**Text for Visulisation**

1. **Landing page**

Title: A Change in Climate, a Change in Taste

Sub-text: An exploration into climate change and UK Viticulture.

Sub text: Data visulisation by Group 5, CASA003

1. **Introduction**

Title: A New Taste

Paragraph: Climate change is a prevalent topic throughout the world. Whilst we are all aware of the adversity that arises from such an issue, the change is simultaneously creating opportunities elsewhere.

Paragraph: Traditionally the UK has not been considered a hub of Viticulture. However, with increasing temperatures and altering weather patterns, the UK is quickly becoming a novel producer of wines. From pinot noir to a new class of sparkling wine, vineyards throughout the UK are shifting the long-considered status quo for Viticulture.

Paragraph: Throughout this website, the untold story of the UK’s viticulture is explored. From weather patterns, to what lies beneath the grapes, you can discover how a global phenomenon is creating a new kind of locality.

1. **Climate Plot**

Title: Viticulture Climate Zones

Paragraph: Historically, wine regions were located almost always between the latitudes of 30° and 50° [1]. As a rule of thumb, along with many further characteristics of the climate and terroir, grapes prefer an average temperature between 12°C and 22°C throughout its growing season.

As visualised, climates are changing globally. The boundaries of wine-producing ranges have already moved and continue to traverse throughout the Northern and Southern hemispheres. Domestically, the United Kingdom is witnessing a similar trend. The Southerly regions are increasing in annual temperature, becoming warmer for longer.

This map shows the calculated yearly mean temperatures of the growing seasons (April to October on the Northern, October to April on the Southern hemisphere) between 1900 and 2017. Customized aggregated spatial datasets are based on information released by the NOAA [2].

Data sources: [1] David Morrison, ‘The Wine Gourd: March 2018’. https://winegourd.blogspot.com/2018/03/ (accessed May 11, 2022).

[2] ‘University of Delaware Air Temperature and Precipitation: NOAA Physical Sciences Laboratory’. https://psl.noaa.gov/data/gridded/data.UDel\_AirT\_Precip.html (accessed May 5, 2022).

**4) Climate Plot UK**

Title: Viticulture Climate Zones

Paragraph:

Data Sources: ‘University of Delaware Air Temperature and Precipitation: NOAA Physical Sciences Laboratory’. https://psl.noaa.gov/data/gridded/data.UDel\_AirT\_Precip.html (accessed May 5, 2022).

**5) Europe Wine**

Title: Europe: The Traditional Areas of Viticulture

Paragraph: In the year 2000, the traditional distribution of vineyard regions throughout Europe was concentrated within countries within the South. These vineyards form a part of the Old-World Wine. As shown, there were no vineyard regions within the UK. However, in just over 20 years, this trend has rapidly changed.

Data: <https://land.copernicus.eu/pan-european/corine-land-cover/clc-2000?tab=download>

**6) Market Trends**

Title: Temporal Trends of UK Viticulture

1. The Growth of Varieties, 1990 – 2020
2. The Profile of Wine Exports
3. Changing Production Tase: White vs Red
4. The Growth of Vineyards, 2000-2020

Paragraph: Each plot examines a changing element of UK viticulture over the previous thirty years. From how taste has changed in both production and consumption, to the rising presence of wineries, and a rise in exports of wine, a burgeoning market has become established within the UK. Yet, how do these temporal changes manifest themselves today?

Data: <https://www.winegb.co.uk/trade/industry-data-and-stats-2/>

<https://www.statista.com/topics/8241/wine-in-the-united-kingdom/>

<https://www.food.gov.uk/business-guidance/wine>

http://www.englishwine.com/

**7) Location of Vineyards**

Title: The Present Vineyards of the UK

<p>Currently, there are 860 Vineyards and wineries throughout the UK.</p>

<p>These maps explore the distribution of viticulture in the UK. You can look at them by country by changing the toggle. To discover details about each vineyard, click on the circle to show the name, country, country, and website for that Vineyard.</p>

<p>The heatmap examines the distribution of Vineyards, weighted by their size. </p?

<p>From these maps, Vineyards are now present across the UK. However, there is also a dense concentration within the South-East region. Co-currently, the density of Vineyards decreases in a northerly direction. Considering the change in climate, this trend corroborates the northerly annual increases in temperature. Continue scrolling to uncover more detail about this change in the climate.

