



# **EARTH-MAGNETO METHODOLOGY IN AN ORCHARD**

**REPORT 2011-2021**

**Declan Kennedy  
with  
Jörn Strauss**







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# 1 Permaculture at the Ecovillage Lebensgarten

PaLS (Permakulturpark am Lebensgarten Steyerberg)<sup>1</sup> is a research and demonstration project as well as a food security project for the members of the Ecovillage Lebensgarten Steyerberg<sup>2</sup>. The agricultural and forest areas together with the water and energy harvesting create an integrated research model project for new agricultural methods.



Figure 1 – PaLS on the left side of Lebensgarten

Our aim is to show to an interested public that quality food for the market can be grown on very poor sandy soil (18 to 25 points on a 100 point German soil fertility scale) in the northern European climate. This is made possible through soil improvement and innovative planting methods. Using a relatively new organic method called "Terra Preta" PaLS transforms waste plant material, biochar and fermented urine into high quality soil. This experiment alone contributes tremendously to long-term soil improvement.





## 2 Motivation

Back in 2001, the Kennedies, the Kreutzers and the Zen group from Lebensgarten had just bought the 17 hectares of open land and forest, adjacent to the main property of the ecovillage and connecting up to the north with the plot where the original permaculture project had been laid out on less than 3 ha. in 1985. Sitting with their neighbouring farmer, the step-brother of the former owner, they brain-stormed the myriad of ideas that could be implemented on this huge piece of poor quality land.

The question of fruit trees came up. Our farmer friend warned, that his and his father's experience, suggested that such trees would not grow well nor produce fruit if planted in this mostly fine diluvial sandy soil. The cultivation of fruit-trees could only be successful with a lot of attention and care.

Declan and Margrit Kennedy were really set on transforming the south-most section (approx. 5 hectares open land and approx. 3 hectares of pine forest) into a pretty intensive permaculture system. And that meant developing an extensive poly-culture using the 5 Zone Permaculture system of agriculture and grading from

Zone 1 and 2:	a high intensive market gardening with small animals;
Zone 3:	an extensive section of fruit and nut perennial trees with larger domestic animals;
Zone 4:	a cultured and harvested woodland or forest-garden;
Zone 5:	the completely wild forest zone, simulating the original northern German jungle. In our case, it would have to be left out due to lack of space.

Declan's vision was to implement a variety of different landscape-forms to promote many different small climate areas – to facilitate a nearly automatic and self-nurturing garden of fruits, nuts, perennial vegetables and wild herbs. Areas for aquaculture, domestic animals and general biodiversity should also be included, as well as experimental plantings of productive bushes and trees from other European climate zones and further afield. He chose to take over the design focus for the whole 8 hectares, with particular emphasis on Zone 3.

Declan was joined by a larger very motivated group of people interested in self-sufficiency for the Lebensgarten Ecovillage – as reaction to the world economic crisis of 2008. As a result PaLS was founded in February 2009. Because the fine sandy soil had so little or no nutrients, it was indeed necessary to find an alternative solution to the normal ways of planting and maintaining fruit-trees in this extensive zone. It became clear that additional compost or fertilizer would be quickly washed away by even medium heavy rain so that it would not be accessible to the fine roots. This was our main motivation to get something like the Earth-Magneto method under way.



As a practitioner of Radiesthesia (e.g. divining for water and ley lines) and Geobiology (e.g. ascertaining the interactions between the Earth and the biosphere), Declan Kennedy had quite a lot of experience in working with under-earth-surface electromagnetic fields (produced by under-surface water channels and streams bashing against small stones and other obstructions). He was motivated to change the usually perceived negative effects of this phenomena (e.g. a ley line is bad news under your bed) to a possible positive effect: harnessing of the north-south electromagnetic field – which exists naturally everywhere – to improve the growth of plants.

He had had contact with different people in Geomancy over the years, such as the Geobiology group Hagia Chora mainly in Bavaria; Eike Hensch, Nienburg; Adolf Hoops, Walsrode; Blanche Merz, Geneva; Marko Pogacnik, Slovenia; Reinhard Schneider, Nordheim; Maria Weig, Chiemgau and many others. He had collected a lot of ideas, concepts and methods about a phenomena that is not verified by usual scientific measuring techniques. He decided to experiment, nonetheless, as the use of energies in subterranean zones, oscillation and radiation fields in the earth as well as their resonance have been used in agriculture and horticulture over the centuries – since the middle-ages. (see Appendix)

The Earth-Magneto method had come to Declan's attention through a meeting with the Hagia Chora Group in Bamberg in the 1990's and again in 2007 at a Geomancy workshop in Lebensgarten. Using a booklet supposedly written by Gustav Winter in the 1930's, he put together rough proposal for the extensive zone of PaLS. There was very little knowledge and very little documentation of how this system worked – so inspired by this booklet, Declan put together a proposal in the form of a dialogue with Roland Wolf who had been doing some research at PaLS on some Terra Preta recipes.

Roland and Declan decided to try out the Earth-Magneto method and began preparing the site. It was not their intention that this would be a scientific work but instead a practical experiment. Any one from the permaculture community could come and help – and we all learned while doing. It was very definitely a practical approach but often they had to rely on their intuition, as even where descriptions were to be found on the internet, they were all written in global terms and never gave detailed account of "how to do it".

A special group around Declan within PaLS started this Earth-Magneto Project within the extensive zone 4 in 2011. Here we decided – in the design process – to include a "no-work-gardening" experiment in raising fruit and nut trees. This suggestion was quite a challenge to implement in this fine soil. Our goal was to have a middle-sized orchard in poly-culture that, after a not-too-intensive planting period of a year or two that would take care of itself. We based it, more or less, on the experience of Gustav Winter (see Appendix) from the 1930's and it's further development after WWII.

### 3 Our Project

Within the overall design of the park, we – as the Earth-Magneto group – chose the shape of the suntrap in the north-west corner as site for "care-free" magneto-fruit trees. We chose the side of the artificial stream and the dance circle as the control orchard.

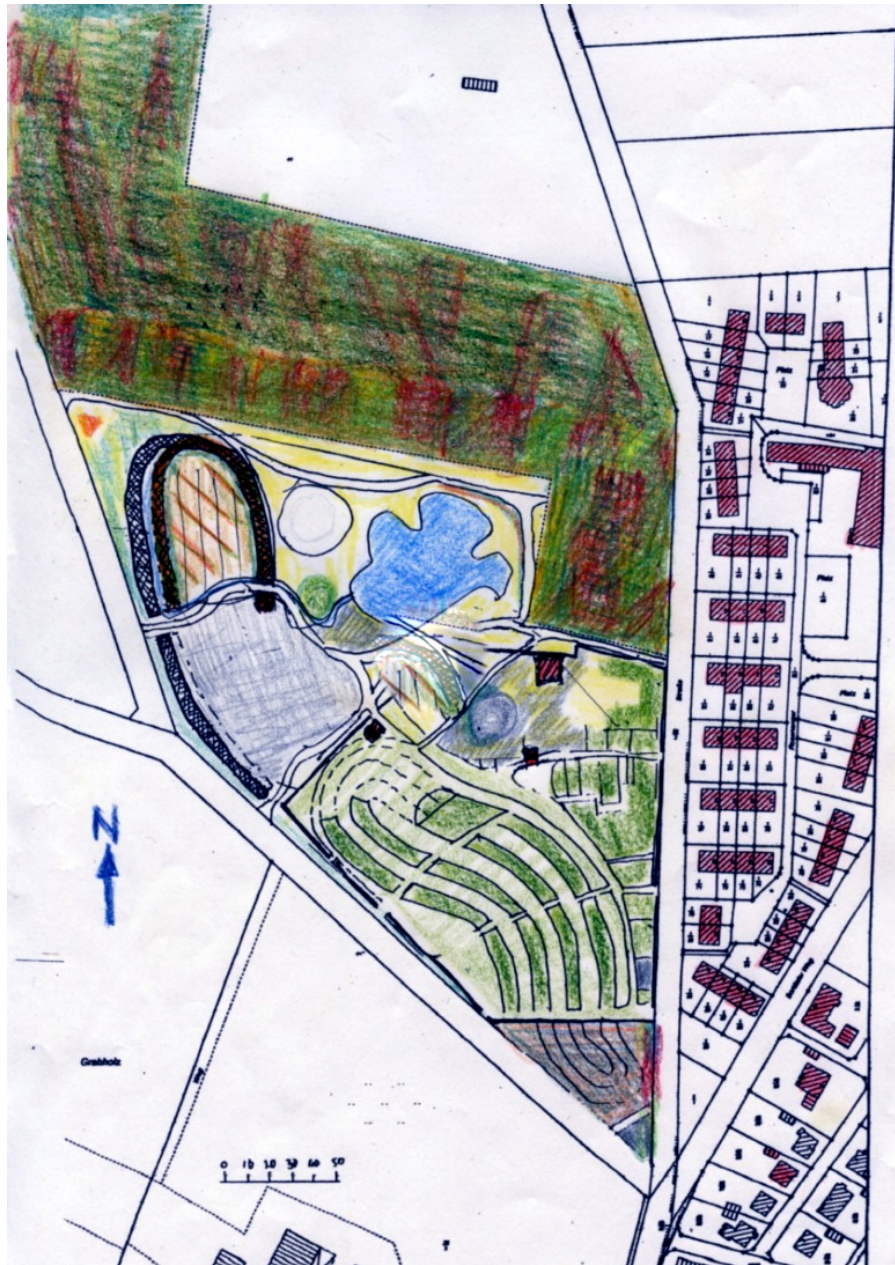


Figure 2 – PaLS plot design from November 2011

#### 3.1 Overview

The "research" project started in the planting-period of Autumn and Spring 2011/12 and continued, with periods of observation and correction, until January 2021. One could say 10 years. Declan Kennedy was the only continual observer and he kept this up while finishing his remaining load of projects in Steyerberg and elsewhere. As many trees died, there were many critics. This was inevitable as we were trying to find out if "care-free" fruit trees would survive under these adverse conditions.



