



NFM Test and Trial

Natural Flood Management  
case study series

# Viticulture Test and Trial Case Studies

A series of 8 reports based on interviews with farmers.



# Case Studies

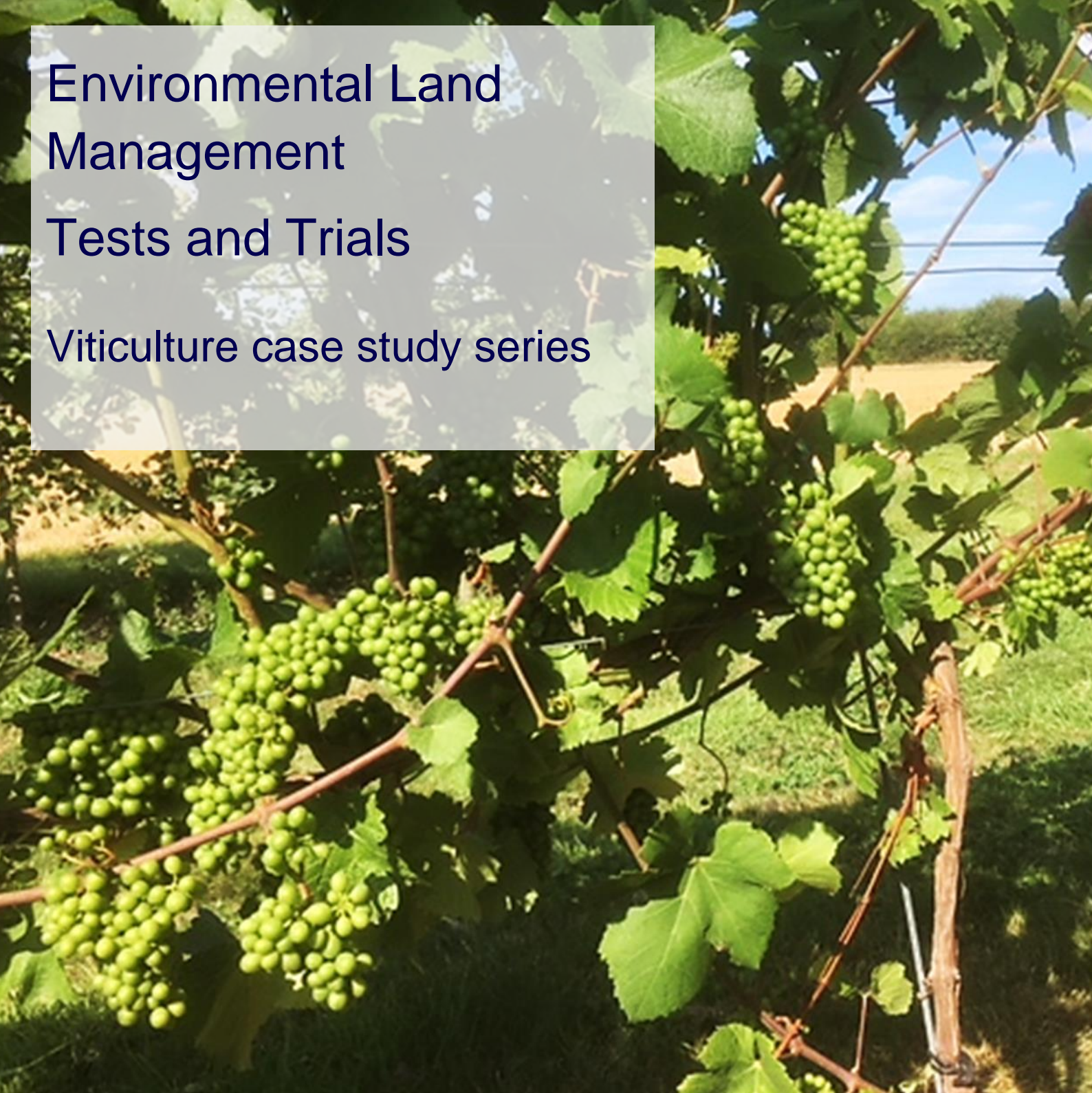
This report consists of a series of 8 case studies based on interviews with farmers and viticulturists. They all took place in 2020 and 2021 as part of the Viticulture Test and Trial that was conducted by the Kent Downs AONB Unit.

Seven of the case studies involved conversations about best practice to help inform the proposed actions within the Test and Trial. The final interview discussed how the farmer felt the proposed actions could be implemented on their land.

Vineyard or Farm	Interviewee	Date
S C Berry	Tom Berry	23 <sup>rd</sup> May 2020
Plumford Farm	Simon Elworthy	28 <sup>th</sup> May 2020
Albury Vineyard	Nick Wenman	17 <sup>th</sup> June 2020
Chartham Vineyard	R Waller and R Goodenough	22 <sup>nd</sup> June 2020
Breaky Bottom	Peter Hall	12 <sup>th</sup> August 2020
Rathfinny Vineyard	Cameron Roucher	12 <sup>th</sup> August 2020
Nyetimber Farms	Ben Kantasler	23 <sup>rd</sup> February 2021
<b>Actions Case Study</b>		
Plumford Farm	Chris Elworthy	20 <sup>th</sup> May 2021

The Viticulture Test and Trial is being carried out by the National Association for the Areas of Outstanding Natural Beauty on behalf of Defra and delivered by the Kent Downs AONB Unit.

Environmental Land  
Management  
Tests and Trials  
Viticulture case study series



## SC Berry (Brenley)

**Interviewee**

Tom Berry

**Interview date**

23<sup>rd</sup> May 2020



**Kent  
Downs**

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**FARMING FOR  
THE NATION**  
AONB Tests & Trials  
for the ELM Scheme



# SC Berry (Brenley)

SC Berry (Brenley) is a family run business. It was taken over by the Berry's in late 1800's as a mixed farm of fruit, hops, arable and cattle on the outskirts of the Faversham. The business has since expanded and diversified but farming is still fundamentally the main activity covering around 400 acres. In 2012 they planted their first vineyard and since, with further plantings, they are now growing a total of 24 hectares of vines. The business has growing contracts with Chapel Down and a number of other companies.

## The importance of farm payments

SC Berry (Brenley) currently access the Basic Payment Scheme across most of the farm. It has Mid Tier Countryside Stewardship agreements and Higher Level Stewardship agreements on prime chalk downland adjacent to the site of the vineyards. It is felt that the money that is received through these schemes is fundamentally important to the future economic viability of the farm. It is considered vital that the Environmental Land Management (ELM) scheme allows farms to retain similar levels of funding. This is essential to support sustainable farming for viticulture and add public value to the improvement of biodiversity in the protected landscape habitat.

## Why should I participate?

As food producers and a vineyard owner S C Berry offer a 'beautiful well kept garden feel' to the landscape which is well maintained and organised, but not forgetting biodiversity with beautiful wildflowers and perches for raptors..

It may well be that if they were paid for enhancing the natural habitat for flora and fauna, and engaging with the public in the form of education, the local community would feel it was a benefit.

S C Berry feel that it is fairly critical that funding is kept to a similar rate and increases exponentially

although the fallow areas are losing £80 per acre at the moment.

