

**PERMACULTURE FOR FIRE CONTROL
&
PERMACULTURE FOR MILLIONAIRES**
BY BILL MOLLISON

Pamphlets VII & XV in the Permaculture Design Course Series

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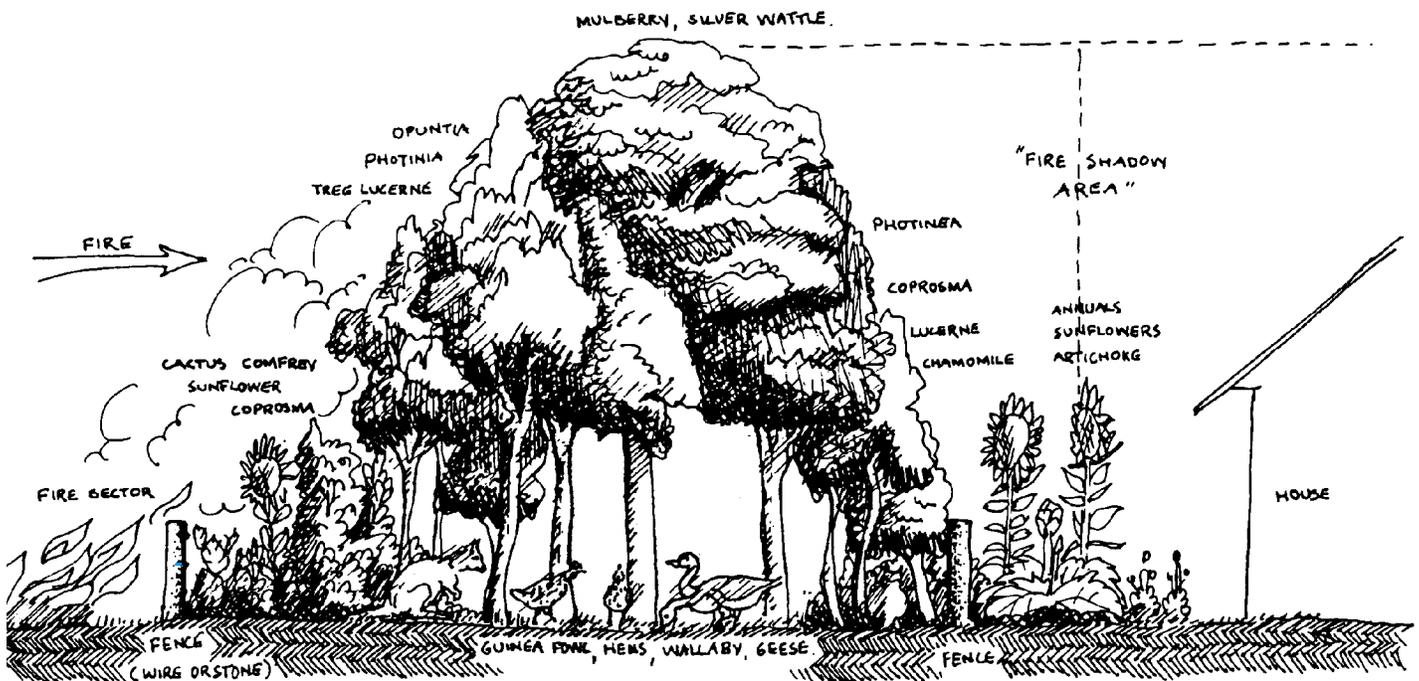


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Permaculture for Fire Control Permaculture for Millionaires

These are the seventh and fifteenth in a series of 15 pamphlets based on the 1981 Permaculture Design given by Bill Mollison at The Rural Education Center, Wilton, New Hampshire, USA. Elizabeth Beyor, without compensation, undertook the transcription of tape recordings of the course and subsequent editing of the transcripts into 15 pamphlets. Later, Thelma Snell produced the typescript for all pamphlets. Lisa Barnes laid out and made mechanicals of the original editions. More recently, Meara Culligan entered all 15 pamphlets onto computer disk. I have added some further light editing to increase the readability of the pamphlets. In deference to the monumental task of love represented by Bill's assembly of the Permaculture Design Course, and by the subsequent volunteer efforts leading to these pamphlets, Yankee Permaculture has placed them in the public domain. Their reproduction is free to all and highly encouraged. The pamphlets are now available on electronic media. See our order form or Yankee Permaculture Special Order Paper #27 for details.