The technology covered the following aspects:

- Laying metal rods (reinforcing bars) 20cm under the surface of the earth in a 40m x 40m suntrap, in parallel lines 2,50m apart in north-south direction – in order to harness the energies of natural magnetism in the earth and the atmosphere.
- Planting two orchards (see Fig. 3) according to permaculture poly-cultural principles:

Earth-Magneto Orchard = **A.** with 66 trees

Control Orchard nearby = **B.** with 35 trees

For that we bought many different fruit trees. Each (of the 35) fruit-tree type and sort came in pairs – in order to have one for each orchard.

- Reducing maintenance.
- Observing the survival and the yields in both the Earth-Magneto Orchard and Control Orchard.



Figure 3 – Earth-Magneto Orchard (A.) and Control Orchard (B.) in Summer 2012

## 3.2 Preparation of the Site

Prior to harnessing the Earth's magnetism, we needed to change the immediate environment.

### 3.2.1 Windbreaks and Swales

In 2009 and 2010, a continuous mound or "berm" – 3 to 4m high – was built along the west and south-west periphery of the extensive zone. This created a windbreak but it also helped to keep off the spray (prevailing wind) from the poisonous pesticides and herbicides still being used extensively on neighbouring fields to the west and south-west.



Figure 4 – View of berm towards south-east

This berm was built from rubble from demolished buildings, and we made sure that it contained no plastic or other toxic materials and as little concrete and/or metal as possible. We were lucky to get root material from large trees that were too big to be shredded in the normal chipping machines. Atop there were placed twigs, small branches and a lot of root soil. The material was dumped, usually sideways from the trucks, to create a continual mound. We left an opening for a gateway and two spaces for a high pile of branches and twigs with no soil content (for homes for hedgehogs, etc.). In the normal triangular section of this long mound, there were bricks, blocks and even small (partly broken) reinforced concrete beams. These we needed to create small habitats for other useful wild animals like weasels, salamanders, etc. Immediately afterwards, the whole mound or berm was covered with tons of shredded tree material (from the municipality's composting site).





**Figure 5 – Berm looking towards the north-west corner**

All this material was brought on to the site for free or for the cost of the fuel to deliver it. The different transport companies were glad to get rid of it as it saved a lot of hauling-costs for their huge trucks (going back and forth to the official tip or composting grounds) anything up to 20km away – a win-win recycling solution.

The next thing to be done was to build swales along the inside of the berm by lifting the topsoil with a front-end loader on to the top of the berm, letting it sift through the material already there. In this way the mound could be better levelled in height and holes could be covered in, where necessary. The sandy soil on top of parts of the mound was then packed down by the front-end loader. Subsequently, this was covered by tree-shredded material to half its height to stop the deer from climbing over.

### **3.2.2 Soil removal and small hill**

The third preparation was to scrape off roughly 10cm. of highly contaminated topsoil in the same north-west corner suntrap, rolling it over with its "weeds" towards the south, creating a 3m high mound of soil. This small hill contained a high degree of contamination due to the 20-30 year surface run-off of so-called "plant protection agents" to this lowest point of the entire plot over the years.

Dr. Jürgen Reckin helped us to acquire certain micro-organisms and bacteria with which we inoculated this hill. These effective micro-organisms transformed the poisons into their original plant material. When after 3 years the nettles and other wild herbs came back, we were able to see that these micro-organisms had done their regenerating task.



### 3.2.3 Planting the suntrap

The next step was to create a large suntrap of roughly 40m long, a semi-circular plant structure where (see Figure 6 – Sketch of a completed suntrap) the highest trees are located in the centre to the north and the lower trees and shrubs reach down both to east and west, according to size, getting smaller until, at east and west arms of the 40m south-opening, shrubs are only 1m high or less. This creates after 15 to 20 years a small micro-climate with warmer temperatures as you move towards the north to the high plant "wall" of the horse-shoe-form. There the fruits of warmer climates can be planted, raised and can yield and ripen, if they are well selected.



Figure 6 – Sketch of a completed suntrap, when all plants have reached their final height

All fruit supporting trees and shrubs and trees (of different sizes when fully grown) were brought on to the site – in pairs with one plant being located on each side, to the east and the west, forming a horse-shoe shaped symmetrical bush (one plant east, one plant west of the centre). This structure starts with high light reflecting trees from the central north point (mostly evergreen) and each plant gets gradually lower, bit by bit, until the bushes take over and are finally as low as gooseberry bushes or strawberries at the end of the "horse-shoe" stems, marking the almost 40m wide south opening.





Figure 7 – Planting the north side of the suntrap



## 4 Implementation

### 4.1 Laying Earth-Magneto reinforcing bars

Declan Kennedy designed a plan for planting our Earth-Magneto Orchard, placing the re-enforcing rods (see blue lines running from top to bottom in Figure 8) in between the fruit-trees.

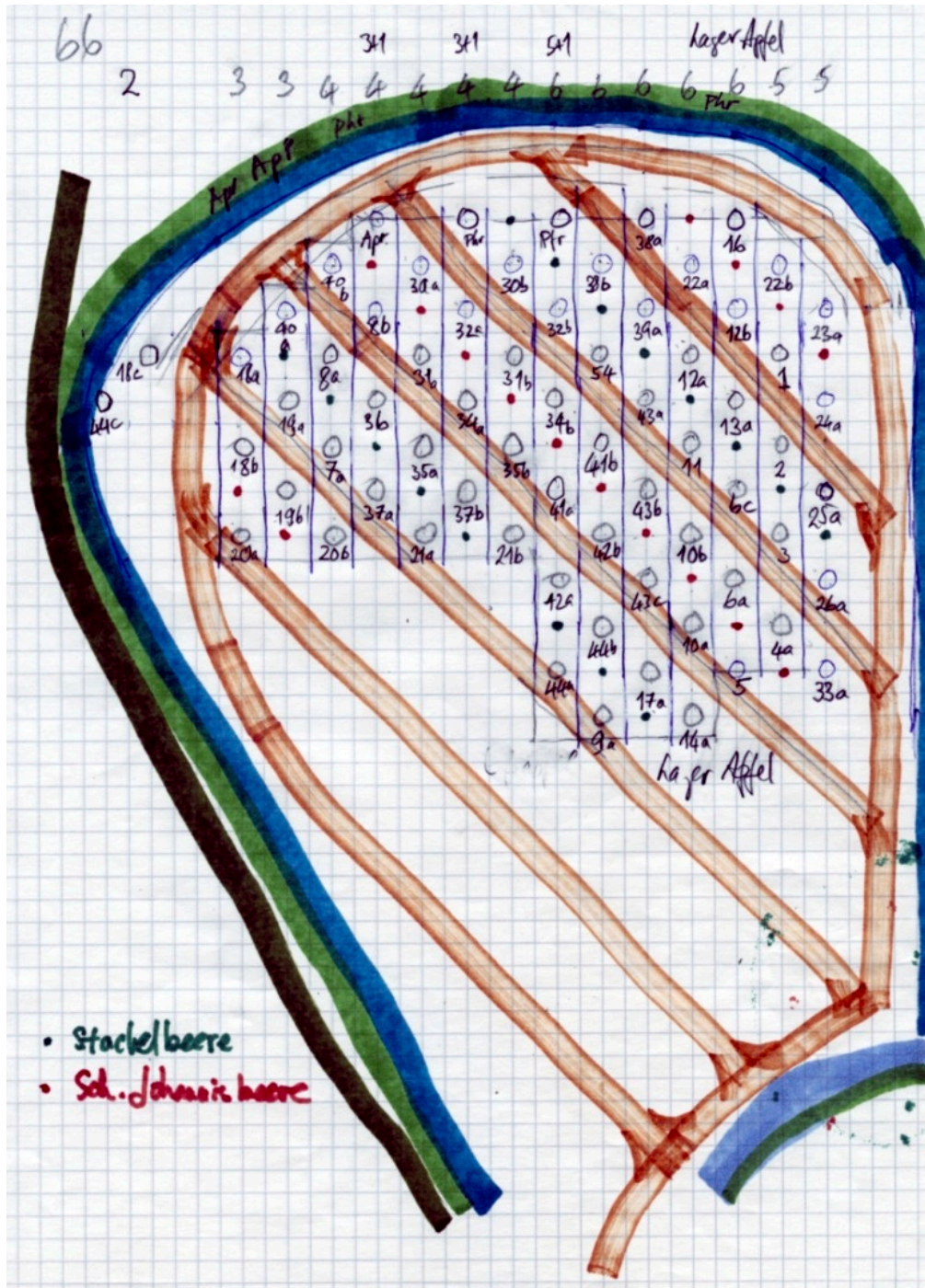


Figure 8

These rods were laid into troughs: 2.5m apart. In Figure 8 the number next to the circle denotes the trees, referring to their type and sort. In this way we could determine and achieve a poly-culture and companion planting.





Figure 9

At this point, our local building company – Schmidt Bau – started digging out the grooves or channels, roughly 20cm wide and 20cm deep, along the guiding cords – over the whole width of the suntrap.



Figure 10

The wind was so cold that the digger's driver had to wrap himself in plastic sheeting to be able to drive the digger without his hands and legs freezing.





Figure 11

Figure 11 shows the first two full length troughs with the guiding cord in north-south straight lines.



Figure 12

The re-enforcing rods were then laid in. It took two men two days to dig the troughs, lay in the rods and fill back in the sand. The weather remained dry. So, we managed to get the work done relatively quickly.