## Public Goods

### ~ Soil

S C Berry don't disturb the soil but strim under the vines, so the wildflower meadows are regenerated. They would consider grazing with sheep if the vineyard was fenced, that could be funded by ELMs. The use of sheep grazing would reduce soil compaction.

### ~ Mitigation of and adaption to climate change

S C Berry double up when undertaking passings in the vineyard by using a crimper roller behind the tractor while using the front linkage. Electric ATVs for using round the vineyard would be very useful when available. Prunings are mulched in rows. Spraying is reduced using precision viticulture, spraying at point of need rather than preventatively. They use a mechanical weeder and glyphosate to scorch the grass rather than kill it.

Frost has hit hard this year, previously it has been dealt with well. The best methods are to plant on a bank so frost naturally drains, also to cultivate your soil and then roll it and it stays warmer. Some vineyards cultivate every other row, with grass in the other rows although this would create more runoff and soil erosion. This is being widely advised



as good for frost protection but S C Berry do not agree as normally we have enough water in this country and secondly for cultivated ground you can scorch the grass with herbicides and it will grow back later on in the year. Zero tillage is important. Looking at the benefit of using drones to combat red spider mite would be favoured by dropping a small packet of active ingredient onto the hot spot to eradicate the offending pest. The use of drones, rather than driving would greatly reduce carbon emissions.

#### **~ Protection from and mitigation of environmental hazards**

Equipment has been bought to eliminate herbicides, a sulphur duster to deal with powdery mildew etc. They are considering an ozone machine which would be good for pest control.

#### **~ Thriving plants and wildlife**

There is the most beautiful chalk downland wildflower meadows across the whole farm and people come just to photograph it for its beauty. Species rich chalk grassland wild flowers have been sown round the headlands, and they are debating whether to let them regenerate or not within the rows. The soil is very rich so some of the stronger grasses and weeds may express themselves and take over the sward. Seed could be collected from our Higher Level Stewardship meadows in the neighbouring field and used as green hay for seeding. Some of the species in the sward from that field are tall and may cause some humidity problems.

#### **Key points from the interview**

- The species rich sward is very important and can provide services that are public good, the local community come just to photograph it for its beauty
- The reduction of passes through the vineyard for fungal and pest control by the reduction of pesticide usage will greatly reduce carbon.
- ELM has the opportunity to provide a more holistic vineyard which is supported by finance to farmers so long as it does not reduce the previous level of funding through the Basic Payment Scheme.

This case study examines Viticulture Opportunities as one of three Environmental Land Management Tests and Trials managed and run by the Kent Downs AONB unit on behalf of the National Association of AONBs.



Barns are left for bats and owls to live in a natural state and there is a dedicated owl box in the oast. Next to the vineyard there is a hop garden and the poles are great places for raptors such as the buzzard to sit. In fact the hop garden is called Buzzard Garden since they are always seen sitting on the posts there.

Deer would create a problem but they have not penetrated as far as the farm, badgers are close to the vineyard but do not seem to cause a problem. Starlings have created severe damage, up to one tonne of grapes lost through starling damage.

If S C Berry were to do any additional cover cropping, subsequently having scorched the soil perhaps they could plant phacelia into the grass crop in the corners which are not cropped with vines.

There is connectivity for wildlife between the vineyards and the surrounding woodland as well as the areas surrounding the vineyard which have been left as set a side. Upon reflection, they are unsure why they had planted Italian alder rather than native species.

#### **~ Beauty, heritage and engagement**

Vineyards surrounded by hops and orchards sit well in the landscape character in Kent with the surrounding wooded areas.

Together with the B&B business S C Berry undertake guided tours of the farm for our visiting guests and would undertake collaborative activities with the neighbouring vineyards.





**ENVIRONMENTAL LAND  
MANAGEMENT TESTS AND TRIALS**

**VITICULTURE CASE  
STUDY SERIES**



# Plumford Farm

**Interviewee**

Simon Elworthy

**INTERVIEW DATE**

**28 MAY 2020**



Area of Outstanding Natural Beauty



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# Plumford Farm

The Elworthy family have been farming Plumford Farm on the outskirts of Faversham as a mixed farm for over 50 years. The business has more recently diversified into viticulture but fruit farming is still fundamentally the main activity with arable covering around 153 hectares. In 2018 they planted their first vineyard and since, with further plantings, they are now growing a total of six hectares of vines.

## WineGB – Yes or No

This business has been part of LEAF, Red Tractor, Tesco's Nuture and Waitrose assurance schemes and does not feel it is viable to join WineGB since they are already fulfilling the required protocols for viticulture environmental sustainability within the other schemes and the cost of joining is too high for a small area.

## The importance of farm payments

Plumford Farm Ltd currently access the Basic Payment Scheme across most of the farm with large areas of Higher Level Stewardship on prime chalk downland close to the site of the vineyard. It is felt that the money that is received through these schemes is fundamentally important to the future economic viability of the farm. It is considered vital that the Environmental Land Management (ELM) scheme allows farms to retain similar levels of funding. This is essential to support sustainable farming for viticulture and add public value to the improvement of biodiversity in the protected landscape habitat.

## What an Enhancing Viticulture ELM could pay for

It is also felt that ELM's should be across the whole enterprise including ancient woodland. Where there are small areas next to footpaths and

headlands which are less than 4m wide but extending to the full length of the field and field corners these should be included in an ELM. In some cases these areas have a larger biodiversity value being the transition route for wildlife corridors across the farm. At the moment they are excluded since they do not fit the dictated profile of what is required for Countryside Stewardship.

## Public Goods

### ~ Clean and Plentiful Water

There are grass strips and headlands which collect any run off and are slow leaching. They pulvise prunings which improves the quality of the soil and have a bore hole and water could be collected from the buildings since they are all interconnected. Plumford has a biobed which is used for cleansing the wash down water which has been found to be very effective. The vineyard is on high ground and therefore there are no streams or rivers and therefore no need for LERAPS.

### ~ Clean Air

The vineyard is carbon neutral and it absorbs more carbon than it emits. It forms part of a research project using a drone to monitor the blossom in the orchards which in turn when an app is written could be used for the vineyard to determine possible fungal infection etc. Plumford



Farm undertake as few passes as possible with the tractor and this forms part of the LEAF marque. They planted alder on one side to protect the vineyard from a very young age since it would suffer from severe wind damage on the top of the Downs.

#### ~ Soil

No fertiliser is used in the vineyard. Herbicides such as glyphosate and shark are used once in the year. Strimming under the vines can be undertaken if a further pass is needed. They are using natural regeneration in the vineyard rather than sowing a grass sward as many of the vilticulturalist do. Certain chalk grassland wildflowers such as self heal and black medic are more advantageous due to their prostrate growth reducing the possibility of humidity in the rows.

#### ~ Mitigation of and adaption to climate change

Plumford has two frost busters which blow hot air over the vines and this year have not suffered from any frost damage unlike the majority of other vineyards. They have data loggers and two weather stations all attached to the mobile phone network. No cultivations take place with this natural regeneration.

#### ~ Protection from and mitigation of environmental hazards

Biological control is used - traps indicating if there is a need to spray. They undertake an environmental impact assessment which is required under the LEAF marque.