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For Mother Earth

Dan Hemenway, Sparr, Florida, USA, June, 2001.

Sixth edition

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Permaculture for Fire Control - VII

Fire in a landscape is a subject that I want to treat very seriously. It is a common hazard.

Fire has a periodicity specific to the site. This fire periodicity depends on two factors: First, the rate that fuel accumulates on site. This is a critical factor. The second factor is the amount of moisture contained on site. Any ridge top is far more fire prone than its valley systems. Typically, the vegetation of ridge tops may even be fire-dependent, with species that germinate well after fire burns the ridges. In the valley, on the other hand, you may get species that may be killed by fire, but which burn very suddenly. While ridges are more fire-prone than their adjoining valleys, so are the sun-facing sites more fire prone than their shaded slopes.

It is possible to work out the fire periodicity on site by examining the cross-section cut of an old tree in the area, or even from historical records of fire in the area. With a rainfall of 30 to 40 inches, a catastrophic fire will occur about every 25 or 30 years. I am not talking about a local spot fire. I am talking about a fire that races through a large area.

A lot can be done to change that cycle. Advantage is gained if it can be delayed even one period. The less a site burns, the less it is likely to burn, because there will be more humus and more moisture incorporated into the site. On the other hand, the more it burns, the more likely it is to burn again soon. This is because fire removes a lot of moisture-retaining humus and kills a lot more than it consumes, resulting in a fire prone litter build-up. So the periodicity can change to a very short term if an area continues to burn. Areas that naturally experience fire every thirtieth year will burn every eighth or tenth year, once they are being burned at shorter intervals. Fire is a very destructive influence.

In permaculture landscapes, there are sequences of defense that you must throw up. What you must do is reduce fuel. That must be the primary strategy. You can do this by creating non-fuel surfaces, such as roads and ponds, by constructing swales and doing pit mulching, and reducing fuel by means of browsing or grazing.

It is very simple to protect the house site. You only need a hundred feet of non-fuel systems between the house and the forest. That is not very far; it is a raking job. Select plant species for this area that have fire-resistant characteristics, such as very high ash content, a very high water content, very low total bulk, and which grow densely. The ice plants, the Coprosmas, some of the thick-leaf evergreen plants, whose litter decomposes very fast, have leaves that are highly nutritious and don't last very long on the ground. A list of plant species useful for fire control in any area varies with the climate. Fire departments in fire-prone areas are often able to make recommendations.

Some trees, particularly the pines, and many of the leaf species, are litter accumulators. They form a hard and volatile litter that simply builds up and carries very large ground fire. Do not use plants to the fire danger side – the downhill side – which have high volatile oil content. Eucalypts are a positive no-no, and so are pine trees. Both are to some extent fire weeds. Both carry cones and hard fruits that often don't open until fires. After fires, you will see a widespread covering of new growth from the seed of these trees. That is what they are waiting for, a fire to enable them to extend their range a little.

So you halt fires by working from the valleys upward with plantings of low fuel vegetation. Re-establish the rain forest that would be on the site if it did not burn. Bring in a lot of species that naturally occur in the valleys.

Now let us look at the fire itself. What does the fire do? It doesn't burn much. It burns a few leaves, and perhaps buildings in its path. The real danger of fire is radiation. Four hundred feet before a fire, your hair catches alight. Two hundred feet, your body starts to split and your fat catches alight. At 100 feet, you are a torch. Radiation kills birds hundreds of feet from the fire. They just fall out of the air. Fire kills pigs very quickly. They don't stand radiation. Goats survive quite well. They just lean into it. And human beings are good at surviving a fire because they dodge about and hide behind shadows.

