "Organic" items next time you're at your grocery store, then look and see what the prices are for "Natural" and normal in those same items.

Eggs are good example; in our local grocery store we have Regular eggs, Organic eggs, Brown eggs and Pasture Raised eggs.

The cheapest are those regular, caged bird, eggs, the highest priced are the Pasture Raised eggs at nearly three times the cost of the regular eggs.

The Organic eggs are actually lower in price than the Brown eggs, why has to be colour only, since they come from caged birds.

People are becoming more aware of their foods and most are willing to pay more for the best they can get.

This goes for eggs and everything else.

If you can show how it is grown in photos, people will see that there is a huge difference and give it a try.

When the taste is far superior to what they are used to buying, has better nutritional values and no pesticides or other gunk to wash off or worry about, they will be convinced that this is what they should be eating and they will pay a premium to get it.

This change in thinking was initiated by the "Certified Organic" movement, but we can go them two steps better.

Not only that, we can work shorter hours and use less fuel to provide them that good food.

What we want to do with our land should also be within the naturally occurring succession mode of our land.

For example, on Buzzard's Roost we have a mid-stage hardwood forest.

We are **disrupting** the land by removing many of the **smaller** hickory trees since they are a variety that produces bad tasting, very thick shelled nuts.

They are not good for animal feed or anything other than producing more of the bitternut hickory trees.

The wood is great for firewood, BBQ smoking wood, mushroom growing logs and tool handles.

So what we are doing is removing all those that aren't going to survive under the over-story of Oaks and older, established Hickory trees.

The result will be a more open, **less fire prone farm**.

We will then do the **mainline** earth work to manage the water as it runs off either side of the ridge, working all the way down to the valleys.

The swales and berms will move the water along the entire width of our property, allowing it to soak in instead of just running off downhill.

We will be putting in turning ponds at either end and that too will help control the water runoff.

The swales and berms will also help terrace our property giving us nice sized swaths to plant alternating tree rows and keeping the between terraces for alleys where we will grow our annual crops and build the soil into deeper top soil.

On the north facing slope we will expand the vineyard and plant squashes in the alleys.

Since our land is 900 feet wide, we will be able to plant both fruit and nut trees and surplus will be market crops.

We will also have an area for **Serviceberries** and **blueberries** or **huckleberries**, expand the number of **fig trees, pear trees and Arkansas Black Apple trees**.

To the east of our house we will use the alleys on the south slope for additional **hog pastures**, the nut and fruit trees will be between the fenced alleys to keep the hogs from harming the trees.

Our hogs have already knocked down two fairly large oak trees in one of their paddocks.

Until the new plantings are at least 6” in diameter, the hogs will have to go for nut and fruit drops, this won't be hard for them since the tree width they will be around will be only 6' wide, allowing for lots of nuts and fruit to fall into their paddock areas.

If we get out of the hog business, those fences will come down to allow easier access by the chickens, guinea fowl and ducks.

Our effort load will be about 1/6th of what would be using our original plan.

That will mean we have more time to do other things that we want to do.

It will not be a burden to our "farm sitter" when we go on a trip for a few days either.

Keyline Method vs Mainline Method

The keyline method of water management, as developed by P.A. Yeomans, turns out to be best suited for areas where there are only Tertiary levels of runoff (stream to stream to river (to ocean)).

This is the case in Australia, where tertiary levels are the highest you can find and where Yeomans is from, so it is perfect for that type of terrain.

Problem is, in the Northern Hemisphere and in many areas of Africa, India, etc., there are up to 12 of these levels and it turns out that the keyline methodology simply doesn't work nearly as well as it should.

What happens is that as you run the water back and forth along your contour from pond to pond to pond, coming down the slope, a deep plume of water develops and near the bottom of the slope you get blowouts.

When I first started developing Buzzard's Roost I went with Yeomans ideas, found the keypoint and went forward with his methods.

Our first big rain, the plume developed, blew out and eroded my roadway so bad it became a "Moab" like trail, it was a good thing I have a well-equipped Jeep or we would have been stuck on the ridge until I could fix the washouts.

The **Mainline method** (developed by Mark Shepard) takes into account that there will be many places where one runoff stream hits another and another and so on.