### Key points from the interview

- When a farm is on chalk grasland, natural regeneration of the seed bed is beneficial in creating the natural habitat within the rows of the vines,. If there is a concern for increased humidty plant the rows at a wider spacing. Do not disturb the soil before planting.
- All areas of the vineyard need to be included in the ELM since often the areas round the vineyard are a haven for wldlife no matter how large or small.
- Underake as few passes as possible and only if definitely required. The oppourtuny to use drones for vineyard management would be beneficial.

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#### ~ Thriving plants and wildlife

Plumford Farm promotes the regeneration of the natural seed bank and also have a nectar strip on the south side of the vineyard. The areas which are not planted to vines could be wildlife havens with insectary plants, all vineyards have them. There is an ancient wood and native hedge already surrounding the vineyard and they carry out a landscape habitat survey/mapping of the farm. This is undertaken by Natural England under the HLS agreement.

#### ~ Beauty, heritage and engagement

Plumford Farm is prepared to allow increased access to their land to receive ELM payments and feel that there could be several ways that this could be achieved. Under ELS and HLS they have a permissive route which was funded by the treasury direct. Following the same format this would be acceptable Possible educational walks in collabration with the community if there was a specialist who was interested in undertaking the controlled walk. Good information boards are needed for these activities. Social media has a huge following. An instagram account is creating a lot of interest, maybe a virtual walk round the vineyard through the seasons as an educational tool. Health and safety needs to be addressed for any visitors to the farm.

#### ~ Research

Plumford Farm is already participating in research using a drone to investigate how it can be used for the scanning of blossom in the orchard in collaboration with East Malling, Seymour's and Inovation UK.

Row crops should be funded as a total package not just vineyards.



# ENVIRONMENTAL LAND MANAGEMENT TESTS AND TRIALS

## VITICULTURE CASE STUDY SERIES

# Albury Vineyard

"Ever since I was old enough to drink wine, I have always dreamt of owning a vineyard. It's taken me more than 40 years to get there but I'm now lucky enough to have fulfilled my dream. "

Nick Wenman, Vineyard Owner

### **Interviewee**

Nick Wenman

### **Interview Date**

17th June 2020



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# Albury Vineyard

**Albury Vineyard** is situated on the southern slopes of the North Downs in the beautiful Surrey Hills AONB, with the North Downs Way running to the north of the vineyard. Albury is a family-run vineyard and was planted in 2009 with the traditional Champagne varietals of Chardonnay, Pinot Noir and Pinot Meunier, as well as some Seyval Blancs and Pinot Gris.

Nick believes that key to the success of the wines is the vineyard's commitment to organic and biodynamic principles and the passion for quality wine. They also have a talented vineyard manager Alex, one of the few female vineyard managers in England whose expertise is vital to the running of the vineyard. They are committed to producing organic fruit without the use of chemicals such as herbicides and fungicides, and produce English wine of the highest quality, a still rosé and quality sparkling wines. However, it was their still Silent Pool Rosé that first put Albury on the map, having been served on the Royal Barge to celebrate the Queen's Diamond Jubilee in 2012. Albury Estate wines now feature on the wine lists of some of the country's best restaurants and have won numerous gold awards in prized international wine competitions.



## ~ WineGB – yes or no?

Albury Vineyard is a member of WineGB and is a certified member of the WineGB Sustainable Wines of Great Britain (SWGB) with a focus on sustainable best practice on their vineyard. They are also part of the Vineyards of the Surrey Hills and work closely with the AONB on biodiversity.

## ~ E.L.M.

Albury feels that realistically feel they will probably need a basic rate per hectare to manage the scheme and then the ability to add on different interventions when activated. Finance is important but it needs to be long term.

## ~ Soil

Albury believes that organic viticulture produces better quality fruit and ultimately better-quality wine. Growing vines organically means that they avoid the use of artificial pesticides, but they do use organic pesticides.

Albury is one of the only a few UK vineyards to follow biodynamic principles on the vineyard. Biodynamics excludes the use of artificial chemicals but encourages soil fertility and plant health by using compost teas and biodynamic preparations. For example, each winter they bury cow horns filled with manure on the vineyard. They are then dug up in the spring and the contents sprayed on the vineyard to improve fertility, this is well recognised action.

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It is being recognised across the world that the soils of vineyards which follow the biodynamic method are of a much better quality, it is the difference between living and dead soils.

Albury are certified organic and biodynamic by Demeter.

### ~ Clean and plentiful water

The vineyard harvests rainwater and runoff is not a problem since they have sward between the rows and drainage at the bottom of the vineyard. They spray more often than a conventional vineyard (little and often); up to 20 times a year. They are working on reducing this by amalgamating spraying with mowing.

### ~ Protection from and mitigation of environmental hazards

Albury use the SWGB carbon calculator over the whole business as part of WineGB. They are looking at various different methods of frost protection including spraying water and using an electrical wire along the wire line. At the moment they use bougies. The vineyard has weather station alarms and temperature sensors; however, they are considering planting frost resistant varieties, chardonnay suffers particularly.

### ~ Thriving plants and wildlife

Wildlife is of great interest to the vineyard with native species and wildlife an important factor. They feel that this is basic good practice and should be long term. All vineyards should do this. They have planted pollinator rich species for biodiversity and the small blue butterfly returned last year after an absence 40 years.

## Key points from the interview

- Biodynamics encourages soil fertility and plant health with the exclusion of artificial chemicals.
- Growing native rich pollinator species is basic good practice for all vineyards.
- If the site is susceptible to frost, consider planting frost resistant species.
- Open site to all with various forms of entertainment to educate the community.

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There are beehives in the vineyard, and they also run bee keeping courses for those who are interested.



The vineyard is surrounded by native trees on three sides of mixed varieties. They use FWAG for undertaking a landscape habitat survey of the vineyard with mapping.

### ~ Beauty, heritage and engagement

At the top of the vineyard there is a viewing platform for visitors which stands close to where the North Downs Way runs. The vineyard rows run from the top of the Downs to the valley bottom where they use wooden posts at the ends of the rows and metal within the rows. This doesn't impinge so much on the landscape if you are viewing it from the North Downs Way.

Albury offers seasonal vineyard tours and tastings with cheese, operas and jazz in the vineyard, pop-up restaurants and food & wine matching experiences. They aim to provide a friendly, informal environment in which to experience many activities for all ages in the vineyard.

On a Saturday they can have up to 200 visitors in a controlled way and also offer education for young people.



# ENVIRONMENTAL LAND MANAGEMENT TESTS AND TRIALS

## VITICULTURE CASE STUDY SERIES



# Chartham Vineyard

## Interviewee

Rosalind Waller and Richard Goodenough

## Interview Date

22<sup>nd</sup> June 2020





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# Chartham Vineyard

**Chartham Vineyard** is part of Burnt House Farm located just outside the historic city of Canterbury. It is a family-owned vineyard and was established in 2013 by Roz Waller, a former GP and her husband Richard Goodenough, a former University lecturer.

The first vineyard at Chartham was recorded in 1303 at Deanery Farm, established by Prior Henry of Canterbury Cathedral, these records are held in the Cathedral Archives detailing its maintenance costs. Chartham Vineyard, a neighbouring farm, was started 710 years later, this is part of Burnt House Farm which has been in the Waller family for 70 years. The original mansion burnt down in 1730, leaving its ancient farmyard and Dovecote, now a scheduled monument standing next to the demonstration vineyard.