So we need to throw fire shadows over the central part of the system that contains our client. We do it with earth banks, and we do it with trees like willows and poplars that have high water content and that throw out a black cloud of steam. They don't let radiation through. So on many sites that you will design, where fire will be a future hazard, you pay a lot of attention to setting up fire-protection. In California, almost every plant depends on fire, and all have high oils, because they have been selected through a long history of fires. Greece was once a land of wet rain forests, with enormous oak and columnar beeches. It has become a skeleton of its former self, and its fire frequency is up and up. Now you really can't burn Greece because the dirt is burned, the plants are burned, the hills are burned, the rocks slip down hill and you can't burn rocks. The whole of the Mediterranean and much of North Africa has reached this condition.

What we must do is start reversing the process. If your client is in that chaparral, then you must pay particular attention to fire protection. You will have to give him somewhere to go to when a fire comes. You really can't save him on the surface. So you dig a T-shaped or L-shaped pit and earth it all up. It can be a length of road conduit, earthed over. Then your clients can hop underground and wait it out. When they are out of the radiation, they are out of trouble. In Coventry and other areas that were burnt in war, there were fire storms. Standing in a fire shelter, I have watched the glass pouring out of the windows in my car. It is hot out there, you think. It melts out the bearings in your car. You can't drive. Always duck behind things in a fire. Just get out of the radiation. And keep your mouth shut. Don't breathe. Otherwise, your lungs burn out. So if you don't breathe until you get behind things, you are all right. The main thing is not to be in direct radiation. Often you can dig a fire shelter into a bank with a backhoe. In some areas, this work of a few minutes may be the critical factor for survival.

Otherwise, give good advice to your clients: "Go behind the house and sit down 'til the front of the house is alright. Then walk around to the front of the house, because the fire will have gone past." Instruct clients about the need for litter reduction on the ground. Give them good instruction in pit mulching and swaleing. If you have a very bad fire site, construct a few big swales, and cover the swales with old carpet so that you get a very fast rot down. Put in a whole lot of plants that are quite fire-proof. You can stand behind a Coprosma, and you don't even feel the fire, just a hot steam bath.

You can take advantage of the normal attributes of the raking animals, such as chickens. They break up that ground litter and mix it with oxygen so that it really breaks down. Short grazers, such as sheep and wallaby, on the fire side, will reduce the standing litter to one inch, and you will not need to worry about ground fire.

Just experimentally, I have lit around mulches, and they are not a risk. Sawdust, too, is good safe mulch. Actually, you may get a half inch fire across the top. It starts to smolder burn,

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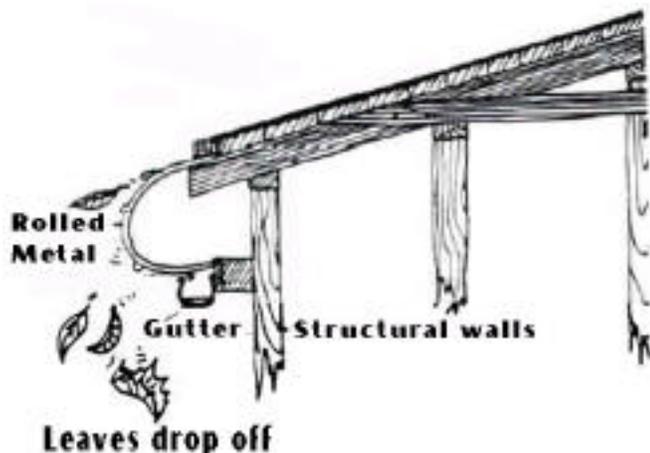
but it doesn't go anywhere. It can be quickly put out. You don't need to worry about mulches.

The primary protection in fire is to have good sprinklers down hill. If you can turn on a couple of those, you can sit on the front verandah and enjoy the sight of water pouring over the landscape before the fire gets there. I've seen water from the fireman's hose coming six feet from the nozzle and going up in the air as steam. If, before a fire gets there, you've turned your sprinklers on, and the ground is wet, the fire won't cross that ground. If the fire is already there when you put the sprinklers on, then the water doesn't get very far out of the sprinkler. So you must start your defenses before the fire.