Figure 13

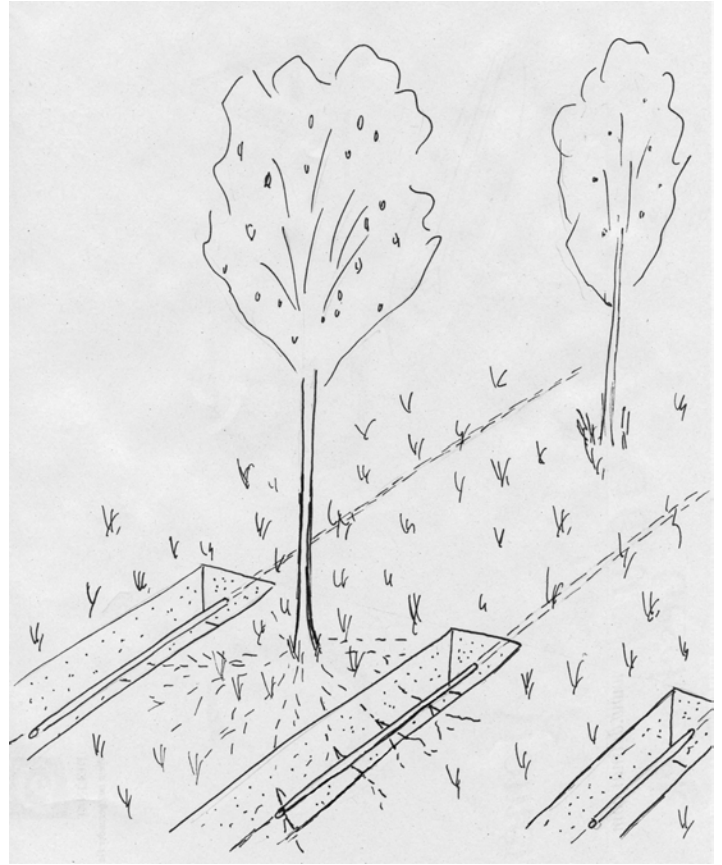


Figure 14 – Sketch of the Earth-Magneto system

In Figure 13 we see the re-enforcing bar shortly before filling in with the soil.

A ton of compost from the local organic agricultural Co-op was brought on the site in preparation for planting the fruit trees later, supplemented by algae, as in Figure 17.



Figure 15





Figure 16

Figure 16 shows the filling in but still with the guiding cords. The flattened earth is now ready to start the fruit-tree planting. When the guiding cords were taken away (after the fruit-trees had been planted) the rods that held them were left in order to mark the position of both ends of the submerged re-bars.



Figure 17



## 4.2 Planting the Earth-Magneto Orchard

Autumn 2011, the tree-planting group now came on the scene and the layout was explained. The trees came from the organic tree nursery and had to find a temporary home while waiting to be planted.



Figure 18

Folding in the trees in sand to protect them from night frost until we get around to planting them at their right position. The trees had been pruned up to about 1.50m height – some were in light compostable sacks that helped holding the soil around the roots during delivery transport.





Figure 19

The hole for the tree was dug and given some water. Each tree would get a starting assistance of some bentonite or powdered stone and two bucket's full of compost that had been mixed with roughly 10% charcoal dust and some algae.



Figure 20



Figure 21

Wrapping the trees with a bite-guard was necessary. Usually, two people took care of each tree: after digging a hole – the size of the roots – and taking off the root cover, while holding the tree in place, they covered in the roots with soil around the tree. Only then did they move to a new tree.





Figure 22

Each tree type and each variety of fruit-tree came in pairs. One was to be planted within the Earth-Magneto area and the other, as control tree, would be planted on the same days outside under 'normal' conditions – without influence of the re-bars in the Control Orchard.





Figure 23

Ramming in a wind-stave completed the job before going on to the next tree.



Figure 24





Figure 25 – Planting finished on 18<sup>th</sup> November 2011

This we felt was very important: planting the tree with a partner from beginning to end – digging the hole, mixing the Terra Preta with bentonite and possibly algae, setting the tree, one person holding it while the second person filled in the soil; and compressed it lightly with their feet. Then immediately covering it with cardboard and completely covering the cardboard with straw (to hold in the moisture and to stop the wild-plants and grasses coming through too close to the newly placed roots as they would be later in competition with the new tree for nutrients and moisture). In this way, each tree received a boost of spiritual energy from those who had planted it.

The wide beds under the fruit-tree were mulched – mainly with autumn leaves – and pelleted seeds of wild herbs and other ground cover. Some berry bushes were sown into the mulch. In January 2012, it was necessary to check the mulch as the high winds over the winter had spread the mulch too thin in places.

Also a few more trees were planted in February, donated by a member of the Lebensgarten community.





Figure 26



Figure 27

In January 2012, the compost pile had now been used up and spread to below the drip-line of the trees to give them a good start. The paths were covered with white sand to keep down the "weeds" (Figure 26 and Figure 27). After this we decided to reduce the maintenance to a minimum.



### 4.3 Planting the Control Orchard

The Control Orchard was being planted at the same time as the Earth-Magneto Orchard, consisting of 35 fruit-trees of the same types and sorts. Each tree pair was planted immediately – one after the other but separately in the two orchards – by the same people, going back and forward between the two areas, in order that the same conditions were met and the same methods were used.



Figure 28 – 16<sup>th</sup> November 2011



Figure 29 – 17<sup>th</sup> November 2011

Instead of being planted in straight lines these trees were planted along the edges of the artificial stream (see Figure 32) and in a circle around an open circular space (Rundgarten).  
One minor difference to the Earth-Magneto Orchard was that there would be later no nearby wind-protection.



Figure 30 - Sketch showing the planted trees in green





Figure 31 – Tree list and plan of the "Rundgarten"

Figure 31 shows a list of trees making up the circle in the Control Orchard area – again in poly-culture. (See also Figure 3 – Earth-Magneto Orchard (A.) and Control Orchard (B.) in Summer 2012)



Figure 32 – Fruit-trees along the newly implemented stream in June 2012



## 5 Observations and Ancillary Treatments

### 5.1 First Observations 2012 – 2014

Already in March 2012, despite freezing temperatures at night, the planted area began to show signs of green vegetation. The mulch kept back the high grasses and wild plants that would usually have taken over. The beginnings of these could be seen on the mound on the east side of the suntrap. And then, in June we saw quite a deal of wild grasses on the paths in between the beds, which had to be cut – the paths were then re-sown mainly with perennial clover.



Figure 33 – June 2012



Figure 34 – June 2012



Some of the trees looked pretty miserable and dried out. As we wanted the plants to get used to their new surrounding and weather conditions, we did not water them, just waited for the rain that was rather scarce in that particular spring. Many of the control trees had to be helped as they were in really bad shape.

In the control area, in September 2012, Declan Kennedy used another type of Earth magnetism methodology that had been handed down to him (by word of mouth) from Blanche Merz, a Swiss civil engineer and diviner, who had given a course in a local orchard on positive energies in nature in 1988. This over-ground methodology (OG-method) was invented especially for already planted trees that had developed badly and needed help. It was adapted by Declan Kennedy for the permaculture conditions: Two reinforcing rods of about 1m length are placed at 85cm from the trunk of the tree at both sides – again fixed in exactly north-south direction and fixed by laying them on wooden laths of larch wood. In going through the Control Orchard, we identified the trees that needed support badly and applied this system sporadically over the next years.



Figure 35 – The over-ground Earth magnetism methodology in September 2012





Figure 36 – Rescuing the trees in the control orchard with the OG-method in September 2012



In both orchards, we only watered the trees twice, once after planting and again before renewing the cardboard and straw mulch – where it was felt necessary. The whole idea was to get the trees to find their own place in this new situation, to get acclimatized (naturally) to their new setting – to the sandy soil and the relatively dry weather – and to cut down maintenance work to the bare minimum in this extensive zone of our forest garden. Here we were maybe too optimistic.



Figure 37 – Control Orchard in late February 2013

After a long hard winter, in May 2013, some fruit-trees finally blossomed – and the first fruits started to appear 18 months after having been transplanted. The control trees – that survived – had not yet fruited. This only occurred in the summer of 2015, after a high degree of support.

But in 2013, an elm tree was planted right in the middle of the inner circle (Rundgarten) by Anne Brockhaus, which can be seen on Figure 38. She also took care of the fruit trees in the immediate vicinity and planted new apple trees in 2017 to re-complete the circle.





Figure 38 – Newly planted elm tree within the "Rundgarten" in 2013



Figure 39 – Volunteers helping in the control orchard in October 2014

In an autumn workshop of 2014, Earth-Magneto tree repair was again done in the control area – with trees that only showed signs of trouble or dying in 2013. Here, we used once again the OG-method. This was the final attempt at maintenance until Clara Marie Hencke came as student-volunteer in 2015.

## 5.2 Second Observations 2015 – 2016

From Spring 2015 until Autumn 2016, Clara Marie Hencke, a Permaculture Design Certificate (Dip.Perm.Des.) student, did a lot of observations and work at the Earth-Magneto orchard area. We rely in this report on her documentation.<sup>3</sup>



Figure 40 – Earth-Magneto orchard in April 2015

In 2015, she counted 53 living fruit-trees in the suntrap and 21 trees in the Control orchard outside of the suntrap.

Her key observations were that mice attack on the fruit-trees and severe drought on sandy soils in summer were the most common causes of death of the fruit-trees in the suntrap. In addition, the fruit-trees had little protection as they were planted immediately after the non-fruiting trees, while building the suntrap itself. Therefore, the fruit-trees were unfortunately very exposed to the sprays of fertilisers, herbicides and pesticides on the surrounding fields – and the harsh west wind.

Also, she writes (translated from German): "It looks like the fruit-trees are dying in a pattern. There are two areas where there are no more trees. One area to the east ('trockener Bereich' in Figure 41) is very dry and is on slightly higher ground. The other area ('feuchterer Bereich') is to the west and is more in a depression. When it rains a lot, the water collects there."