Data: http://www.englishwine.com/

**8) County Trends**

Title: The Regions of English Viticulture

Paragraph: As shown, the South-East region of England hosts the majority of Vineyards. To create a successful vineyard, grapes need an environment full of sun, warmth, and moisture. When comparing the difference between annual average measurements in three climate factors (precipitation, sunshine, and temperature) from the year 1836 between the South-East of England, to the entire United Kingdom, a distinction is continuous, and increasing. The South-East region has a warmer environment, with more sun. This has also increased throughout the 185 years shown, creating an ideal environment for grapes. However, the precipitation level is also consistently lower. This may present as a limiting factor in the success of Viticulture in the region. Yet, in actuality, grapes thrive in dryer climates, such as those found within Southern Europe. What delaminates a successful vineyard, and also the taste of the grapes, lies beneath the surface.

Data: <http://www.englishwine.com/>

https://www.metoffice.gov.uk/research/climate/maps-and-data/uk-and-regional-series

**9) Case Study**

Subtitle: Regional Case Study

Title: Rathfinny Wine Estate

Subtitle: Beneath the Vine

Paragraph: Vineyard’s specialise in a type of grape, with over 30 varieties grown across the UK. Each variety requires a different base to grow from. Specifically, the soil moisture, PH and bedrock beneath the surface can greatly alter the harvest and resulting taste of the wine. The ideal range for PH and moisture sits between 5.5 and 6.8, creating equilibrium for nutrients’ [1]. Equally, if the soil is too acidic or alkaline, yields will decrease and create unhealthy vines.

Paragraph: The ideal range for soil moisture lies below the 50% mark [1]. The soil must be fertile and drain well. The bedrock beneath provides minerals and physical support for vineyards. Without suitable geology, a vineyard is destined to fail.

Paragraph: But how do these requirements translate to a singular vineyard? Let us consider one of the many; the Rathfinny Wine Estate lies within Sussex. Established in 2010, with vines planted in 2012, the vineyard specialises in producing Pinot Noir, Chardonnay and Pinot Meunier for vintage sparkling wines. It is a commercial vineyard, allowing visotrs to visit and enjoy its 350 acres. Through extracting satellite data, the presented histograms displays that the surrounding land provides suitable soil moisture and PH for these varieties.

Paragraph: The south-facing slopes also lie on the same chalk as the Paris Basin within Northern France. Chalk provides a soft, yet cooling and porous alkaline bedrock, ideal for grapes for high acidity (corroborating the relatively acidic measures of PH in the soil). The vine's roots can penetrate the bedrock, providing both draining and moisture for nourishment.

Data: <https://rathfinnyestate.com/>

<https://www.bgs.ac.uk/>

<https://developers.google.com/earth-engine/datasets/catalog/OpenLandMap_SOL_SOL_PH-H2O_USDA-4C1A2A_M_v02>

<https://developers.google.com/earth-engine/datasets/catalog/OpenLandMap_SOL_SOL_WATERCONTENT-33KPA_USDA-4B1C_M_v01>

**10) Napa Valley**

Title: The Burning Reality

Paragraph: Whilst climate change has produced a new opportunity for Viticulture in the UK, it would be negligible to exclude how other Viticulture’s have been adversely impacted. Within Napa Valley, a region in California, wildfires commonly occur. The specific event shown, upon the 10th of October 2017, displays both the smoke from the event, but, more importantly, the damage. With the Near-Infrared Image on the right, areas that display as black have been burned. Such events are increasing in frequency, alongside other natural events. This is not an isolated incident, nor is it temporally restricted. Globally, climate change is altering patterns of production and consumption. Whilst the expanding Viticulture within the UK may be considered a benefit, the environmental cost of such a delicacy is high.

Data: <https://geodata.lib.utexas.edu/catalog/ark28722-s74012>

https://www.planet.com/pulse/northern-california-wildfire-satellite-data-available-for-access/

**11) Conclusion**

Title: Concluding Remarks

Paragraph: Throughout this narrative, we have explored the UK’s burgeoning Viticulture. From what is being produced, to how and why it is clear that the change in climate has driven this opportunity. However, with the point of no return, in which the potential to un-do climate change will become impassable, we should question whether the chance to enjoy a locally sourced wine is truly a permanent choice we would like.