Sprinkler systems on roofs are very critical. A house is lost when ashes fall all over the roof, slide down it, prop against chimneys and fill gutters. The wind is blowing; the heat returns in under the roof and catches tar paper and insulation, and starts burning from the ceiling under the roofing. That is the way 99% of houses ignite.

The safest houses in fire are wooden. They have a 13 to 15 percent higher survival than stone or brick, which is a surprise, of course. In analysis of some houses of equal risk that didn't survive, the brick outnumbered wood. Almost without exception, stone houses are taken by fire. Stone transmits heat rapidly to the inner surfaces. Bricks are equally fast heat transmitters. You can burn a wood house with a blow torch if you go around catching it in a lot of places. But a wooden house is very resistant. Basically, wooden houses won't transmit heat through the fabric, and their drafting systems are better than in brick houses. White painted wooden houses, and paint generally, anything that will reflect radiation, is a protection.

When you are planning for fire, you must specify the use of screens and fire hardware mesh, so that large particles cannot enter the house system. The gutters should also be screened. Wherever you are experiencing snow, fire, or heavy leaf drop on the roof, it becomes necessary to put a rolled-under section on the bottom edge of the roof, and put the gutter back under, below that. Leaves will fall off. They can't get in the gutter. Snow will slide off. When snow melts, the melt will go into the gutter. Fire ash will slide down and fall off. It won't get caught in the gutter, either. That is a good device, and it can be fitted to existing roofs.



Rolled Roof Section

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Put a monsoon sprinkler on the ridge of the roof. It is only going to operate for a short period while the ash is falling. It will be the most sensible fixture that you can put on a house. The tap to it should be outside. Turn it on, and the whole house is being washed down for an essential half hour. The roof is continually washed, and the gutters are flowing. For this, you will need a gravity system, and it needs to be yours, because if it is part of a public system, every body will be drawing on it, and, likely, the system will be inadequate.

You must say to your client, "Well, look, we will give you a few simple specifics in housing design, and you must watch how you lay out your roads and ponds. That will give you a much better chance of survival." Also, advise your client about how to proceed in case of fire.

Fire builds up to high intensity about 2:00 to 3:00 p.m. Inevitably, the people at home are people with young children. Mostly, they won't have a vehicle. They are a vulnerable group, and they must be told what to do. If the fire comes from this side, they have to stand here with their woolies on, woolen jackets, blankets over them, and a bucket of water so that wool won't burn. Then go into this little shelter that we have provided and have a drink of water. We should try to get water in there. It's worth it. Just walk in there and sit down, and leave your woolen blanket in the water. Dig that shelter into a little hill just at the back of the house, normally away from the fire, on the slope. Go maybe six feet deep. Open your back door, and hop down into your little root cellar, which is also a fire shelter. We must look after the people in ways like that.

Advise people never to jump into water in fire. That is another no-no. There is no oxygen left in the water and they will faint straight away. It is like painting somebody's body. We breathe a lot through our skins. The fish already are dying from oxygen loss before fires ever get there. The people in the water will faint and drown. So jumping in the pond is a no-no.

In some areas, we will totally ignore this whole business, because for most of their history, those areas never burned. The prospects of a sweeping fire are remote.

Even in humid climates, high forested areas in the continental interior are not invulnerable to fire. When things dry up, and the wind whips about at 50 to 60 miles an hour, just a backfire from a car can set the whole area aflame. Fire travels about 400 miles an hour. There is no running away from it; no driving away from it. When fire starts, it spirals up, and increases in breadth at the base. You will be looking up at the sky, and there is half of somebody's house, way ahead of the fire – an incredible sight. You will be looking up at a blue sky, an upstream of smoke, and there goes that burning house, a great fire in the sky. Then it drops. At that point another spiral starts up. These big spirals go up, taking everything that is burning with them, then drop it out, to start new spirals. A fire will cover a thousand square miles in an hour. So most people who are in it are in it. You can't go away from it. You have to just hold your place and sit it out. Don't start running. Don't try to run ahead of it. You have more chance of surviving a fire if you run straight at it. If you run away from it you are dead. You have to just hold your place and sit it out. Don't start running. You can't drive your car, because the petrol will evaporate. Unlike Hollywood, gas tanks never blow up; cars never catch alight; only the tires do.