She shows the rough pattern of the 2015 fruit-tree population in the suntrap by means of a sketch. (Figure 41)

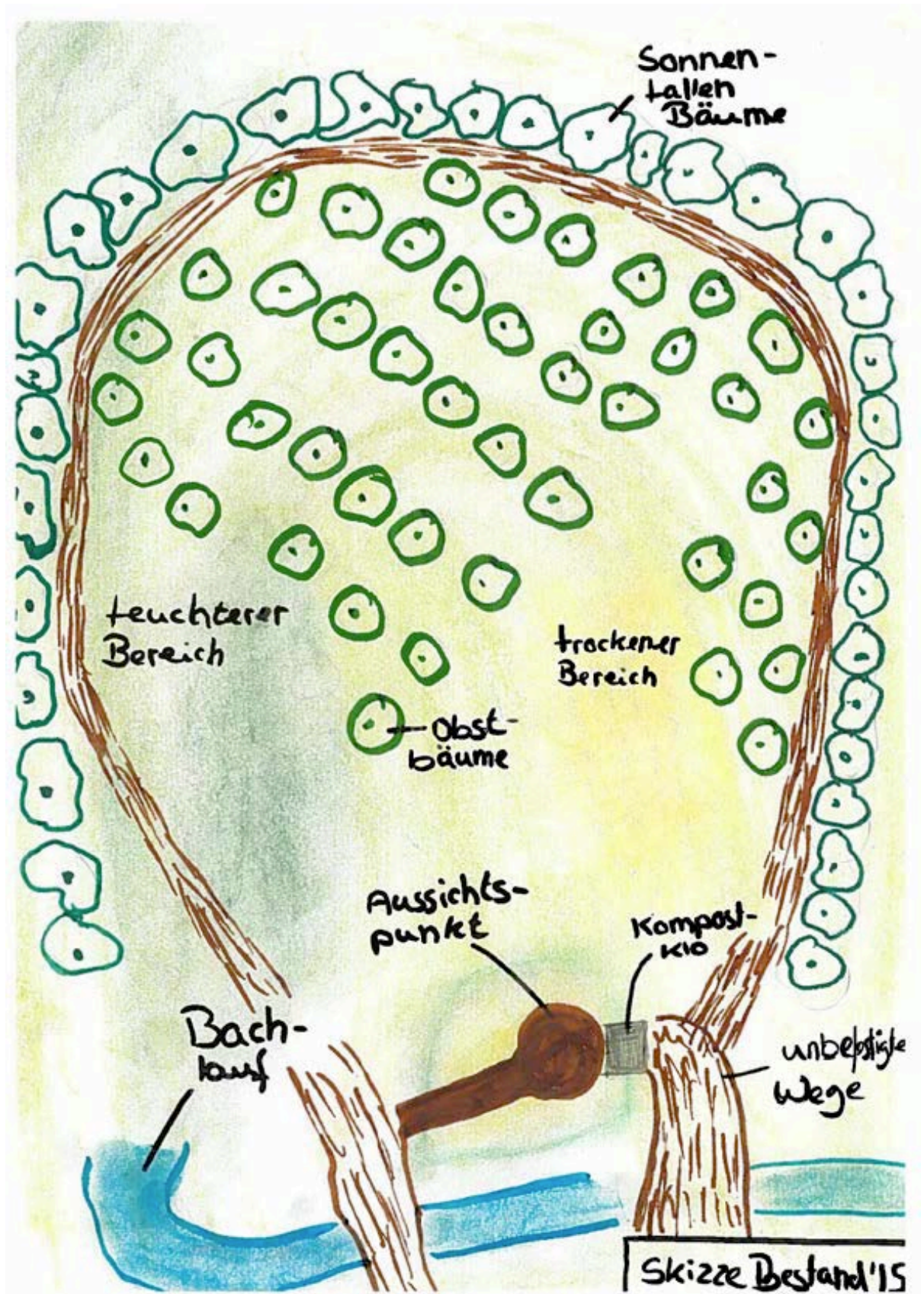


Figure 41



To counter these factors, the following measures in the Earth-Magneto Orchard were implemented by her:

1. Heightening the windbreak mound (called berm) to the west with a deadwood hedge, 1-1.5m high, and planting a wind-break to the east with various native shrubs in order to increase the wind protection.
2. Creating a dry biotope consisting of sandstones as heat reservoirs with wildflowers to support microclimate. Planting comfrey as a boundary to the dry biotope. (Figure 43)
3. Creating targeted water flows to the trees and drainage ditches in the tree patches to increase the water storage capacity of the soil.
4. Digging swales about 20cm deep and 10cm wide, roughly 30-40cm away from the tree trunks and filling them in with charcoal, bentonite clay and wood chippings. Adding fermented urine to the swales to keep mice away and for fertilisation.
5. Mulching the fruit trees in a circle around to it's drip-line.
6. Transplanting the severely damaged trees to another location in the suntrap with mouse wire mesh as protection around the roots.
7. Pruning some of the fruit trees.
8. Establishing insect dwellings and refuge for small mammals, such as weasels with piles of stones and branches mainly in the nearby berms in order to create habitats for natural predators for mice.



Figure 42 – Dry hedge addition to the windbreak mound, 2015



After Clara left to go on with her studies, there were a few attempts over the years by different people to take over the focus for these two orchards, without much energy and little success. The contemporary coordinating group of PaLS considered this as okay, because the original idea was that these two orchards in the extensive zone should take care of themselves



Figure 43 – Freshly created dry biotope and deadwood pile in the background, 2015





Figure 45 – Earth-Magneto Orchard in Summer 2017



Figure 44 – Control Orchard in Summer 2017



### 5.3 Third Observations 2020

In August 2020 we were observing the Earth-Magneto Orchard. We found some fruit-trees carrying very well – like pear and plum (see following figures). The surviving trees could still be considered as a poly-culture.



Figure 46 – Earth-Magneto Orchard in August 2020



Figure 47 – Earth-Magneto Orchard in August 2020





Figure 48 – Pear tree in August 2020



Figure 49 – Pear tree in August 2020





Figure 50 – Plum tree in August 2020



Figure 51 – Plum tree in August 2020





Figure 52 – Dead tree with ring-barking in November 2020

Other trees had died. We could observe that ring-barking had happened and other traces of deer influences on the trees were present



Figure 53 – November 2020



Figure 54 – November 2020





Figure 55 – Earth-Magneto site inspection in November 2020



Figure 56 – Suckers in November 2020

In autumn 2020, we did a thorough site inspection in the suntrap area. We examined every tree, referring back to the map showing those planted in 2011 and 2012. From the originally 66 trees planted in the Earth-Magneto Orchard, we found only 21 trees alive.

Additionally, we found suckers from a further seven ring-barked almost dead trees. (Figure 56 – Suckers in November 2020) Up to this point, it is not clear what kind of plants are developing here, because the original fruit trees were grafted at a very low position on the trunk, so that the graft itself was barely above the upmost soil level.



It is striking that the trees have not survived in the area near the swinging gate (shown at the back of Figure 57) in the deer-protecting fence, north of the suntrap. The gate-latch was broken and the fence at this point did not protect the area sufficiently from deer invasion in the 2015 to 2019 period. That is why we found eaten off bark near many dead trees.



Figure 57 – Earth-Magneto orchard with the swinging gate in the background in November 2020

Figure 58 – Panorama of the Earth-Magneto Orchard with view towards south-east in August 2020





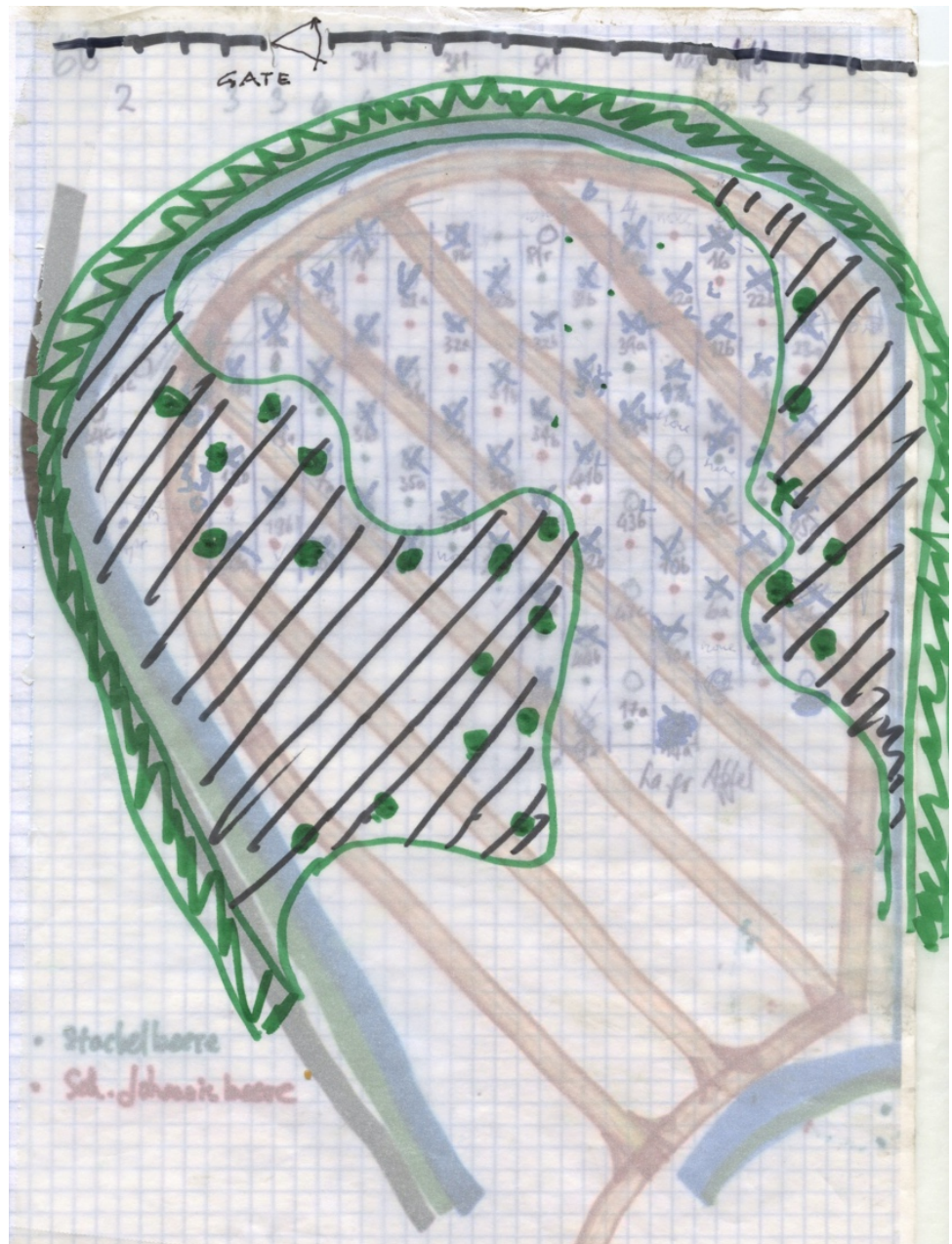


Figure 59 – Surviving 21 trees in 2020

In 2020, it was difficult to observe the situation in the Control Orchard as the area had been partly taken over by the grazing of seven alpacas.

