V I N E Y A R D C H E C K

Land Parcel A, XXX, East Sussex
15 February 2025

Overall Quality: Excellent

Summary

Land Parcel A has **excellent** potential to produce premium quality grapes for still and sparkling wine both now and into mid-century.

1. Climate Scores (out of 10)

Current Climate (2010-19)	5.8
Lower Projection for Mid-Century (2040-59)	5.8
Median Projection for Mid-Century (2040-59)	7.2
Upper Projection for Mid-Century (2040-59)	8.8

2. Land Classification

Percentage of Land Parcel A classified as Basic, Premier Cru and Grand Cru quality

Unclassified	2.2%
Basic	9.3%
Premier Cru	1.4%
Grand Cru	87.1%

3. Combined Score and Benchmark to Existing Producers

Comparison of Land Parcel A with the vineyards of existing producers in England

Score 89 (Excellent)

Poor	Below Average	Average	Good	Excellent
0 - 20	20 - 40	40 - 60	60 - 80	80 - 100

Key and Further Information

1. Climate Scores

Climate scores are measured on a 0 to 10 scale, with the following interpretation:

0 - 4	=	Poor
4 - 5	=	OK for sparkling wine, Poor for still wine
5 - 6	=	Good for sparkling wine, OK for still wine
6 - 8	=	Good to Very Good
8 - 10	=	Excellent

1.1 Current Climate (2010-19): **5.8. Good for sparkling wine, OK for still wine**

The current climate score is particularly promising as it falls within the upper quartile of climate scores for existing vineyards in Essex, Kent and Sussex (Figure 1). This indicates that premium sparkling wine can already be produced reliably, with still wine achievable in favourable years. A vineyard established today would not need to rely on future warming to achieve premium quality. Additionally, the current climate serves as a conservative baseline for mid-century projections.

1.2 Prediction for Mid-Century (2040-59)

Lower Projection:	**5.8. Good for sparkling wine, OK for still wine**
Median Projection[1]:	**7.2. Good to Very Good**
Upper Projection[2]:	**8.8. Excellent**

By mid-century (median projection), reliable production of both premium quality sparkling and still wine will be achievable, with a potential shift towards still wine under the upper projection. The lower projection for mid-century would resemble current climate conditions (see section 1.1). Overall, the scores align with the upper quartile of climate scores for existing vineyards in Essex, Kent and Sussex (Figure 1), indicating that Land Parcel A is well-situated for viticulture.

2. Land Classification

2.1 Topography

Land Parcel A has been classified into three quality categories based on topography. These are, in increasing quality: Basic (very gentle slopes); Premier Cru (gentle, moderate or strong slopes facing East to South-East); and Grand Cru (gentle, moderate or strong slopes facing South to West).

[1] The median projection assumes an increase of 1.1°C in the average April to September temperature (from 2010-19).
[2] The upper projection assumes an increase of 2.3°C in the average April to September temperature (from 2010-19).

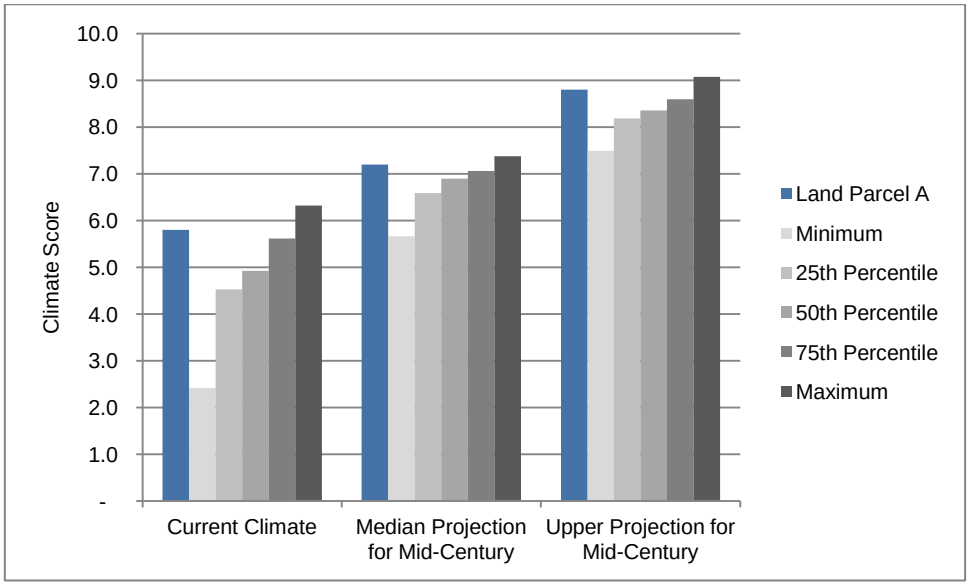

Figure 1. Comparison of climate scores for Land Parcel A against the range in climate scores for 273 established vineyards in England's counties currently most favourable for viticulture - Essex, Kent and Sussex (East and West), (grey bars).