The farm extends over nearly 40 hectares of land and is a mixture of arable, pasture, coppice and ancient woodland. Today 2½ hectares of arable is given over to vines where the soils match the terroir of the Champagne region of France. The vineyard was planted with Chardonnay, Pinot Gris, Bacchus and Pinot Noir vine varieties from France/Germany with rootstocks and clones suited to the soil, location and cool maritime climate. As custodians of this land, the owners have a great respect for traditional vineyard practices, combined with a modern approach to winemaking and are anxious to adopt sustainable methods in both vineyard cultivation and the processing of the grapes that will reduce environmental impact and promote biodiversity. Chartham Vineyard have cultivated excellent links between their business and the local community and appreciate the reciprocal benefits from these



links.

## ~ **WineGB membership**

Chartham Vineyard are part of Wine GB's Sustainable Wines of Great Britain and are also in Higher Level Stewardship. Their focus is on sustainable best practice on their vineyard.

## ~ **Soil**

Soil is especially important to them; they have native mixed hedgerows round the vineyard with wide headlands. They have planted Italian alder between the rows of vines. To the

west and south of the vineyard they have a scrub area. They use dried chicken and sheep manure pellets in the vineyard as well as mulching the prunings.

## ~ **Clean and plentiful water**

The regeneration of meadows is important to ensure the soil is in good condition to absorb water and mitigate run off. They plan to harvest rainwater.

## ~ **Protection from and mitigation of environmental hazards**

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They are undertaking an environmental impact assessment and have been working with Naomi Rintoul and students from Canterbury CCU to evaluate the soil compaction, chemical analysis, pH, mycorrhizal fungi and worm counts. This ongoing research will help them understand how they can work with the soil and the environment.

### ~ Thriving plants and wildlife

Wildlife is of great interest to the farm. They are working with Nicole Khan who is the Turtle Dove Conservation Advisor for the



RSPB.

They have scrub above the vineyard and to the west of the vineyard. This is the perfect habitat for the turtle doves who visit annually and so they scatter feed supplied by the RSPB.

The family have undertaken surveys of flora and fauna across the farm over the years. The latest being a visit from the Kent Botanical Recording Group. The sward has been generated from the seed bank present in the soil for the vineyard alleys and the headland margins. Chartham Vineyard are already undertaking a landscape habitat mapping programme on the farm.

### ~ Beauty, heritage and engagement

Chartham Vineyard has a demonstration vineyard and undertake guided tours but not self-guided because of the danger of crossing the busy A28 road. They are working with the local primary school and the head of geography at Kings School in Canterbury who brings pupils out to learn about the vineyard. Work is underway to develop educational walks round the vineyard and the farm.

To promote their work, they take part in the Canterbury Festival with various activities and tastings as well as supporting charities with their viticulture work.



### Key points from the interview

- Working towards greater biodiversity and ensuring their vineyard is wildlife friendly.
- Looking after the soil through good management practices which is the key to success.
- Working with local educational establishments in the implementation of experimental practices and research.
- Working with the local community is good for promotion, education and the community.

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# ENVIRONMENTAL LAND MANAGEMENT TESTS AND TRIALS

## VITICULTURE CASE STUDY SERIES



## Breaky Bottom Vineyard

“I didn’t invent the name! The South Downs are full of bottoms – dry chalk valleys. Breaky Bottom has been here since Domesday.”

PETER HALL | WINEMAKER

### Interviewee

Christina Hall and Peter Hall

### Interview Date

12 August 2020



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# Breaky Bottom Vineyard

**Breaky Bottom Vineyard** is located nestling in a fold of the South Downs National Park at Rodmell close to Lewes. From very humble beginnings farming in a remote location in the chalky South Downs, Peter Hall has created the world class wines of Breaky Bottom.

The holding is made up of a six-acre vineyard surrounded by steep hillsides of species rich chalk downland grazed by sheep. The traditional flint barn and farmhouse, originally built in 1827, form the boundaries of what was once a winter cattle yard. Sheep have been part of the life at Breaky Bottom for hundreds of years. The original people who lived on the farm were shepherds.

Peter started his business from a remote, peaceful setting with a dilapidated old stone cottage without any facilities apart from a standpipe for water. In 1974 he planted the vineyard with four acres of Muller-Thurgau and Seyval Blanc. The 1990 vintage Seyval Blanc won a Gold Medal in the 1993 International Wine Challenge. Twenty years on from when he began farming, he started to produce sparkling wine from the Seyval Blanc grapes which was released in 2000 as 'Millennium Cuvée Maman Mercier', dedicated to his mother. He has since focused purely on sparkling wines, adding the three Champagne varieties in 2002 and 2004. Fifty years on in 2020 Peter won five gold awards and two silver awards for his wines in the WineGB Awards.



## ~ E.L.M. - Yes or No?

Peter and Christina are passionate about looking after the countryside and would definitely participate in the scheme that rewards environmental benefits. It would be good to have a contact for answering questions and they would like simplicity and less paperwork. If education was funded, it would be so worth joining. However, the funding needs to recompense the smaller farmer as well as the large farmer. At the moment it does not.

## ~ WineGB

Breaky Bottom Vineyard is part of Wine GB, it is also in Higher Level Stewardship and focuses on sustainable best practice 'to conserve wildlife, maintain and enhance landscape quality and character and protect the natural environment.'

## ~ Clean air

Christina and Peter think about how they manage their farm. They only have one tractor which is hardly used and most of the work is done by hand. They have undertaken tree planting and planted native species wind breaks.

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### ~ Clean and plentiful water

The openness on the crest of the downs above the vineyard has caused some problems with farm management. They have suffered from floods from total runoff from the land above their holding which needs to be addressed by growing the right crop and managing the soil appropriately.

### ~ Protection from and mitigation of environmental hazards

Peter keeps his spray applications to a minimum. In 2020 he made four applications during the whole year; it can be done. He also uses wooden post for supporting his vines.



### ~ Thriving plants and wildlife

Peter is a bird enthusiast and life long bird watcher. He has 40 nest boxes round the vineyard. He welcomes most wildlife. However, they have had problems with pheasants from the neighbouring farm shoots where they have devoured the equivalent of 30,000 bottles of wine. Peter also has a flock of 40 breeding ewes which he uses to graze the vineyard throughout the winter and the steep banks during the summer months.. They have dug

a wildlife pond for everything including hedgehogs. The barn owl and little owl are flying well as well as a tawny owl which has found the trees which were planted when they first took on the farm.

### ~ Beauty, heritage and engagement

*“Virginia Woolf used to walk the track above Breaky Bottom– ‘I found the loneliest of valleys with silver sheep clustering on the sides, hares leaping from my foot....”*

Christina is a partner in the business and works alongside Peter and the team throughout the year. As well as supporting the work in the vineyard and winery, she shares a love of the countryside and the wildlife by hosting visits from local schools. Education is so important to them. Not only do they work with the schools they run courses for the local community. More could be undertaken if only there was some funding for transport for children, electric would be best. A link up with public transport would be good and then schools would find it much easier to visit the vineyard.