Over quite a few years, up to 2020, very little maintenance had been done in either the Earth-Magneto Orchard or the Control Orchard, resulting in everything becoming quite overgrown with wild grasses. Here, the alpacas helped to keep down the wild growth. Only within the inner circle of the control area was the grass cut, especially around the elm tree.

Still, it was quite amazing in the winter of 2020/2021 that 14 fruit-trees were still alive across the whole Control Orchard, as only four of them had not suffered in any way. This was mainly because the OG-method had been introduced. Some other fruit trees died – having not been treated by this method – but their original roots produced 3 to 5 wild suckers, which we left to find their own way.







## 6 Prospects and Possible Implications

We would need to continue our research in order to be able to give definite results and suggestions for the use of these methods in the future. The PaLS plot is again in transformation and being used for plants and animals in varying combinations. These conditions are changing the general direction as well, in both orchards. We are not sure how much further the fruit-trees can take care of themselves. They need protection against the alpacas that are now keeping down the high grasses in these areas but can at the same time damage the fruit producing plants. When the snow covers and freezes over the ground, the animals have to find edible material elsewhere and are inclined to chew at the bark, especially where it has not yet become solidified. This way the rainwater gets under the bark, freezes at night and breaks up the natural protective covering.

The changing temperatures in the ambient air and the top-soil – especially in January and February, but also into April (2021)– put the sensitive fruit trees under stress.

### 6.1 Measurement of Temperature

It would be good to measure the temperature in the earth immediately around the reinforcing bars and compare it to the temperature in the adjacent earth, say, a meter away at the same depth and to the ambient temperature. Here, we would have to find a way that would not change the temperature by inserting a thermometer from the surface, i.e. bringing the ambient temperature with it by the insertion itself. Yet we haven't found a proper way of measuring the temperature without interfering with the system by the method of measuring.

Alone one or two degrees increase in temperature would make a lot of difference in promoting the reproduction of the very tiny micro-organisms around the bars, allowing them longer time into the winter and, especially, in the early spring to do their work on the fine roots of the nearby fruit trees. According to Dr. Jürgen Reckin of Finofurt, it could be argued that these micro-organisms need not flee to the lower warmer regions of the soil when the frost comes. They would also not need so much time to come up again in the early spring.

### 6.2 Measurement of Electric Current

It would also be possible to measure the very low electric current of the natural Earth-magnetism traveling through the bars. This would be another possibility of ascertaining why the fruit trees survive in the fine sandy soil, in the first place, and additionally, why they, in some cases, bear fruit faster after transplanting – and even have higher yields after the usual 5 year acclimatising period. Here we can possibly learn from the more than 200 years of research in a method called Electro-Culture. (see Appendix)



## 6.3 Companion Planting

In our original design, we did too little research on companion planting. For vegetable poly-cultural gardens, there is a lot of literature on this subject. For poly-cultural fruit-tree orchards, there is very little or none.

Also, the trees in the suntrap hedges (that were planted before the two orchards) were chosen to be fruit-tree supporting companions. This choice was done from experience rather than scientific knowing.



## 7 Results and Conclusion

We cannot even attempt to provide the scientific evidence about what we've done or achieved. We only know that some trees have survived and are bearing reasonable amounts of fruit. We can only provide rough estimates of our results.

### 7.1 Results

In the Earth-Magneto orchard, there were 53 trees when Clara Hencke arrived in 2015 and in 2020 only 21 that were still healthy and producing, which means we unfortunately lost 32 trees to the deer invasion in the four-year period. This was indeed also through lack of care in that period, as well as the fact that we thought that the orchard could by then take care of itself.

	original 2011/12	mid-term 2015		deer loss 2017/18		present 2020		
	no. of trees	no. of trees	% of original	no. of trees	% of midterm	no. of trees	% of original	% of original without deer loss
<b>Earth-magneto</b>	<b>66</b>	<b>53</b>	<b>80%</b>	<b>-32</b>	<b>-60%</b>	<b>21</b>	<b>32%</b>	<b>62%</b>
<b>Control</b>	<b>35</b>	<b>21</b>	<b>60%</b>	<b>-1</b>	<b>-5%</b>	<b>14</b>	<b>40%</b>	<b>41%</b>

Figure 60

Originally, in the Earth-Magneto Orchard, we planted 66 trees where the re-bars had been laid 20cm underground. 53 were in good shape through the mid-term (80%). 32 trees were ring-barked by the wild deer, some of which are still present as suckers from their base. Still 21 fruit trees made it through to 2020 – that's 62% without deer interference. They are slowly getting used to the fine sand conditions (8 meters deep) where there is little or no nutrient renewal. We will continue to observe the development.

In the Control Orchard, 35 trees were originally planted, according to the nursery-invoice. After one year 21 (60%) were in bad shape; of these 13 were then treated in 2013/14 with the Magneto over-ground methodology. All-in-all, 14 (41% – without deer loss) survived the nine years until 2020; 7 extra apple trees were planted in 2017 to re-complete the circle. We did little of the usual weeding but lots of mulching from 2014 on. As the mulch turned into earth over the years (unfortunately) the competing grasses were inclined to take over.

The following sketches can give the reader an approximate summary of the different stages of the area over the years.

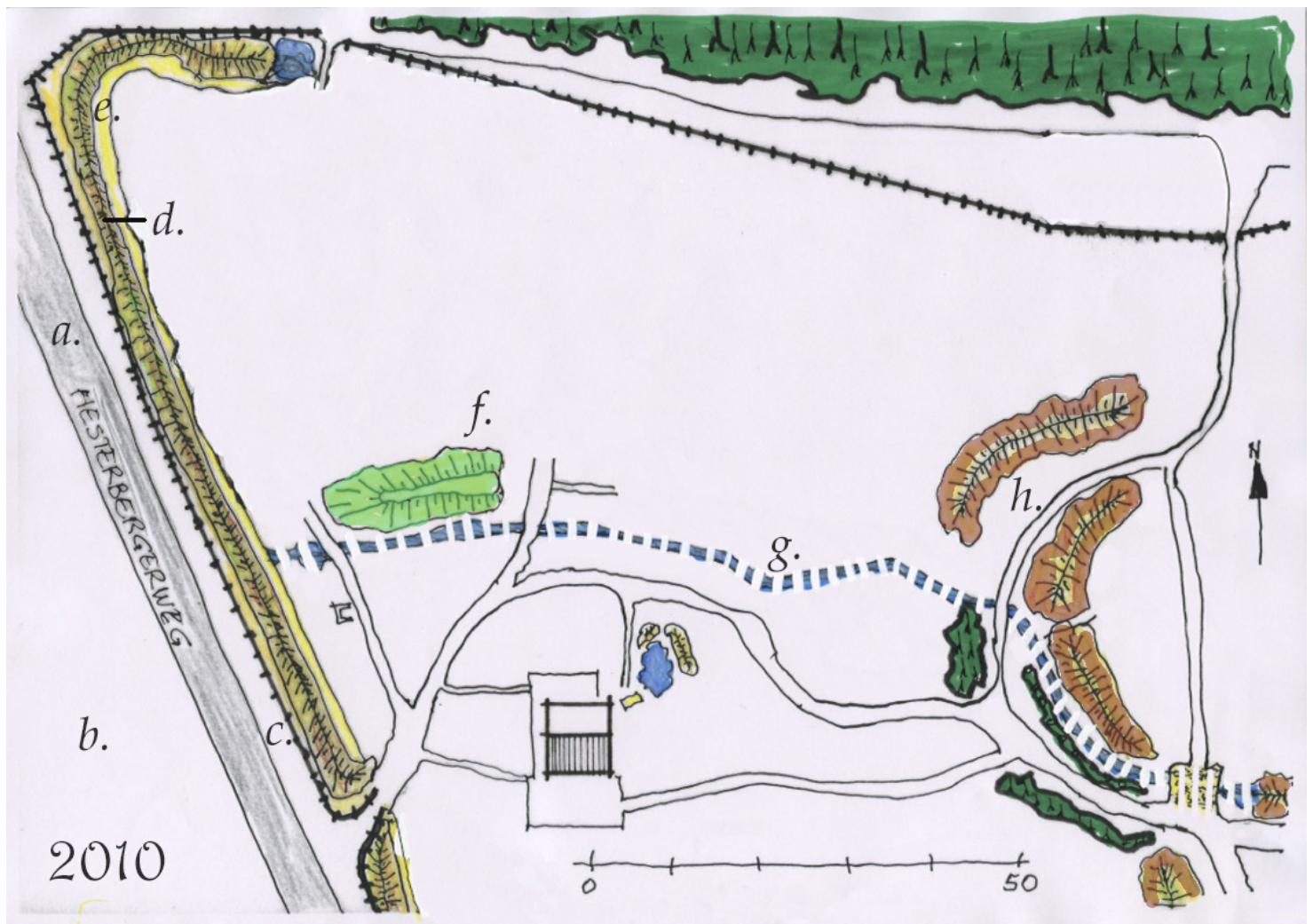


Figure 61

- a. Dirt road
- b. Conventional agriculture
- c. Grass siding
- d. Rubble, roots and earth mound as windbreaks
- e. Swale as run-off leech for reconstructed stream
- f. Contaminated earth mound or hill
- g. Planned reconstructed stream
- h. Wind-break rubble mounds of recycled roof tiles