Mainline starts with the mainpoint (very similar to the keypoint and sometimes even the same spot) then it also run out to the sides to distribute the water.

The biggest difference is; where keyline calls for a single pond along each swale, mainline will use two, three, four or more ponds, each at the point where a **secondary flow** could come into play during a big rain event.

As I am replacing the keyline swales with mainline swales (all my swales also have the berm) I am putting in these extra ponds, the water in each swale does not flow down to the next now also.

If these ponds reach overflow, they will sheet down to the next swale, this reduces the rapidity of water flow much better than the keyline swales did.

They are in reality very similar with the big difference being how you manage the water in an overflow event.

Before I started the re-work I would still get eroding events in 1" rainfall events.

Now I am seeing that to get to that point it might take a 5" rainfall event or perhaps more.

Just a week ago we got a storm that dropped 1" of rain in two hours, nothing was hurt, the water hit the swales and flowed all along them, filled the holding ponds and never even filled them.

Previously, this event would have ended in my road getting new gullies or deeper ones.

The difference is because on my land a little trickle at the ridge line will pick up 4 or 5 more little streams of runoff as it heads to the bottom of the valley.

It is all about observing the hydrology of your land and adapting the methods to best fit your situation in my opinion.

The swales are 3 feet wide and 6 inches deep, the ponds are really an extension of the swales and are 15 inches deep at the deepest point.

These are all laid out on a 1% grade, following the contour of the slope and each swale dead ends in a pond, most of the swales also have at least one pond at a secondary key point (where normally a gully might form from spill over).

Chapter 7 – Do We Have to Name it?

Let me start by re-stating that I am not considered a permaculturist by my peers, and I do not consider myself one either.

While I knew Bill Mollison, I was not a student of his.

I first met Mr Mollison way back in the early 1980's; we exchanged ideas of farming methods.

From that exchange, we realized we were thinking the same things, promoting the same things but our methods were a bit different, as were our goals.

I worked for the USDA, consulting with farmers and ranchers. Eventually my methods were considered renegade and I had had enough of justifying my work, so I left the Department of Agriculture.

What I am interested in is Restoring the earth mother to health and hopefully be one of the instigators of a new beginning for Agriculture practitioners (farmers and ranchers).

I also have to goal to show farmers that they can make better money without dependence on "conventional, modern agricultural methods".

Oh, by the way, the group I am now a member of, CEED, E.A.T. which includes Mark Shepard, he is one of the Coaches. Perhaps one day I'll be one too.

I am now, and always have been, what is called a **restoration agriculture proponent**.

I do not "design" farms.

Instead, I come in, observe and suggest better, cheaper ways for a farmer to grow his crops and because he will be using less fuel and tractor time he will see savings of fuel costs and maintenance of machinery along with less time spent doing the work of farming.

He will also end up with a better bottom line of the books.

Occasionally, I get lucky and find a farmer that is open to totally changing up his farm.

Usually this is because they have become disillusioned about farming, or they come to understand that the land will be lost to the family if they continue along as has been done for generations.

When this happens, I bring up what I am talking about here, restoration agriculture, with trees becoming part of the “crop” and water management the first goal, so they aren't spending thousands on irrigation, subject to “water wipe out”, which is when their fields flood and the planted crop drowns.

When these clients are receptive, we first make a list of what they expect and then we make a list of what they really want to happen over the long-term.

This usually ends up with conflicts, and we rehash.

Once we both know the direction the farm will take, we get to the work of water management.

Some farms are pretty easy; they are flat, single drainage sites that take just a few days to get fully set up for the water management.

Spaces for trees are marked at this time and planting begins.

As the trees are going into the ground, the alleys are broadcast seeded with a **mix of different grasses, legumes and brassicas**.

We don't worry about any seeds that get into the tree designated spaces, they will either die or they will grow under the trees, either way is good.

Usually we don't have to make any arrangements for animals to come for grazing, most of my clients have at least a small herd already, so all we do is push them through a space **when the timing is right**, moving them along when they have done their job in a space.

If the farm has an area that is more forest, and if the client desires, we can go in those spaces, take count of what trees are there now, and come up with a way to change it into a more money making area.

Sometimes this means we thin out trees, sometimes it means we will act like a crown fire and kill off everything so we can change the direction of the succession completely (this is really rare).