The sensible thing to do with high explosives, like drums of fuel and the like, is to store them away from a living situation, have them in separate sheds, a bit dispersed. When one ignites, it doesn't ignite the others.

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Don't put your poor client at the head of a converging valley in the saddle. Don't put your client where you would normally put an efficient windmill. Don't put him where the ridges converge. No, no!

I witnessed an example of landscape architecture in an Australian fire-prone site. I was driving by this place, and I looked at this house – I couldn't believe it! There was an acre of fire-promoting vegetation just across the way, converging eucalyptus trees with pampas grass. It had been constructed by a landscape architect. While the aesthetics were reasonable; the function could be fatal.

So in my mind, function always comes first, then aesthetics. A good function is often a very pleasing aesthetic. He could have had a couple fire banks up the driveway. We could have had given him a pond and, just below it, a Coprosma hedge.

Construct the pond in front of the house, with your road beside it. The bank of the pond should rise toward the fire side. You will find that there isn't any conflict between good fire control and good placement of your elements. But if you don't have the initial planning, all sorts of things can go wrong.

Permaculture for Millionaires - XV

I am going to give you an anecdote.

When I was in Toronto at the Futures Conference, one thing I discovered was that the people critically interested in futures are those people who are making large investments. It wasn't a meeting of hippies. Hippies were in the two percent minority. This was the heart of Harbor Castle Hilton Hotel. I was in a pair of thongs, the only barefoot slopping in there. Here were investment bankers mobilizing their capital, some of their principals – not often many of their principals. These are people who deal in futures. Every businessman has a little clique around him. He has long term friends. If you meet one businessman, you have contacted somewhere between ten and twenty, intimates who are commonly ringing up and are doing deals, and who have had long associations. They are old friends.

I was one of the few people there who were giving anything positive. I think I was the only person there who was giving any indication of a future that you might be able to control. There were people there who were proposing ideas out of my control and, I'm sure, out of yours. There were proposals for a future that would need a huge amount of plumbing, technological fix. Whereas, I was indicating futures well within every man's capacity.

I gave them the example of Babassu palm.

It is within every investor's capacity to organize the development of fuel supplies from biological materials. I gave them the example of the Babassu palm. The Babassu palm grows under the worst conditions on the exposed coast of India. These palms produce a high sugar sap. It comes down to a harvest of about ten to twelve thousand liters of fuel per acre annually. And they can be heavily intercropped. They furnish very good shade cover for intercrop; and there are vast areas in India in eroded seaside condition where these palms can grow. Besides, the palms give – and for centuries have given – a very large proportion of the building and thatch and carpeting material. So the situation is ideal, really, for an enormous energy production coupled with food, and the material for people to build their own dwellings. For they are building entire buildings out of thatch, and they are appropriate dwellings, because that thatch is absolutely water tight, low mass, and ideal for that climate. It is extraordinarily good for dwellings.

So we can do this. It is certain that we can put in something better than an oil well for an indefinite period, and with far less investment capital. Now there are dozens of these situations where we can operate, and they lie in all sorts of energy realms, including things like buffalo gourds and yellow trees in deserts, which are eventually going to out produce an oil well.

So people were listening pretty hard. What we want to do is to enable these people to take what they want out – the palm juice – and to provide a base level living for thousands more people. The processing is fairly minor. Intercropping within the whole situation would make the palms healthier, and the people living in there and attending this operation would get all the secondary and other spin-offs.

I am trying to sell the rich the idea of commonwork.

What I am trying to sell the rich is the idea of commonwork. It is functional stacking. The original meaning of the word is to put one painting on top of another. It is like laying on colors. What we are laying on is functions.