The percentage of Land Parcel A classified as Basic, Premier Cru and Grand Cru quality is as follows:

Unclassified (Substandard)	2.2%
Basic	9.3%
Premier Cru	1.4%
Grand Cru	**87.1%**

Figure 2 illustrates the distribution of land classification across Land Parcel A. Better land classification is especially important when climate scores are marginal (< 6), as it increases solar radiation and warmth while also improving drainage. Land Parcel A is excellent in this regard, with a large majority of its land qualifying as Grand Cru quality.

2.2 Soils

Land Parcel A soils have been identified as **freely draining, shallow lime-rich soils over chalk or limestone** and are generally suitable for viticulture. Note, however, these soils are vulnerable to leaching of nitrate and pesticides to groundwater and attract stricter fertiliser limits (Cranfield University, n.d.). A detailed soil survey is advised

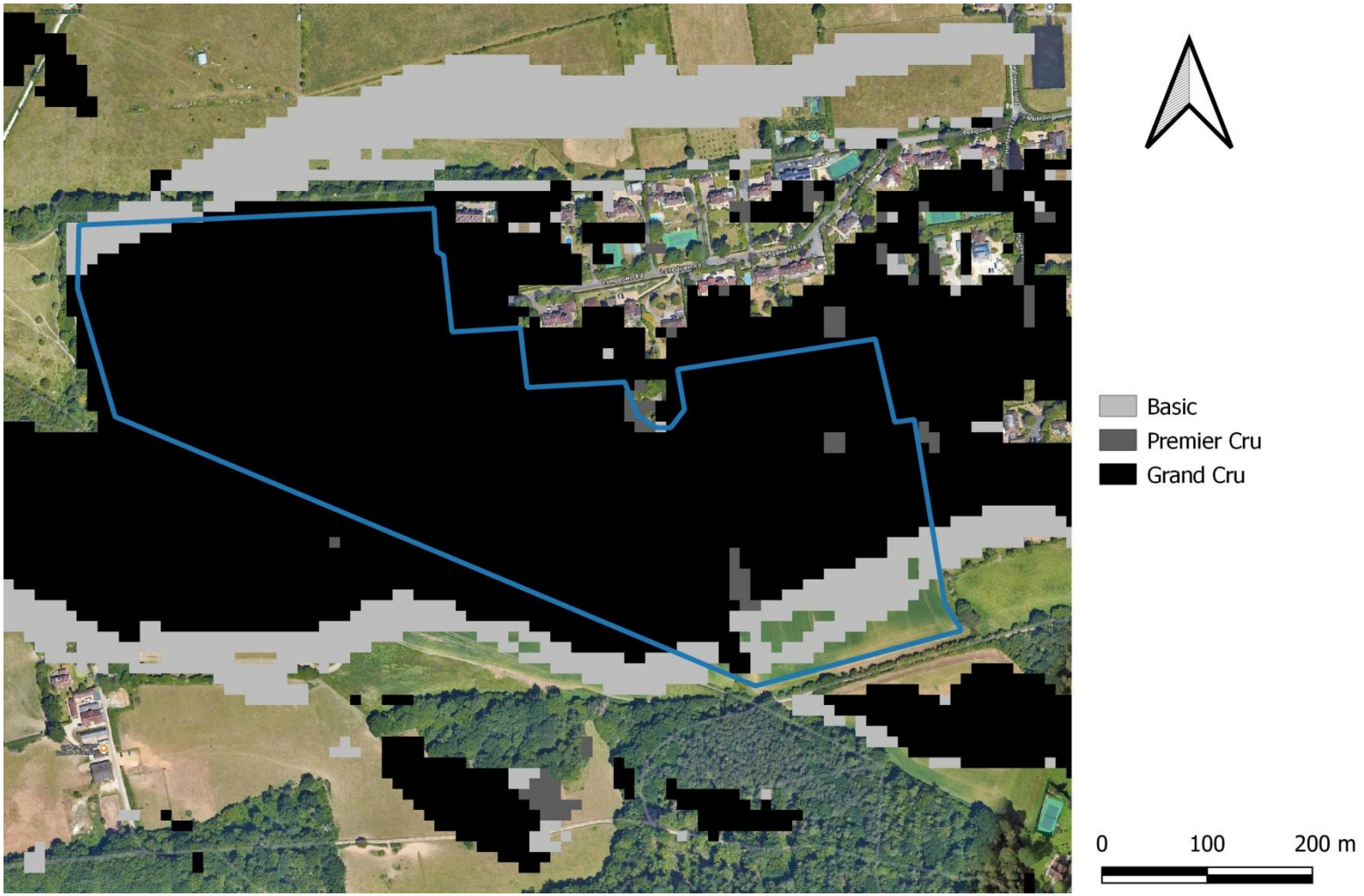

Figure 2. Land classification based on an analysis of topography and soils.

Note: i) Land with slope gradient ≤ 2% and > 30% are unclassified. They are usually too flat for efficient drainage of rainwater and cold air (factors important to vine health and frost risk) or considered too steep for safe operation of machinery, respectively. ii) Land at the top and bottom of hills is usually sub-optimal for viticulture. By only identifying slopes with gradient greater than 2%, these problematic “summit” and “toeslope” areas are effectively excluded.