Normally we find that we can run the grazing animals through for a bit longer time period than normal or we might decide to put cattle through first, pigs through as a second round of grazing, then we can thin the trees that best allow us to plant more of what we want to grow there as a cash generating crop.

One farm now has long term pecan groves with an understory of apple trees around the perimeter of each of the pecan groves.

On either side of those, we have 35 foot wide alleys that grow soft red winter wheat, under seeded with clovers and turnip greens.

What happens is the wheat grows tall, heads out, dries and the combine harvests the heads of grain, leaving as much stalk as possible.

A crimp roller comes through and presses all that straw down, allowing the clovers and greens to grow since now they can get sun.

The greens broad leaves grow and cast shadows on the clovers (a low growing species), blocking out the sun and stunting their growth.

The greens are harvested and now the clovers make a comeback, growing as tall as they can.

When it comes time for wheat planting again, the whole alley is crimp rolled and the seed drill plants the wheat seeds and we repeat the process.

This means that every year after setting up the system we are building soil as we grow the crop, there is no extra effort needed, in fact there is less effort, less money spent since we don't need to buy fertilizer, don't need to poison weeds, aren't going through the numerous tractor passes traditionally used to lay the soil bare just to plant a crop.

Once we get this methodology set up, the farmer can easily see that money not spent is money earned and once those pecan trees get mature enough to start producing nuts, there is an extra crop that only needs harvesting.

What the farmer sees is larger profit margins than ever before, less dependence on irrigation, no fertilizer expense, no herbicide expense and less wear and tear on his machinery.

He also sees more free time he can use to go hunting, fishing, spend more time with family or whatever he chooses to use that new found time for.

Chapter 8

I was talking with a few friends last week about how they should scale their homesteads for producing enough food for themselves just so they could get away from spending so much money at grocery stores.

It occurred to me that their questions were very pertinent to most people practicing permaculture.

Most folks don't really want to become farmers, their main interest is in being able to feed their family’s needs, no desire to actually make a living from growing plants and raising animals.

The reason I started this thread was to show ways to be permaculture farmers, where you make your money from the permaculture farm.

It can and is being done by many more people than were doing the work of farming with these methods even 5 years ago.

There is a need to farm this way, and the more farmers we can get to use these methods, the better.

That is because farmers are in control of much more land than most of the people using permaculture own combined.

One of the farmers I work with uses 1 million acres for farming, another farmer has 150 thousand acres in production and many have their fields set up in 250 acre plots.

This is a very significant amount of soil, now being rejuvenated through their practicing permaculture techniques on their fields.

Does this mean that the techniques I am talking about here don't apply to the person with only 1 acre or less?

No, my clients just operate on the large scale, everything about permaculture is scalable, that is, we can use all the same techniques on any size plot of land we have.

Smaller is easier to manage, all the way around.

If you are working a quarter of an acre, you don't need 10,000 trees to plant a viable forest orchard; you might not even need 10 of any particular species.

Or, you might not need to plant 1,000 acres of grain, perhaps you can plant 100 sq. ft. and provide all the grain you need for personal use.

What is cool, to me, about permaculture is that the techniques will work, on any amount of land.

The important thing is that more people use as many of these techniques as they can.

By doing so we can heal our earth mother by sequestering more carbon in the soil, we can filter larger volumes of air through tree and other plant leaves.

We can capture poisons from the soil with myco remediation, we can purify the water by using reed beds combined with mushroom beds and gravel pre-filters, all in the ground and let that naturally treated water provide our food plants with the moisture they require.

We can use key line or main line water management (depending on where you are on planet earth, which determines which of these two methods will be best suited to your piece of the planet) to soak all the rainwater deep down in the soil.

There it will be available to our plants roots even in times of draught, which our efforts will help curtail.

We can plant tree belts and have alleys between them to grow vegetable crops and grain crops and we can plant all of these spaces with companion nitrogen fixers that will shoot up after we have harvested our food crop and crushed down the plants once we have removed the actual crop, letting that material rot back into the ground just like nature does in places where humans are not residing.

When we work with nature, instead of trying to make nature work with us, we actually heal the earth and reverse little parts of the harm human existence has put upon the earth mother.