## Key points from the interview

- Welcome biodiversity and ensure the vineyard is wildlife friendly.
- Welcome the local community and local educational establishments.
- Educate the young and old, there is so much a vineyard can offer.
- Work with the local rangers to help manage sustainably the chalk grassland native species and wildlife in this beautiful landscape.

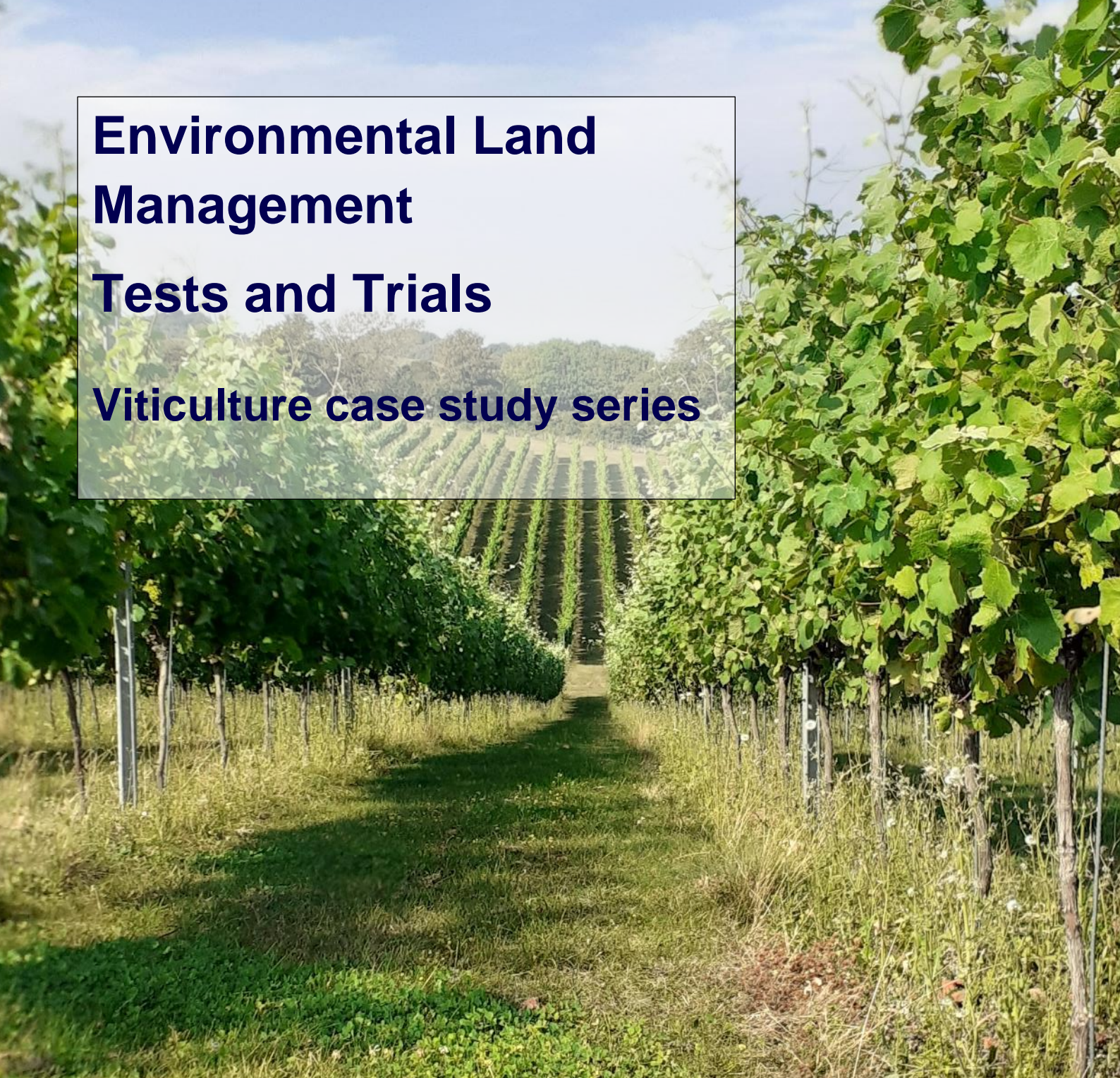
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# Environmental Land Management

## Tests and Trials

### Viticulture case study series



# Rathfinny Vineyard

## Interviewee

Cameron Roucher

## Interview date

12<sup>th</sup> August 2020



Area of Outstanding Natural Beauty



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# Rathfinny Vineyard

**Rathfinny Wine Estate** was established in 2010 on a working arable farm not far from the coast in the heart of the South Downs in Sussex. Their aim was to produce some of the world's finest quality sparkling wines. The first 50 acres of vines were planted in 2012 and to date they have 385,000 vines planted across 93 hectares (230 acres). Eventually they expect to have a total of 350 acres under vines. The estate has planted three principal grape varieties – Pinot Noir, Chardonnay and Pinot Meunier as well as a small amount of Pinot Gris.

The vineyard is just three miles from the English Channel on a site snuggling in the South Downs, where the soil is shallow but fertile, free-draining chalky soil and a unique micro-climate perfect for growing vines. Because of the sensitivity of the setting of the vineyard Rathfinny has been working closely with the South Downs National Park Authority. Cameron Roucher, the viticulturist deems the soil to be the most important attribute for the growing of these vines.



## What an Enhancing Viticulture ELM could pay for

- Good soil for establishment of vines
- Facilities and equipment to enable best practice, i.e. frost protection , energy efficient machinery and robotics
- Planting of trees
- Research and working with research establishments
- Facilitation

## Public Goods

### ~ Soil

Correct soil preparation is arguably the biggest factor affecting vine establishment. The reason is that the establishment of vines is dependent on root growth and, without the correct soil preparation, roots just will not grow or will not grow well. Often vineyards with a yield problem can trace the issues back to poor soil management in the years before and just after planting. Critically, once vines are planted it is very difficult to influence

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the conditions of the soil where the roots are, therefore leading to further problems.

Like any plant, vines need certain amounts of, and balance between, different nutrients to enable sufficient shoot growth and fruit maturity. Soils should be tested for nutrient availability, and again if needed, use an expert to interpret results. Nutrient deficiencies should be dealt with prior to planting. Ensure there are sufficient Nitrogen(N) Potash (P) and Potassium (K) prior and in the first development years as this will encourage strong growth and maximise leaf area. A cover crop should be planted in the field prior to planting a vineyard, something deep rooting like mustard or chicory can be a good choice, fast growing with lots of organic matter that can be worked into the soil before planting. Green manure crops improve soil structure especially those with a deep root system: they help break weed cycles and prevent erosion which is vitally important in any farming system.

Rathfinny felt that there were a lot of restrictions in the previous stewardship schemes but participated in a mixed sward trial with the University of Sussex which received good data. However, the results showed that the sward was too long and created too high levels of humidity. The sward needs to be low growing.

### **~ Mitigation of and adaption to climate change**

Climate change is affecting wine growing and one area to be addressed is erosion. Erosion is not only limited to vineyards planted on lighter soils, but it can also be exacerbated by poor practice. Protecting the soil from erosion is essential to the life of the vineyard. Many vineyards are now moving towards mechanical weeding rather than the use of herbicides. While this is seen as the sustainable option, it is not necessarily so for the life of the soil. Erosion can have a large impact on nutrient since the bulk of the soil's organic matter, nitrogen and phosphorous are located in the upper few centimetres and can easily and quickly be depleted.