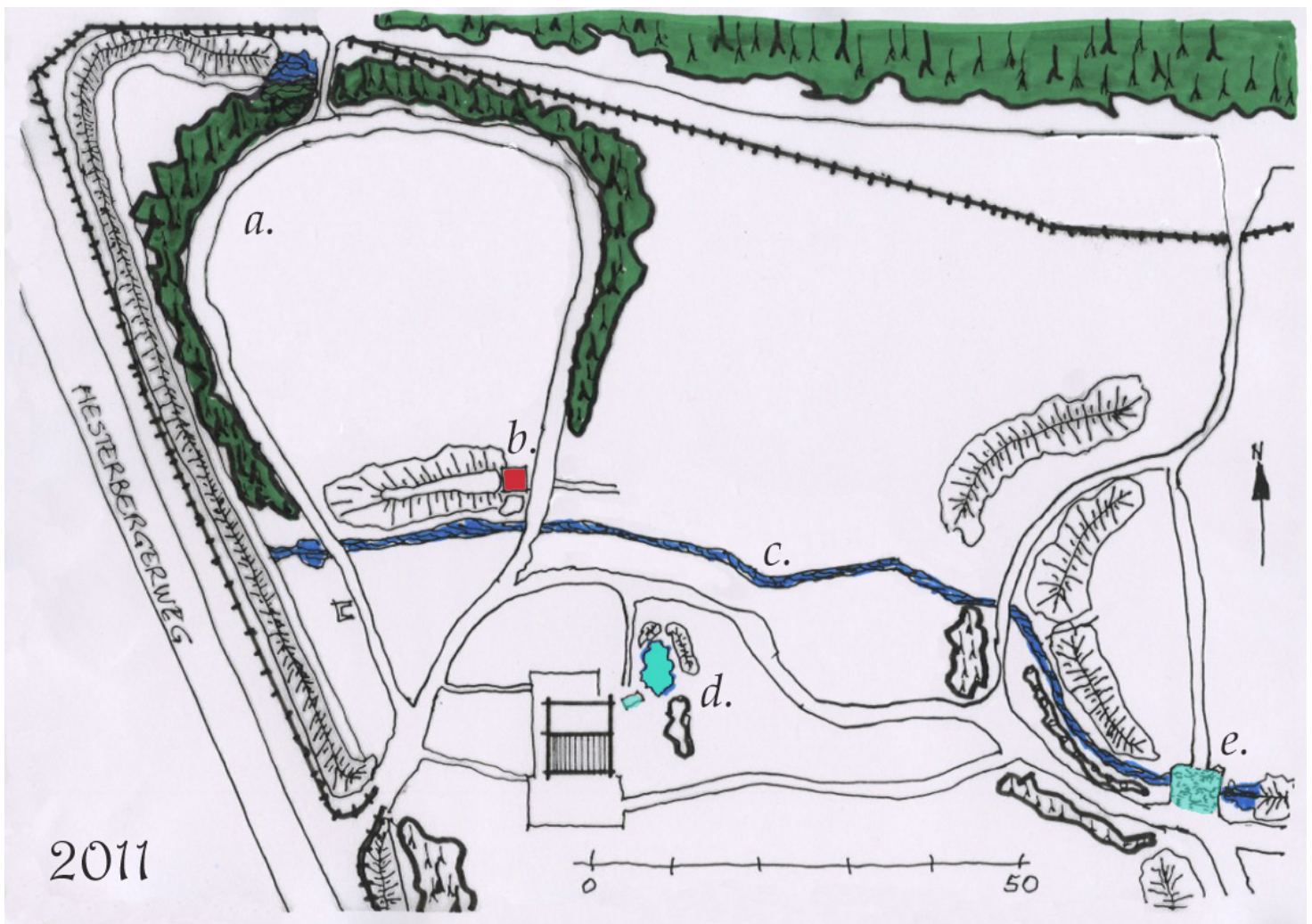


Figure 62

- a. Horse-shoe shaped tree-hedge creating a suntrap
- b. Terra Preta toilet
- c. Reconstructed stream with intermittent small ponds
- d. Wet-land treatment of the grey-water from the nearby hut
- e. Gravel ford with stream below

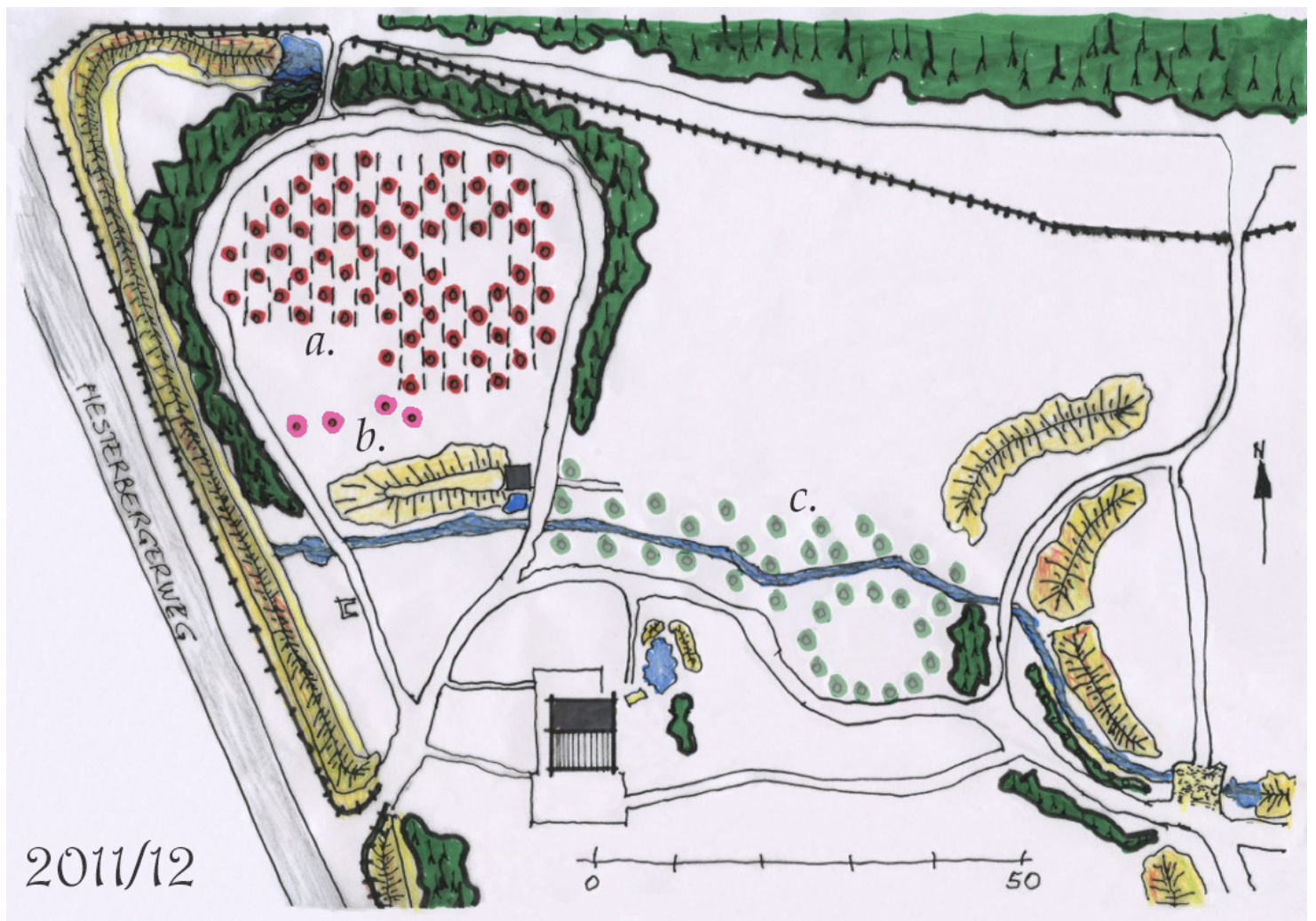


Figure 63

- a. **Earth-Magneto Orchard** re-bars laid north-south under earth surface + poly-culture fruit-tree planted in between
- b. Singular mature fruit-trees planted one year later
- c. **Control Orchard** along stream banks and in circle garden