When we use her techniques, add in our needs by making small changes instead of stripping the soil bare in the name of agriculture, only good things happen.

When we do as little manipulating as possible, we don't have to spend hour upon hour taking care of the crops we plant, just so we can have a good harvest.

We then find out that we have time to do things that are fun to us, that remove stress from our lives and both of those make us healthier.

How cool is that? We heal the earth, harvest our food and have fun time.

As we have our fun time, trees we planted are growing and producing fruits and nuts, vegetables are growing to be harvested and eaten, aquatic animals are doing the same, and we are reading books, cleaning our house, playing music, building furniture, and any other endeavour that brings us happiness.

Some of us might even be building a future that our children will decide to carry on after we have moved into the spirit world.

This is something that we have to with a sense of extreme urgency.

We have worked hard as humans to do as much harm as possible over the last 150 years and we have had great success in killing the planet our lives depend on.

We have to get as many of those Big Ag Farmers moving to the methods and techniques of permaculture as fast as possible.

For if we don't, we do not stand a chance of bringing our earth mother back to health.

It is the reality of our planet, little bits are good, but it would take billions of little bits to have the same healing, recovery effect as a hundred thousand huge hunks.

Right now, China is killing a million acres a day, taking all life from that land and leaving it barren.

Then they move on to the next million acres to repeat their destruction and there is not a country in existence that isn't doing the same thing on the same scale.

Corporate Agriculture and the other corporations that support the “New Agriculture” do not want to be part of permaculture simply because it would put them out of business.

It is sad to think that all they see has to do with dollars spent on their products, but that is reality.

Governments will not force those corporations to do what must be done because they would lose tax dollars and they have invested heavily in those corporations’ not as financial investors but for jobs and taxes.

Government is not about to change enough for the planet to survive, it is corrupt and out of control of the people because of apathy by the people governed.

Conclusion

I have, for the most part, covered some of the methods and techniques that can be used to actually make a living by farming within the methodologies of permaculture.

I've also mentioned that in the here and now, most of the people practicing permaculture is not practicing “Farming” in the true definition of the word.

This is slowly changing, one farmer at a time in most instances. This slowness to change is understandable when you study farming in an academic way.

The problem the world has is that this snail pace rate of change has to accelerate or humans will be hard pressed to survive the current climatic changes.

Permaculture is only one of the methods that can help heal the earth, others include, restorative forestation, holistic grazing and diversified farming.

When we add all of the many new idea methods together, we can see a trend towards bringing the earth to a better place.

This is good, but what we really need to understand is that by adopting the mono crop methodology, we have destroyed the way nature worked prior to our involvement and since we know that no human can actually win the fight against nature, we have to adopt the natural methodology to insure we have a future on this planet.

Even while many of us are doing our best to make the changes in agriculture necessary to ensure that our planet will continue to sustain our species and all the other species that live here now, climate changes are occurring that will soon make our efforts harder to accomplish.

Climate change is here, we helped it come along but we are not solely to blame, nature is a circle of life, changes come along in predictable cycles.

Just as the tides of the oceans rise and fall, so too does climate cycle. As an example, Ice ages occur every 100,000 years (at least this is true over the last million or so years), prior to that, there were no ice ages.

Currently CO2 levels are higher than any time since the last sabre tooth tigers lived, and they continue to rise.

This is good for plants that use photosynthesis to make food but not for any of the animals, the great snow packs, glaciers and the polar ice packs.

The current summer thaw cycle is expanding and lasting longer every year, which means the ocean levels are going up as fresh water stores, held in the polar ice, are melting into the seas.

The currents that move the water of the oceans around, keeping our temperature averages fairly stable are slowing in speed.

We can see this by how short winters are becoming, but at the same time they are shorter, they are also more severe.

Snow falls are larger, rain storms are getting more intense with larger super cells spawning tornadoes. What can we expect in the future years?

More intensity in storm events, longer and hotter summers, shorter and more intense winters along with more rain in some areas and less rain in the areas that are on the fringe of desertification areas.

Many Scientists are concluding that we are heading into the next ice age; theories are great except when they are about the doom of human life and seem to be on the verge of becoming “proof”.

Until we can globally reduce CO2 emissions, things will only be getting more interesting; in the ancient Chinese blessing sort of way “May You Live in Interesting Times” (most Chinese I know refer to this as a curse not a blessing).