Management systems that maintain some vegetation without disturbing the soil can effectively control a lot of any potential erosion problems. Rathfinny do not cultivate, but do apply herbicide below the vines, one early in the season and one later.

Drainage is very important since the heavier clay soils can easily become waterlogged, suffocating the roots of the vines with the lack of oxygen and, as a result, the vines die, however, Rathfinny do not have this problem since the soil is almost pure chalk. Drainage and air penetration is crucial to enable new root growth of the new vines. A good soil structure is vitally important for establishment. Rathfinny treats all wastewater and recycles, they have a borehole which they use for spraying and the winery. They use a bio bubble and are also investigating rainwater harvesting from the roofs. Over the visitor centre they have a sedum and mixed grasses and wildflowers on roof. Grass strips between the rows and headlands to dissipate rainwater.

Rathfinny are looking at softer alternatives to pesticides, Cameron Roucher used to run an organic vineyard.

### **~ Thriving plants and wildlife**

Rathfinny have many mixed species windbreaks with a mixture of field maple, English alder and poplar since they are fast growing. They will plant some other native mixed species for future vineyard development.

A gentleman farmer did not agree with what Rathfinny was doing by planting a vineyard, and Rathfinny's response was that this is the evolution of the landscape. The area was known as the prairie of the South Downs before the vines were planted. To compensate they have planted and amazing 17,000 trees so far. Rathfinny would plant trees in keeping with the landscape but would like funding for them.

The vineyard has an abundance of biodiversity with corn bunting, skylark, swallow and swift, and buzzards. The most recent find has been the Venus's looking-glass, a chalk loving plant with its small delicate purple flowers. The scarlet pimpernel, bladder campion and horseshoe vetch the food source for the adonis blue and wall brown butterfly have both been recorded on the estate. Sometimes brown hare can be seen running between the rows.

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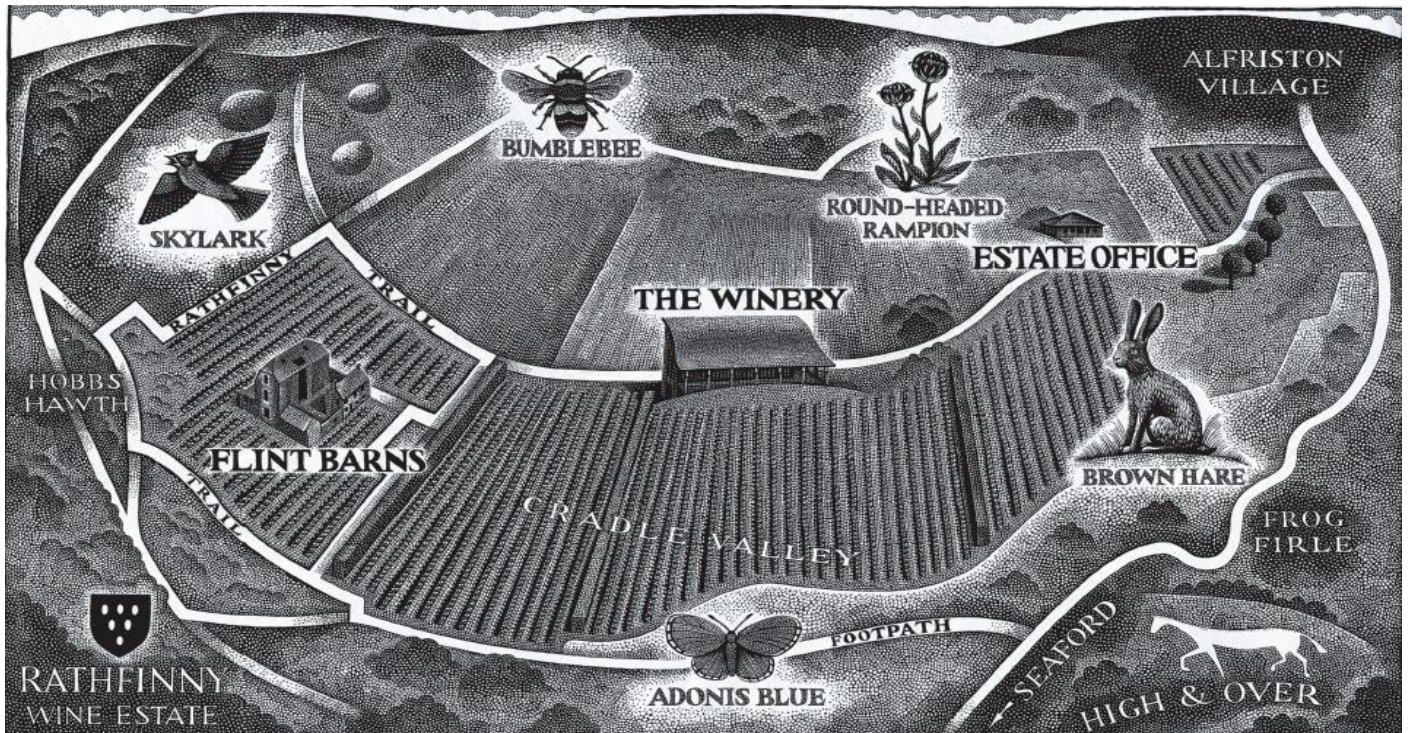


## ~ Beauty, heritage and engagement

There are various self-guided trails up the valley linking in with bridleways and footpaths with an information map which can be downloaded from the website. There is information about the history of the area, the vineyard and what you may see whilst walking around. There are information

boards at strategic points on the walks and three talking posts, one about the vineyard, one about the wildlife and the third about the winery.

There are guided walks around the vineyard as well as the winery with the opportunity for tasting and alfresco dining.



## Key points from the interview

- New vineyards must be planted on only the best sites, do not settle for second best.
- Preparation from the outset is key to the ongoing production of the vineyard.
- Plant a cover crop to improve the soil structure and add as much organic matter to the soil before planting the vineyard.
- Protecting the soil from erosion is essential to the life of the vineyard.
- Look after the soil, it is the key to increasing and maintaining yields.
- Choose your site carefully, vines will grow almost anywhere in the UK, and on several different soil types. However, it is maximising the potential on the investment that is key.

This case study examines Viticulture Opportunities as one of three Environmental Land Management Tests and Trials managed and run by the Kent Downs AONB unit on behalf of the National Association of AONBs.



# Environmental Land Management

## Tests and Trials

### Viticulture case study series

# Nyetimber Farms

## Interviewee

Ben Kantasler

## Interview date

23<sup>rd</sup> February 2021





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# Nyetimber Vineyards

Nyetimber vineyards are running seven vineyards in West Sussex, Hampshire and Kent covering an area of 324 hectares. Five of the vineyards are in West Sussex including Amberley - 22 hectares, Tillington - 58 hectares and the rest, 152 hectares at West Chiltington in West Sussex and Hampshire collectively. The first vines were planted in 1988 and the most recent vineyard is at Amberley on the brow of the South Downs. They also have 33 hectares which they are rewilding which was once arable land. All grapes are transported to the wineries in Crawley and West Chiltington.