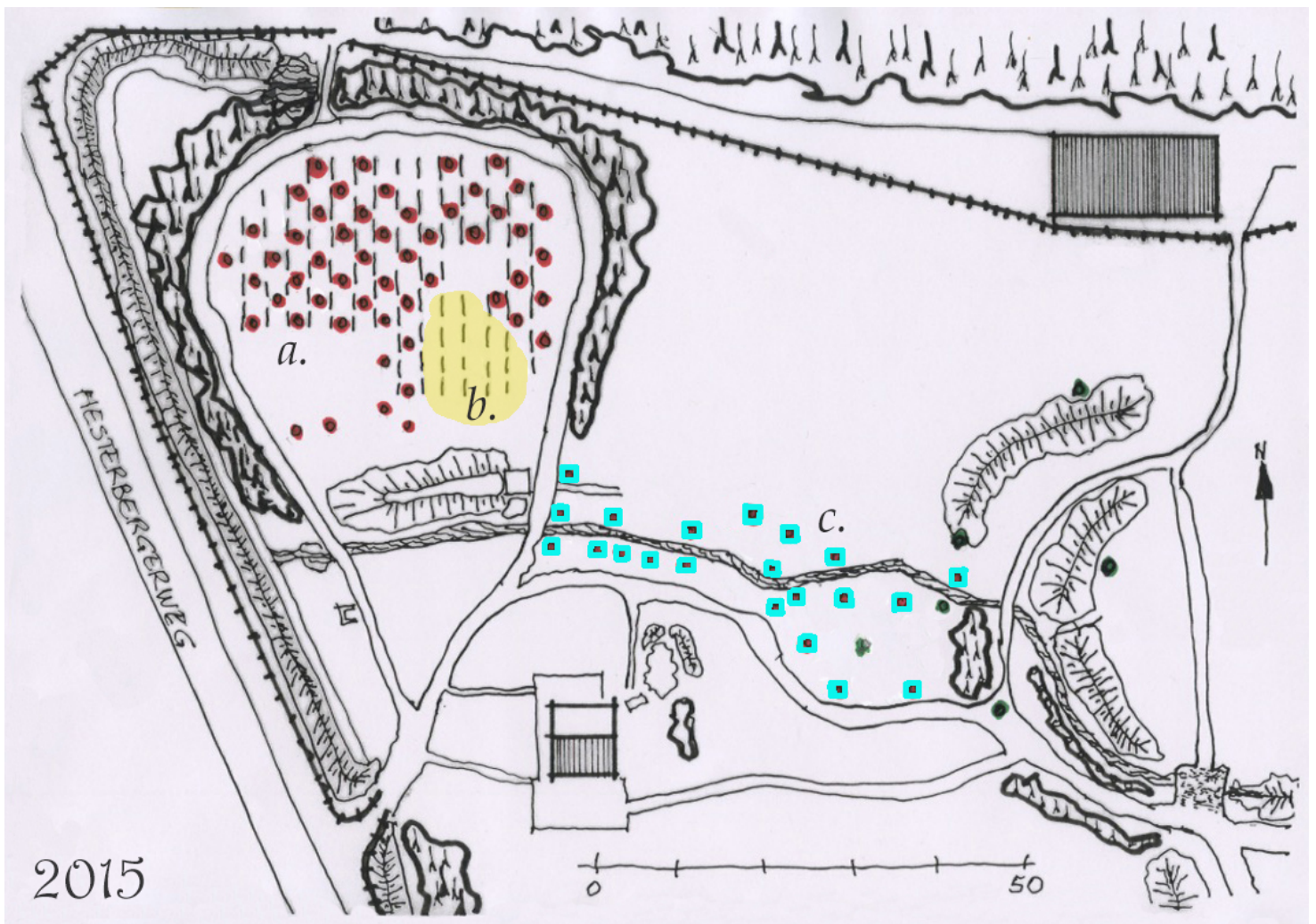


Figure 64

- a. Trees that survived without maintenance in Earth-Magneto Orchard*
- b. Area where fruit-trees did not survive because of very dry soil*
- c. Most trees in Control Orchard died except these that were treated in 2014 by over-ground Magneto methodology*

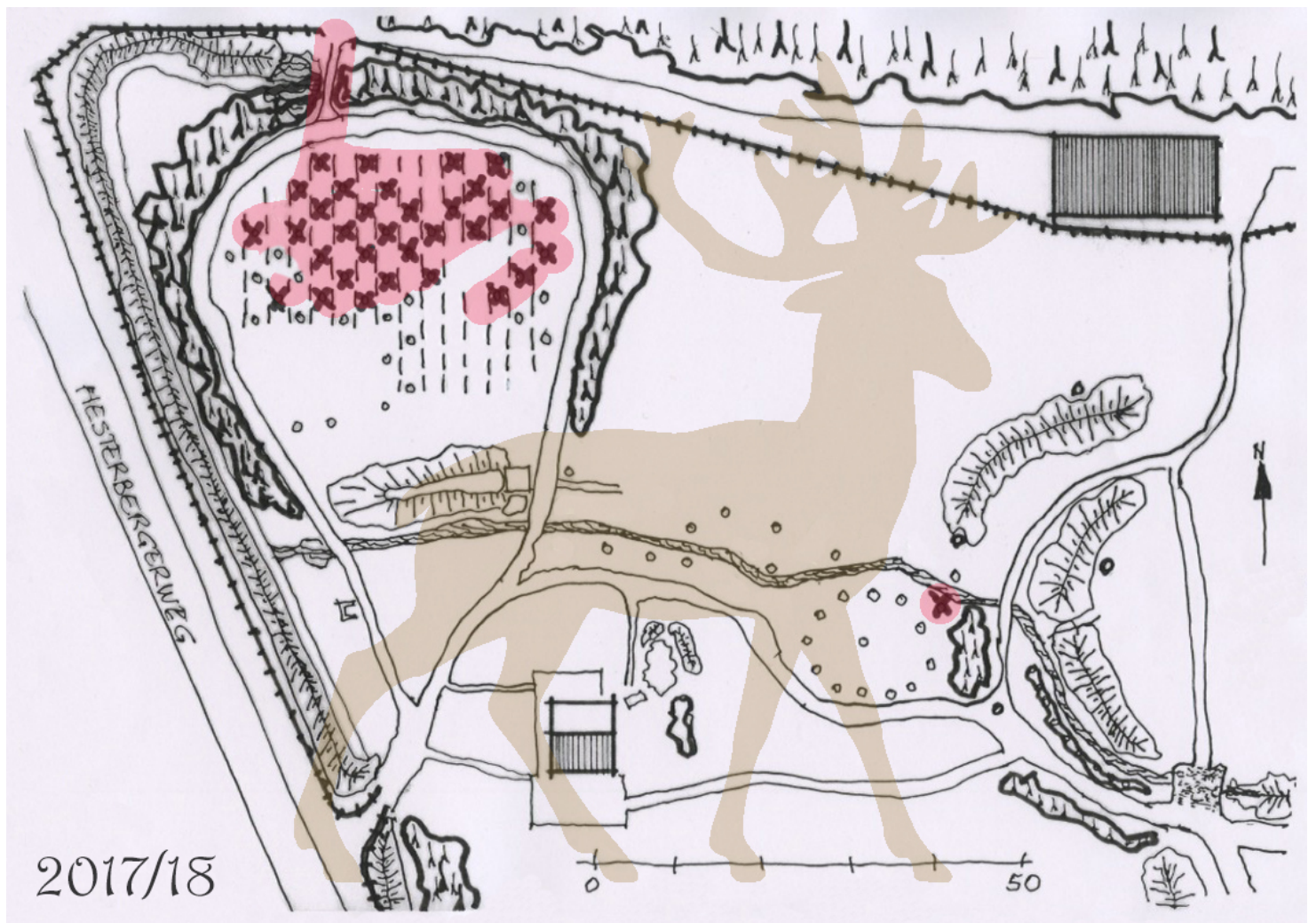


Figure 65

(X) Here are shown the trees that were **ring-barked** by deer because fence gate to the north of the suntrap was defective and therefore continuously open



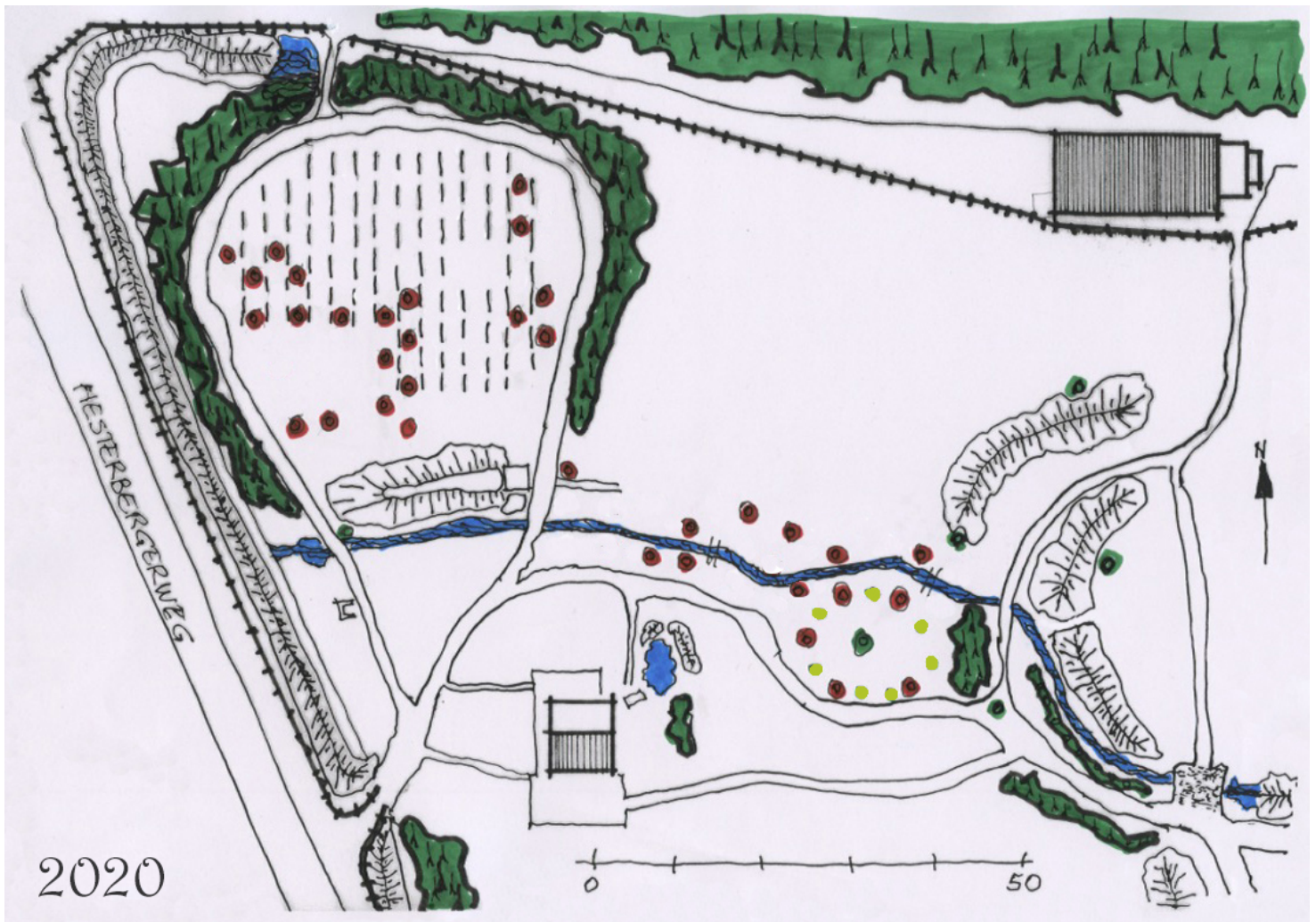


Figure 66

*(Red) Remaining fruit-trees in Earth-Magneto Orchard and Control Orchard – well established but only some bearing fruit*  
*(Light green) Newly introduced fruit-trees in 2017 to 2020*

## 7.2 Conclusion

From my experience over 10 years, I can now say that this experiment has worked.