We must change our current mind set from one of selfish greed (I must make money and the more the better, no matter how or what the cost) to one of selfless care-taking of our planet.

One way to see just how long the current mind set has been going on is to look back in history. As far back as when Lebanese Cedar was the wood of choice for grand buildings this destructive, greed driven mindset has been evolving.

It is unfortunate that this thinking worked so well for so long and that no one thought much about ecological change except by using monetary gain to measure success.

There has not been any thought of succession or whether or not there might be hidden consequences waiting to raise their dragon heads to bite humans in the butt.

We changed every place we set our feet down.

Example, the US West coast used to be covered in giant redwoods and sequoias, now there are two small plots of land protected by Laws making them National Monuments to make sure these few old giants is around for us to gaze upon in utter wonder at their age and size.

These trees once ranged from Washington State all most all the way to Mexico.

Now they are all gone but for the few in the sequoia national forest and the stand of the giant redwoods.

Humans wiped them out for the money their wood represented.

It has happened before and I can only hope the same never happens again.

I have been to Lebanon, back in the late 1960's, there are no Cedar trees there that could be harvested for lumber, much less timbers.

When I asked about the Cedar trees, my guide could not tell me when there were any left.

He did tell me that once there were great forests of the famous Lebanese Cedars, but there is not one of these trees left.

One of the reasons Europeans made the sea crossing to turtle island was the decimation of their own forests and fisheries.

They needed wood for building and fish for food, having reduced their own forests and seas to barren waste lands.

We are supposed to be care-takers, not just takers, it is time to change but how easy will that be when we have been practicing the current mind set for so many eons?

The answer is that it won't be easy but it has got to happen, for if it doesn't, we will cease to exist by our own doing.

I wonder if that is suicide or is it geno suicide? No matter, we won't be around to worry about it.

I have experienced this mind set all my working life and even prior to that.

I have lived in Europe as a child and I have seen areas that used to be part of the Black Forest.

I went to see two famous forests in England that were more like small stands of trees, most of what used to be Sherwood forest was gone, turned into farmland by removing the trees.

I have seen that almost everywhere humans have lived, they put the land either in constant disruption or they poison it so thoroughly that nothing much can grow in it or they cover it with concrete and asphalt.

Never do they leave it in a state that can provide much of anything for them that could be called sustainable life.

It is our doom should we fail to change enough, fast enough to save that which gives us life.

Farmers need to change from their antiquated, selfish mono-culture methods and start diversified planting, so that one space can produce several crops, each in succession, without the need of disruption for each crop.

When they finally do, they will notice they use less fuel, fertilizer, herbicide and pesticide than they think possible.

Those that have tried the change continue to change and they see profits for their new way of thinking and doing.

Those who don't try the change in methods, continue to spend more on fuel, more on fertilizer and more on sprays, just to get the same amount of crop from their lands.

Part of the blame has to go to the governments that subsidize those farmers who resist changing their methodology.

If governments didn't continue to pay out tax dollars so the resistant farmer could think he was making money, then all farmers would either make the changes needed or they would go belly up.

Hard times require hard decisions and we now must face the realities of the perils of climatic change.

At the same time we must embrace new methods that can pull us out of the impending disaster.

Permaculture is one of the new methods and it up to those who have learned how to use it to become part of the paradigm that must spread the word, every way we can, as fast as we can.

The only way I see the needed changes coming fast enough is that the people become scared enough.

Then they will run and demand the changes happen now.

At that same time, those who use farming for their livelihood have to see that they can make as much if not more money by using the “new” methods.

One way might be to point out in vivid videos that we can still have another “Great Dust Bowl” event, and in fact we are ripe for a second coming of that type event.

Fortunately, every few years we gather more influence through practitioners becoming more in the public eye.

I hope this is happening fast enough, for if it isn't, we are quite literally, out of time.

References

This writing as it appears in permies.com forum written by Bryant Redhawk and other contributors.

Permaculture Apprentice: How to Design Your Perennial Farm and Your Life – Insights from Mark Shepard

Tcpermaculture.com: An Introduction to Keyline

Ncat.org: Marketing, Business & Risk Management

Smallfarm.org: How to Start a Farm Business