3. Combined Score and Benchmark to Existing Producers

By integrating climate scores and land classification, and comparing Land Parcel A to the vineyards of 24 producers in England that currently make *both* sparkling and still Chardonnay wine, Land Parcel A receives a relative land quality score[3] of **89**.

The relative land quality score is measured on a 0 to 1 scale, with the following interpretation:

Poor	Below Average	Average	Good	Excellent
0 – 20	20 - 40	40 - 60	60 - 80	80 - 100

Land Parcel A's high score places it in the top quintile of existing producers (Figure 3), indicating excellent potential for producing premium quality still and sparkling wine, both now and over the next three to four decades.

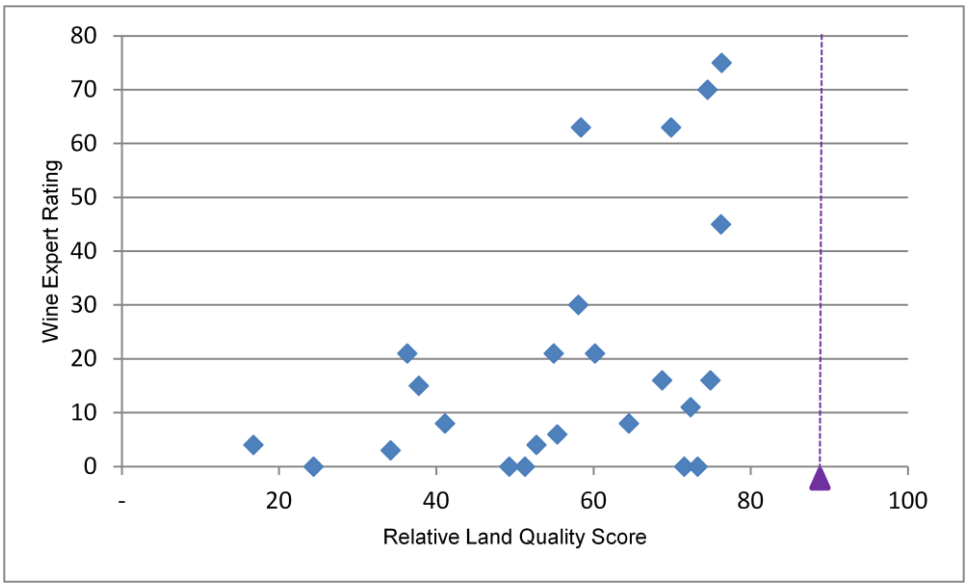

Figure 3. Relative land quality scores for i) Land Parcel A (purple arrow and dashed vertical line) and ii) the vineyards of 24 producers in England known currently for production of both sparkling and still Chardonnay wine, plotted against the number of times they were cited as a favourite still Chardonnay wine producer by wine experts in a survey (Biss, 2025). Note the higher the land quality score the greater the *potential* for making premium quality wine.