Now, for instance, if we get a large company to lease a large part of the Indian foreshore from the state of Maharashtra and the start a Babassu palm production system, we would pay close attention to the ground. What we would set up would be an excellent sugar-palm production. This would be rich valley soil, and we would get a little keyline dam system going up along there. I worked out that sugar-palm system so the whole thing would be automatic harvest. No labor in harvesting except cutting the flower stems because the liquid is your saps. All we do is set up a whole system on an uphill slope and run it all down to one point. Then, in here, we would have other functions within the toddy sugar-palm system. There would be good places to live; they can graze cattle; they can take green-leaf *Desmodium*; they can take production from a bean crop, to the advantage of the health of the toddy palm. We can get in honey production, too.

All the investor wants is to earn a return.

We then have people who are looking after the toddy palms. We produce a crop. We produce honey. We practice aquaculture. The investor can let all of these go. All the investor wants is to earn a return from the alcohol production capacity of the site. All the other people own these other capacities. You would be surprised how many non-interfering overlays you can get on a site—overlays that will hold families in good health while maintaining an unending alcohol production.

Now the investor is not objecting to this, because he didn't want a fish production capacity; he didn't want a bee production capacity, and he didn't want grain crops. So these are the sort of propositions which businessmen are very willing to discuss. They don't even need to own the site. What they need to own then, is the right to the alcohol. As Gulbenkian says, "Let the meek inherit the Earth, just so long as I have the mineral rights."

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So what is the logical way to go about this? Put the site into the Permaculture Institute. Then everybody receives the eternal right to that part of production in which they are interested. The Permaculture Institute holds and manages rights. Now that's a good proposition! Because what are they getting? Very low overhead, enriched crops, marvelous appearance in the eyes of the world – Look what we're doing here! Everybody is doing exactly what they want to do. Here are happy people who are keeping their situation healthy, and which some supervising designer, probably on site, trained in permaculture principles, is making sure it's working. Every one of those palm trees takes little vanilla orchids. So the permaculture designer starts stacking in, and he gives the care of the vanilla orchids to yet another group.

The rich don't have anybody to tell them what to do.

I see no reason for that not to happen. But what the rich don't have is anybody who can tell them what to do. I pointed out that they are not immune from acid rain; they are not immune from environmental disaster. They have no real desire to be moving among dead lakes, in a world that the wood chipper has stripped of the last of its forests, a world in which humankind is stranded on a naked rock. They own that they worry about it. But there is no leadership. They don't know where to look for leaders. They are thinking of funding schools to train people to be leaders. There is nobody to tell them what to do about the environment, how to handle this situation, give a businesslike, reasonable proposition. Nor is it possible to link to the alternative, because the alternative is not businesslike. The alternative has set up no structures that can integrate with ours. Now we have a structure. Here it is.

They understood. They can work in there with their banks; they can work in there with their investments. We can give spare lands over to them, of which we have several million acres that we are not using for this or that.

So we were the first people they ever met who were really alternative, really had ideas, really could suggest how they could invest their money, and who had a structure to which they could link. They just can't be running around themselves as individuals, or sending out people to try to find out how to link to the movements that are going on, and how to work with those movements to make a beneficial interface.

Dirty money!

Now there are those who say to us, "Don't go with them, it's dirty money." But then, there they are and here we are. We haven't 10 years to sort it out. It's war, or it's cooperation. For me it's going to be cooperation because war doesn't work. Opposition doesn't work. War replaces one lot of oppressors with another lot of oppressors.

There's no opposition.

There is no opposition in high echelons. So don't go looking for opposition; there is none. There is a high capacity for information gathering very rapidly. If we have data on acid rain, they can get it quicker. It's just that they had never thought to look. You give them that data, and say, "Go check it for yourself. Don't believe me." Do you know, this group can have it checked in maybe four days and get a high impact statement that is absolutely frightening? All they need to do is tell their very bright secretary to do it, and she, maybe, has a degree in biochemistry. She taps that acid rain, man, and brrrrrrrrrrrr....