Our project has shown that with the help of electro-magnetic fields it is possible to have fruit-trees bearing well in sandy soils. In addition the amount of maintenance was considered minimum in this fruit farming extensive zone compared to traditional fruit growing. Usually, almost daily maintenance is taken for granted.

It needs further experiment to be the necessary answer for the need for fruit-trees in the poly-cultural planting of a permaculture forest garden, especially on fine sandy soils. There has been further experiments and research done on how electro-magnetic support-systems work for vegetable farming – not so much for fruit.

We have learned a lot through other projects and their application the different methods of making use of magnetic fields – and a partial use of electric current. A short, annotated sketch of these methods can be found in the appendix.

There are many more studies available today, both from history and also nowadays in through projects undertaken in different countries. A comprehensive study would be beneficial to help fruit-growers with poor sandy soil to cut down watering, maintenance and boost yield.

Here, I have related what we managed with minimum amount of work over 10 years.

*Declan Kennedy, Lebensgarten Steyerberg, Germany, May 2021*



## Appendix

In this appendix we describe selected direct or indirect influences on the Earth Magneto Project that may be of interest to the reader.

### Gustav Winter's Method

Some documented experiences about the utilisation of the Earth Magneto-Methodology are available such as the booklet "Der Orga-Urkult (Erdmagnet Kultur)"<sup>4</sup> from 1935 released by Gustav Winter in Germany.

It claims that one can achieve threefold healthy harvest on all soils without any addition of fertilisers or professional care by using these natural forces.

In the following, we would like to give a brief summary about the findings and the descriptions put forward by Gustav Winter. The booklet doesn't state who invented of the mentioned use of the Earth Magneto was. There are some sources claiming that it was Gustav Winter himself, and we assume it is true.<sup>5</sup>

Gustav Winter discovered that a much stronger growth of weeds generally occurred between railway tracks if the tracks ran in a north-south direction. But, because there are quite a few other factors involved, not mentioned in the booklet, he stated that this was not necessarily happening in every case.



Figure 67

He started to experiment and to simulate the railway setting with iron tracks and sleepers in his own garden. He, then, seeded his crop plants (e.g. vegetables, etc.) in the usual manner, but now between the sleepers. Over the first three years, he noticed that he had a greater yield, without the use of manure or chemical fertilisers. He needed three years of this type of development. He did not water during dry periods, nor did he plough the ground nor prune the plants, such as removing side shoots. The plants were not only better and healthier, but the yield was three times bigger than those of the usual market gardener or farmer.

Then he commenced to experiment in simple and sandy soil by using galvanised iron wire on the ground, again in north-south alignment. He found that a weak current was flowing through the wires. But this phenomenon was often more fluctuant than constant.

Gustav Winter improved his arrangement and found out that the big yield could only be achieved under certain conditions, which he did not explained. If the construction is put in place correctly (again not precisely explained), there will be an immediate rampant growth. He points out, that you cannot use copper wire, which is a sign that magnetic forces are being used in his construction. He found that when an earth-magnetic field takes place, a light heating of the soil is observable, which helps the plants during frost periods.

The author explains that, if the soil is infertile within his earth-magnetism arrangement, there is still a chance of nutrition intake through the plants themselves. The plant is not provided as usual with nutrients, for instance nitrogen, through their roots. Instead, the needed substances are sucked from the atmosphere by the leaves, like a lung function.

The growing season is shortened by one third or up to two thirds. This allows more harvesting. Due to its health, the plant is much more resistant regarding weather conditions and attacks by parasites.

Explicitly, it is noted that artificial interventions, namely watering, trimming, fertilising and transplanting, are not only superfluous but also often have harmful effects. The growth of weeds increases too and will, therefore, need stronger regulation. It is stated, that plants will build up nutrient reservoirs in the soil around themselves and thus improve the soil.

The Earth-Magneto culture may also have its drawbacks during the formative years, e.g. the strength of the current in the system increases day by day, so that the arrangement has to be scaled down to impede too much growth. So, Gustav Winter found out that the power of his system had to be regulated.

In regard to the "Orga-Urkult", Gustav Winter is referring to the use of the general Magnetism of the Earth as a natural force, for which detailed knowledge and capabilities of measurements were, at that time, still in their infancy.

It is worth mentioning that, unfortunately, detailed descriptions of the installations, which would enable a reproduction of the experiments conducted by Gustav Winter, are not given in the booklet. However, the implications for practicing permaculture principles in a market garden can be easily understood, but are subject to scrutiny.



## Electro-Culture

Adolf Hoops, an organic vegetable farmer of Duishorn near Waldsrode, Germany, was among the first practitioners Declan Kennedy contacted regarding the use of electric current in garden and farming.

In the northern German climate zone, in the 1970's and 80's, he used 12 volt electric currents in his single skin plastic greenhouse tunnel in order to propagate his early spring vegetables and salads. He, thereby, had an earlier start for his Bio-veggie marketing, supplying the few (at that time) organic shops and many private customers in nearby Hamburg, Bremen and Hanover. This didn't make him rich but he certainly managed to survive as a purely organic farmer, with a dozen co-workers or family, at a time where there were as yet no government support or subsidies for naturally producing market gardens.

In the 19<sup>th</sup> and 20<sup>th</sup> centuries, there was already a lot of research being done on the influence of electro-magnetic fields on the growth-pattern of plants. For example, stunning results were achieved by Justin Christofleau, and there were many papers and articles published in French, German and English.

In the book "Electroculture" Justin Christofleau is quoted saying that Abbe Nollet seems to be the first scientist who noted the effects of electricity on vegetation, as far back as 1749. <sup>6</sup>

Unfortunately, by the middle of the 20th century, these ideas and written testimonies were suppressed and had vanished from the common consciousness due to industrial and monetary interests. <sup>7</sup> But still some people kept privately experimenting with these ideas.

Jörn Strauss, the co-author is preparing to publish a series of Internet links on *electromagnetism and agriculture*, and intends to expand this as more knowledge comes in. These will be found on Declan Kennedy's website<sup>8</sup> [www.declan.de](http://www.declan.de) to enable those interested to investigate the subject further. Comments are welcome.





## Acknowledgements

I would like to thank all the helpers in this project over the ten years. Those that spent more than two days: preparing and planting the Suntrap on PaLS were:

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Christine Augsburg	Declan Kennedy	Dietmar Borreck
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Helga Wuttke	Kai-Uwe Salzwedel	Mareika Smaluhn
Marlene Oelkers	Petra Siebeck	Petra Völker
Roland Wolf	Tim Putzke	Thomas Koopmann

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Anne Brockhaus	Charlotte Hobbs	Christine Augsburg
Clara Marie Hencke	Declan Kennedy	Dietmar Borreck
Doro Röhler	Gisela Reinecke	Hans-Albert Bremer
Margrit Kennedy	Roland Wolf	Thomas Koopmann

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Anne Brockhaus	Annette von der Werf	Brittany Elderken
Charlotte Hobbs	Clara Marie Hencke	Declan Kennedy
Dietmar Borreck	Elias Riether	Jörn Strauss
Kamli Wolf	Kaya Deisberg	Miriam Kaiser
Roland Wolf	Patrick Schulte	Til Sauerwein
Tim Smaluhn	Ute Giesecking	Wolfgang Onnen

There were many more (whose names I have forgotten) who put an hour or two in: to preparing the site and the soil, planting the individual trees and supporting these above-mentioned workers with coffee, lunch and tea breaks – but also those who shared with us their machines and tools. They were mostly members of the Lebensgarten Ecovillage, the ABRO group or of the nearby village of Steyerberg. They also included employees and interns of the PaLS company. And, of course, we are grateful to all the donors from here and abroad – and the visitors who were came for guided tours of the PaLS plot, being introduced to the many new concepts and methods. They gave us lots of positive feedback and constructive criticism. Sometimes they brought music or dance with them, wearing bright colours, smiling at us, laughing with us at some of our often crazy considered attempts – but every little contribution helped over the years.

To all of them my heartfelt Thanks! Declan Kennedy

## References

<sup>1</sup> <https://permakulturpark.de/>

<sup>2</sup> <https://www.lebensgarten.de/>

<sup>3</sup> Clara Marie Hencke, Ergänzende Planung zu einer Sonnenfalle, 2015/2016

<sup>4</sup> Gustav Winter (under the alias "Platon"): Der Orga-Urkult (Erdmagneto-Kultur), Verlag Wahrheit und Recht, 1935

<sup>5</sup> <https://www.naumburg-geschichte.de/geschichte/winterg.htm>

<sup>6</sup> Justin Christofleau, Electroculture, Perth W.A. Alex Trouchet, 1927?

<sup>7</sup> <https://www.electroculturevandoorne.com/>

<sup>8</sup> <http://www.declan.de>



In the extensive zone of the Permakulturpark am Lebensgarten Steyerberg (PaLS) it was necessary to find an alternative solution to the normal ways of planting and maintaining fruit trees because the fine sandy soil had so little or no nutrients. Additional compost or fertilizer would be quickly washed away by even medium heavy rain so deep that it would not be even available for the fine roots. This, one could say was the main motivation to get something like the Earth-Magneto method under way.

As a practitioner of Radiesthesia (e.g. divining for water and ley lines) and Geobiology (e.g. ascertaining the interactions between the Earth and the biosphere), Declan Kennedy had quite a lot of experience in working with under-earth-surface electro-magnetic fields (produced by under-surface water channels and streams bashing against small stones and other obstructions). He was motivated to change the usually perceived negative effects of this phenomena (e.g. a ley line is bad news under your bed) to a possible positive effect: harnessing of the north-south electromagnetic field – which exists naturally everywhere – to improve the growth of plants.

A special group around Declan within PaLS started this Earth-Magneto Project within the extensive zone in 2011. Here they decided – in the design process – to include a "no-work-gardening" experiment in raising fruit and nut trees. This suggestion was quite a challenge to implement in this fine soil. Their goal was to have a middle-sized orchard in poly-culture that, after a not-too-intensive planting period of a year or two that would take care of itself. They based it, more or less, on the experience of Gustav Winter from the 1930's.