## Wine GB – yes or No

They are not part of WineGB, but we are a member of LEAF, an international standard. They also support NIAB EMRI East Malling viticulture research because Nyetimber feels it gets far more from the results of ongoing trials, which are indicative of our climate and season.

## What an Enhancing Viticulture ELM could pay for

### ~ Research

Nyetimber would prefer to be in an ELM from the start. It will not create a huge marketing advantage but it should be responsible to the environment which is the main interest. However, the funding is important and the money should reflect the right value for the intervention. The ELM scheme must offer validations, yet what the recompense should be, depends on the goals.

## Public Goods

### ~ Soil

Soil preparation is so important before planting the vineyard.

At Chartham, we initially planted a phacelia, buckwheat cover crop mix to improve the structure and organic matter within the soil. The thin sandy silt soil over deep chalk is not good for holding nutrient capacity so we needed to build structure. Once established we drilled a herb and clover mix with chicory and 30% grasses. Every second row was a grass mix including rye grass. This was to improve the nitrogen and biodiversity over winter. At Thurnham Nyetimber planted a greater percentage of chicory since it was deeper rooting and would assist with drainage and runoff. They





also established a wildflower and herb mix as well as a mixture of grasses in the rows to support the management of the soil and avoid erosion. Cover cropping is great on the heavy soil.

Nyetimber has tried many different growing methods and have found the results are marginal. Organic and biodynamic methods of growing are being trialled at the moment to see how they work.

#### ~ **Thriving plants and wildlife**

At Chartham, Lacton and Boxley the wildflower and grass seed mix is the same and very little mowing is undertaken since they do not want the vineyard to look like a golf course. They do not worry too much about the sward height.

Years 1 - 3 glyphosate is used and then by five years the sward is less competitive. There will be 50% less crop when herbicide is not used initially. In Kent at Lacton Manor Nyetimber have interrow crops including clover, chicory and herbs. They plant slow growing grasses and indigenous flowers

to maintain the landscape habitat. They have red clover in one row and a mix in the next and these alternate.

There is a wildflower meadow around the vineyard rows which was broadcast with various mixes for the specific soil type.

#### ~ **Beauty, heritage and engagement**

In a limited way Nyetimber are partnered with Plumpton College and have 3 - 4 student work placements. They work with Butterfly Conservation surveying and entomologists since they have 2 SSSIs. They also have lots of volunteers at Downes Farm for surveying.

Nyetimber work with the SDNPA and ranger, Simon with hands on services but not the AONB.

Drones are used to map and view and analyse the health of the vines so that disease or viruses can be picked up and stopped from spreading, limiting the need for overall spraying. They use EVI veg index hand held sensor.

### **Key points from the interview**

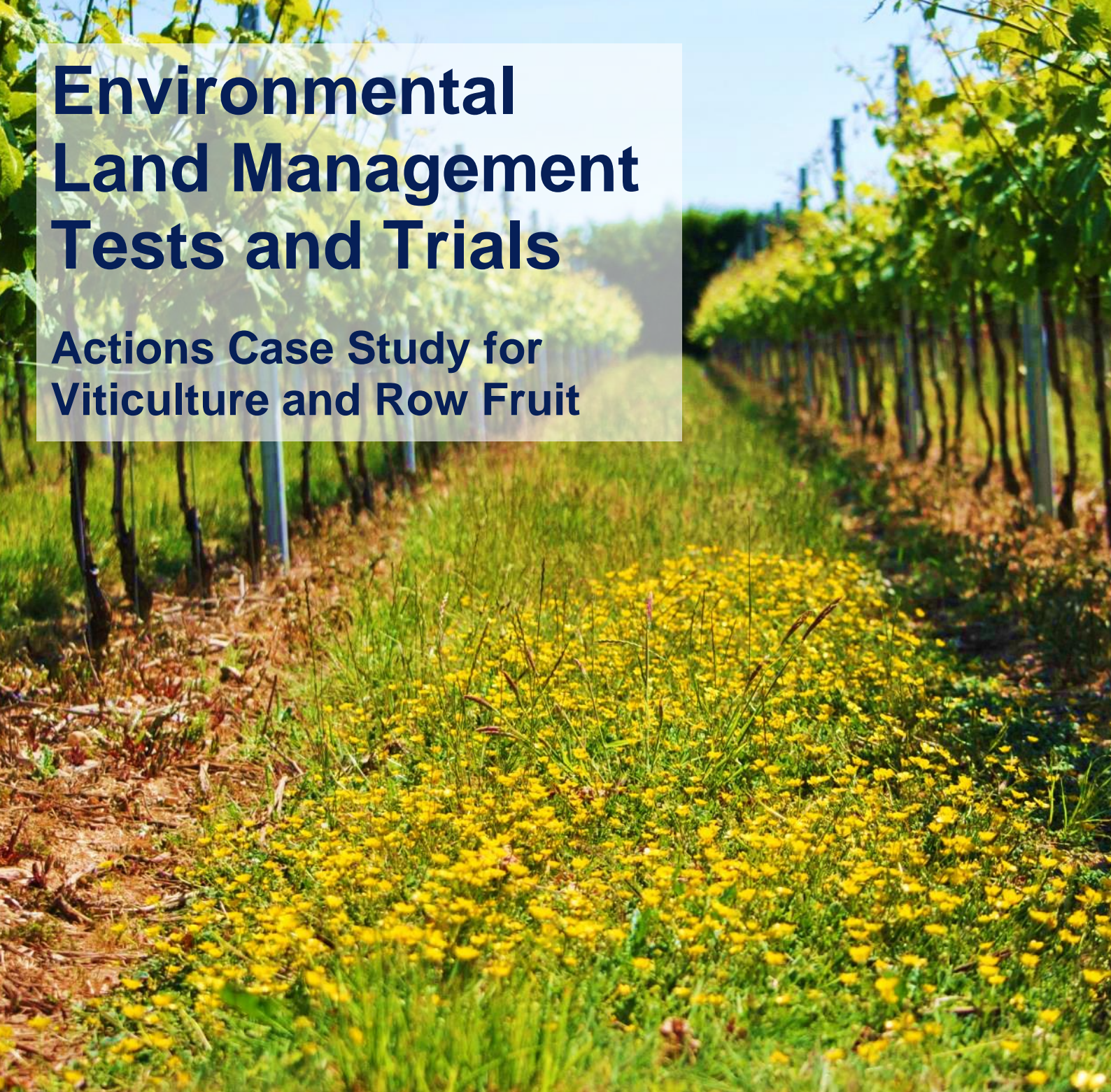
- It is so important to make sure soil is in good condition before planting. This will ensure vines will grow with good vigour and will help to create a holistic environment whilst implementing an IPM plan.
- Choose sward mixture quite carefully ensuring that there is the correct mix for the soil type in the landscape.
- Follow the research being undertaken in the UK and work with the specialist ecological NGOs to keep up to date with new best practice.

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# Environmental Land Management Tests and Trials

## Actions Case Study for Viticulture and Row Fruit



This report was carried out to assess the response of a farm to the actions proposed by this Test and Trial. The farm was asked whether they would be interested in each of the proposed actions and the response recorded.