I said, "Look, I don't want you to believe me, but I tell you what – I'll give you four areas to look at and let you make up your own mind as to whether you have a future. Look at soils, forests,

pollution, and acid rain. You look there." We are not meeting any opposition. What we are looking at is complete acceptance, acceptance of a real situation with a methodology to which the investor can link. That's the whole situation. That's the sort of methodology we are working out for them. It is a valid methodology.

Companies are basically immortal. You can talk to a company about putting in a 70-year investment. They look at very long term investments.

Because you just can't turn off all coal production, there are two ways you can work on it. One is suppression of pollutants, and the other one is very rapid generation of a vast resource to replace coal. That's got to be biological. Frankly, I also think that we must go toward the decrease of energy use. You might be moving toward a rapid development of biological resources and at the same time assisting in the decrease of energy use.

When we get to the end of that cycle, maybe nobody is making much money; but look at the money Corning is going to make out of your attached greenhouses. So you can spot in these futures, and these are real futures. Capital can be switched to energy decreasing modes; no problem doing that.

Nobody is informed.

But the investor doesn't always have good advisor in these fields, either. Their own people are unequipped to advise. They are mainly graduates of economic schools and management schools. Those who employ them are for the main part people who inherited money. So nobody is informed. As soon as their vision widens to a comprehension of the future, they may say, "Where can I use what I've got?" or "Where do I fit into this?"

However, there is one problem. It's easy at the top to get these agreements, but that person usually has a set of underlings who get on with the actual work. Now that's where you strike trouble. It's exactly at the level of implementation that you strike trouble, because underlings are in the sort of desperate financial position where they are always looking out for their own corner. They don't want some parts of change, because there is no corner for them, no way they can continue to carry out the sort of operations to which they have become accustomed. For this reason, it is the principals, rather than the underlings, who must become involved in large scale permaculture conversion.

Yet they must have assistance. What we need is thousands of qualified permaculture designers, capable of handling the implementation and managerial aspects. To set up these permaculture systems on a scale of two or three million dollars investment capital, or two or three billion dollar investment capital risk, will take many designers full time for many years to adjust it and tune it and extend it.

It is worth doing something that size, for that is going to be effective as an example. The investor will be able to say, "Look! This year we have water in, and we have apricots growing around the water, and there are now ten families living here that weren't here before. This water stimulates the growth of palm trees. In seven years time we may be getting crops off here and here and here. Just look at what we are going to get!

And we are seven years ahead of everybody else!" It is a 10,000-liter an acre business, every year. With 500 acres of that –What's that worth compared to a liter of petrol? You have a \$5,000-an-acre business. So 500 acres of that is a 2.5-million-dollar proposition, and there are thousands of acres of it –thousands of acres with presently not another thing on

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them except starving people, a few dying cattle, and a few pariah dogs.

Although it might be possible to shift 10, 20, 30-million dollars capital across within a month or two, who, who is going to oversee it? For this, you don't want some inspired person who wants to do good. You want a thoroughly competent person who knows exactly what to do. So we are trying to train inspired people to become competent. You can't train competent people to become inspired; but, again, we might well just do that, too.

Now there are many, many of these propositions that are of great interest to me. There are large areas of waste land, of desert, and all of which have a fantastic potential for production. In the Australian desert, land can be purchased at maybe \$120,000 for a 700 square miles, or \$200,000 for 1,000 square miles. In such areas there are probably 500 miles of excellent date washes, without anything else. Again, an enormous output of sugars. And that still leaves most of your area really untouched.

At the same time, an equal part of the investment capital should be directed toward energy use. Do you know what we need in deserts? We need sail freighters. We could sail any desert in freighters, and large freighters, too. All we need is a hundred foot wide strip which is sown down. All deserts have constant winds of 15 miles an hour, blowing all the time, and enormous loads could be sailed across the desert and straight to the coast. Everything produced in the desert is self-stored. It is in dry storage. So at the same time they are developing date production, we want them to be building the technology that cuts out the 600-gallon diesel engine tank, and the highway, and the truck – these things consume a lot more energy than is necessary.