[3] The relative land quality score (ranging from 0 to 1) combines the current climate score and land classification, weighted 60% climate and 40% land classification (see Biss, 2025).

Assumptions

The model was designed with the production of premium still Chardonnay wine in mind, using the Chablis region of France as an analogue. Chardonnay, Pinot Noir, and Pinot Meunier share broadly similar climate requirements (see Jones, 2006). Therefore, this model can serve as a first-approximation for all three varieties. However, production of sparkling wine can tolerate a slightly cooler climate compared to still Chardonnay wine, which is why many English sparkling wine producers have performed well in the current climate. As such, as a rule of thumb, we suggest looking for mean vintage scores ≥ 4.0-5.0 for sparkling wine and ≥ 5.0-6.0 for still wine (depending on land classification). To maintain flexibility, consider planting Chardonnay and Pinot Noir clones that can be used for both still and sparkling wine. It may then be possible to use weather and crop conditions for the May to July period to help plan whether, or in which proportion, to produce still or sparkling wine (Biss and Ellis, 2021).

Note current and projected climate scores are based on mean temperature from April to September, precipitation from June to September and the Cool Night Index (mean minimum temperature for September) (Biss and Ellis, 2021). These factors encompass the key stages of the growing season, from early development through to ripening, and are important for achieving good fruit that can be used to produce balanced wines. They account for:

- Growing season warmth, key to sugar and secondary metabolite accumulation in berries
- Flowering and fruit set, which are crucial for yield and even berry development, and
- Night time temperatures in September, which play a vital role in maintaining berry acidity

Disclaimers and Caveats

We use the LandIS SoilScapes database for this report. This provides a good general idea of drainage conditions. The soils in your plot are likely, however, to be considerably more spatially varied in terms of their structure, texture, pH, available macro- and micro-nutrients, drainage, and water holding capacity, and possibly even contaminants. It is advisable to seek professional help on what soil amelioration and preparation may be needed.

The model was designed to capture wine quality, not yield. However, the two are often well correlated especially in cooler wine regions like England, except for when extreme damage to crops occurs through frost and/or hail. These risks are particularly high in the weeks after budburst when buds are delicate, typically from April to May. Note:

- The potential damage from hail or other extreme events was not accounted for in the model.
- Some consideration was given to frost risk. Only slopes with gradient greater than 2% were included for land classification, thus excluding problematic Summit and Toeslope areas where cold air drainage is impeded. Other barriers, however, such as hedges, woods, etc., may serve as barriers to cold air drainage, and/or dips in the land may create cold air pooling. Any site would need to be fully investigated to decide on frost risk and mitigation measures.

Climate projections are taken from the UK Met Office (UKCP18), using the intermediate Representative Concentration Pathway (RCP) 4.5. The two other main RCPs (2.6 and 6.0) give broadly similar results to RCP 4.5 for 2040-59, given the warming effects of these different emissions scenarios do not deviate significantly until the latter half of the 21st Century. RCP 8.5, often called "business as usual", would result in median projections similar to the upper end of the RCP 4.5 projections presented here.

Note however that the change in climate is unlikely to follow a straight trajectory. There remains a risk of multi-year cold and/or wet spells. Of greater risk is the potential significant decline or collapse of the Atlantic Meridional Overturning Circulation (AMOC). This could lead to considerably cooler temperatures in Europe. Overall, this can be viewed as a very low probability, high risk event that would likely end viticulture in the UK. There is considerable ongoing research and debate regarding the extent to which AMOC is slowing, if and by when it might reach a tipping point and collapse, and what the effects might be. For the moment, it remains of academic interest.

Interannual variability in weather is of much greater and immediate concern however, and takes on especial importance when climate is marginal for growing grapevines, as is currently the case in England and Wales. For example, the climate score for 2010–2019 hides significant vintage variation in the UK: 2012 was poor almost everywhere and 2018 was generally excellent for most of Southern, Eastern, South-Eastern and Central England, with the other eight years somewhere in-between.

Next Steps

If you are considering planting a vineyard on this site, we recommend consulting a professional. This should include a detailed site inspection, soil analysis, and discussions on vineyard design, frost risk mitigation, and the selection of grape variety, clone, and rootstock. Please let us know if you would like consultant recommendations.

Authorised

Alex James Biss
Vineyard Check

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