## Plumford Farm

### Interviewee

Chris Elworthy

### Interview date

20 May 2021



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# Plumford Farm

The Elworthy family have been farming Plumford Farm on the outskirts of Faversham as a mixed farm for over 50 years. The business has more recently diversified into viticulture but fruit and arable farming is still fundamentally the main activity with arable covering 58 hectares, fruit 50 hectares, woodland, wildflower meadow in HLS and vines 6 hectares totalling around 153 hectares. In 2018 they planted their first vineyard and since with further plantings they are now growing a total of six hectares of vines. They have been growing top fruit for over 50 years.



## Proposed Actions for Viticulture

### 1. Vineyard Land Management Plan

It is envisaged that Land Management Plans for vineyards will be co-developed between growers and suitably qualified bodies.

#### Response

Yes, a Land Management Plan makes sense but do not duplicate this work. We have to do one for Red Tractor and one for LEAF as well as all the other separate plans we have to do for all the other elements for evidence of best practice. The various certification boards such as LEAF and M&S (LEAF+) and Red Tractor each year bring in further modules and plans which must be written and each is slightly different. Farmers will find that they will be undertaking paperwork if this continues, and the Land Management Plan is not consistent with the other certification plans and may find themselves not undertaking best practice farming. Funding for consultants must be the same across the board. Everything must be commercially viable.

### 2. Farm Cluster Group

Vineyard Managers and Workers join a defined (geographically or by production method, e.g., organic producers) cluster of other Vineyard Managers, Workers, Ecologists, Advisory groups, Landowners, Corporations etc. to support them through best practice knowledge exchange.

#### Response

This action is probably the hardest, there has to be a significant incentive to participate. We are a demonstration farm for M&S and LEAF, and I feel that wider consultation on best practice would be a better form of action for cluster groups rather than working with your neighbour. My viticulture neighbour is quite a distance away. I am surrounded by large arable estates who would not consider me in a cluster group with top fruit and viticulture grower, our farming is so disparate. This action may be better if it was to be focused on cluster groups working with demonstrations farms.

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### 3. Participate in on site research into activities that may derive public goods

There is a lack of scientific research and innovation that vineyards can rely on with regards specifically to enhancing Public Goods in UK Vineyards.

#### Response

We are already undertaking research with various companies and always have, yet this is not recognised by any form of grant. We are part of the innovate project which pays for costs and under the incentive on R& D relief there are small tax benefits. However, I do feel that it is something which is so important to further best practice in viticulture.

### 4. Capital grants to support technological advances.

Payments made to support vineyard equipment (tractors, ATVs, frost protection, weather sensors etc) powered by renewable energy. Remote sensing technology to map, monitor and determine areas for targeted, frost protection or nutrient additions. Rainwater harvesting and storage infrastructure for vineyard, winery and related use. Compost and/or grape marc storage/holding tanks and any required associated bunding.

#### Response

I feel the action is not worded to make the most of vineyard equipment which for instance, machinery which is not powered by renewable energy, but which is far more sustainable to the environment and will benefit best practice.

### 5. Soil regeneration

Soil management is a critical to UK vineyards. However, soil health in vineyards can remain low and its potential as a carbon sink often remains untapped. The actions that will be paid for will be dictated by measures that are available to all through the Sustainable Farming Incentive.

#### Response

I totally agree with this and will do it. The soil is so important.

### 6. Ground cover

By encouraging permanent ground cover within vineyards, it is possible to both improve soils and increase biodiversity. This will also help reduce the quantity of active pesticides that need to be

applied by creating conditions that promote strong, healthy vine growth and the development of a functioning ecosystem where predatory insects can thrive and reduce the need for applying chemicals.

#### Response

I totally disagree with this and will not do it. Depending on your soil, we have tried so many different methods of reducing the sward under the vine causing financial loss, we therefore spray out. If the sward is left under the vine, it will reduce our crop by 50% and I am sure we are not going to be compensated for the value of the loss of this crop. Bare soil is needed for solitary bees to nest which play an important part in orchards and vineyards.

### 7. Restoration and management of species-rich grass sward

Where vineyards are on soils that have the potential to provide species rich grassland between rows and on headlands, payments can be made to regenerate the native flora and fauna. This can have benefits for biodiversity on site but can also help to create a functional network of grassland sites within priority areas.

#### Response

I am not sure about grazing round the headland and in the alleyways. We shall need fencing and protection of the windbreaks. I shall view other businesses which are undertaking this as normal practice.

### 8. Establishment and maintenance of native species windbreaks, trees and hedgerows

Where vineyards would benefit from windbreaks, hedges (internal or boundary hedges), or areas of woodland that provide biodiversity, inspirational and/or cultural heritage values, pollination, carbon sequestration, erosion reduction, soil formation, nutrient cycling and wildlife corridors.

#### Response

I will do this. We are replacing single species windbreaks now and feel the environmental benefits are so good. We have had a complaint from the general public that we should not be removing a poplar windbreak which was falling into the road, a health and safety problem. However, it

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is much better to plant a native windbreak in its place which is what we have done.

### 9. Biodiversity features

Installation of bird boxes, bat boxes, raptor perches to encourage both increased biodiversity and predators of pest species.

#### Response

I will do this; it will benefit my vineyard and orchard to make it more sustainable.

### 10. Interpretation

Payment for the creation of interpretation panels or other features within the publicly accessible area of the vineyard

#### Response

I have had LEAF information boards round the farm and have recently ordered more. I will certainly do this since an interpretation board where we were undertaking windbreak management would have educated the passers by of the importance of planting native species against single species trees. There is a lack of understanding out there and with all these new housing estates, this needs to be top of the list. Social media is also a good way of engaging with the public so they can come and see what we do and begin to understand.

### 11. Permissive access

Create a new walking route in the vineyard or collaborate with a neighbour to create a walking

route round and between the two vineyards and neighbouring farmland.

#### Response

This must be funded, both kissing gates and for providing access. I will add more routes in on my farm if this happens.

### 12. Educational access

Create educational opportunities for people of all ages and backgrounds to learn about farming, wine production and the environmental.

#### Response

Yes, I would participate in this action.

### 13. Health activities

This action is similar to educational access, but the outcomes are driven by the health and wellbeing agenda rather than education.

#### Response

Yes. I agree this is important and I would included this in my farming scheme.

### 14. Organic conversion and management

A number of vineyards are already organic and there may be an appetite for others to convert to organic production.

#### Response

Yes, this is important to the organic people and they should be recognised for what they are doing but I do feel that some of the organic ingredients they are using are more potent than the normal pesticide products used in viticulture.

### Key points from the interview

- It is imperative that the work is not duplicated but all certification boards need to work together to create a single Land Management Plan take up may be limited due to the huge increase in paperwork.
- Working together for best practice with demonstration farms as a cluster will be more beneficial to growers of viticulture than clusters of vineyards carrying out combined actions.
- It is felt that the action for ground cover is not viable if it includes areas under vines.
- It is important for the schemes to reward farmers for what they are already doing or have already done as well as funding other farmers to undertake the action.
- I agree that I would participate in all of the relevant actions provided that these points are addressed for both viticulture and row fruit..

This case study examines Viticulture the proposed 'Actions' for the Tests and Trials managed and run by the Kent Downs AONB unit on behalf of the National Association of AONBs.