It doesn't worry me if the investor doubles his money, providing we can go on doing what we are doing, providing they leave behind a huge number of people in charge of the land. In the end, you see, what you have is levels of function. All the investor buys is the product in which he is interested. The rest of it is the people's. That is all an investor is interested in when investing in an oil well – just the oil.

The cheapest way to make a profit out of a forest might be to go and cut it down, chip it and leave. That's happening. It is happening because people aren't persuaded that such a course is a deadly action. So information becomes vital. It is necessary to get this turned off. The man going to Borneo, wood chipping it and running, isn't usually an associate of these investors. They are simply providing money at interest to fund his operation. They are handling his account. When the people providing money for these operations become convinced that this sort of thing must stop, they can take that man out of there within two or three months, just by slowing down and drying up the flow of money. They can stop that operation without doing anything that is illegal, no marches, no fuss. Now that is all possible. Even the Mafia has to route money through financial systems. If you have a lot of allies within those financial systems, then you can stop certain operations much faster than you can running around and sitting down in front of chain-linked fences and getting arrested. But there must be a lot more of us at it. What we're in for is a persuasion job.

Put my thongs under the bed.

Some of us find all this enormously terrifying. It can throw a person into totally unaccustomed conditions. You're up 28 floors off the ground. Everybody is dressed smart and rushing in all directions, talking millions of dollars like mere pennies.

The butler asked me, did I want to have my clothes laid out? I said, "Yea, put my thongs under the bed." That sort of thing is going on. You have private planes running you to and fro. I wanted to have a look at some palm trees. The plane is chartered to take me flying up the valley and land me, collect me some seeds, and bring me back.

We can link to any multinational.

These people must become sold on what we are doing, must become excited about this sort of thing, convinced that it is a good thing. The beauty of it is that we have a system set up by which we can link to any multinational. Now you can take on amateurish methodologies that do not work and have no outreach at all. Or you can take on a methodology that they know, and which suits their financial and money transfer operation extraordinarily well. That means large money for operations there in India. And the spin-off benefits from those operations they can pass on to the people of India.

The world is made up of two sorts of people that I approve of. There are people who stay home and look after their house – I approve of those. And there are the people who are world-shakers. I approve of those, too. What we are dealing with here is the world-shakers.

We shouldn't be running around on the face of the Earth doing silly things. We should be centering in so that in two years time when you look at the globe, see what we are doing on the globe, it will look as if a lot of nuclei are all joining up. Everybody will be enjoying this. The financiers will be enjoying it; the people in the occupancy will be enjoying it; we will be enjoying it. It seems to me that this is where many of us ought to be heading if we have any capacity at all.

All that we want is to rapidly get reforestation back on the Earth.

There are these very large cattle and sheep ranching operations, and, being scarcely financial, they are cheap. The people who started up those ranches got the land for nothing, or for a shilling an acre, or ten cents an acre. They stocked them with half wild cattle. The sod went off, trodden into the ground. To buy that land now, with 400,000 cattle on it, you will never make money. So what we must see in property is a totally different function. It is essential to get all the cattle off those properties. In all of Australia, they probably don't produce as many cattle as in Essex in England. Thousands of cattle die for every one harvested, and if the market is no good, they don't harvest. We need to get these very large areas under control and very quickly. In one of those areas it would take ten of us to even see half of it, let alone direct operations.

Show that it can be done.

Our job is to make resolutions in conflict, to set up social meetings between people who have ideas and skills, and people who have the power to move things. Let's get a large section of these arid lands, sell the commonwork idea and get cracking out there on real arid land agriculture that counts on its own rainfall to make production. Show that it can be done. Then we've done a good thing. We give them all their money back. They have good real estate that we have substantially improved, and we have happy people all over the place carrying out functions. I have two Australian aborigines who are superb desert nurserymen. That's the sort of consultants we want on those jobs.

