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# **Pinpointing the WILSON Scottish Paternal Ancestral Genetic Homeland**

**A Scottish Case Study**

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[www.scottishorigenes.com](http://www.scottishorigenes.com)



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### Introduction

A simple painless commercial ancestral Y chromosome DNA test will potentially provide one with the names of many hundreds of individuals with whom one shares a common male ancestor, but what often perplexes people is how one can match individuals with many different surnames? The answer is quite simple. Roughly 1,000 years ago one's direct medieval male ancestor, the first for example to call himself 'Wilson' was living in close proximity to others with whom he was related but who inherited other surnames like Elder, Dinwoodie, Johnston and Thomson. Given that 1,000 years have passed since paternally inherited surnames became common, there will be many descendants of those individuals some of whom will today undergo commercial ancestral Y-DNA testing. Hence the surnames of one's medieval ancestor's neighbours will be revealed in today's Y-DNA test results.

Early 19<sup>th</sup> century census data demonstrates that Scottish surnames could still be found concentrated in the areas from which they originated. One can therefore use census data to determine the origin of the surnames that appear in one's Y-DNA results, identifying an area common to all, and reveal ones '**Paternal Ancestral Genetic Homeland.**' The genetic homeland is the small area (usually within a 5 mile radius) where one's ancestors lived for hundreds if not thousands of years. It is the area where one's ancestor first inherited his surname surrounded by relatives who inherited others. It is the area where ones ancestors left their mark in its placenames, its history, and in the DNA of its current inhabitants. Since modern science can pinpoint a paternal ancestral genetic homeland it can also be used to confirm it by DNA testing individuals from the pinpointed area.

### Notes of caution!

1. In Ireland each of the estimated 1,500 distinct surnames had a single founding ancestor, that's an estimated 1,500 Adams from whom anyone with Irish ancestry can trace direct descent. But science has demonstrated that only 50% of individuals with a particular Irish surname will be related to the surnames founding ancestor, the other 50% of people will have an association that has arisen as a result of what are called 'non-paternal events' usually a result of adoptions or maternal transfer of the surname. Since Scotland adopted a similar Clan based society these scientific findings can be applied to Scotland and people with Scottish ancestry.
2. Often people are looking for their DNA results to trace back to a specific area. One must remember that the results typically reflect one's ancestor's neighbours from around 1,000 years ago. As a result, if one's Scottish ancestor was descended from an Anglo-Saxon settler, Viking raider, or 12<sup>th</sup> Century Norman one's DNA results will reflect earlier English, Welsh, French, and possibly Scandinavian origin. One must approach this process with an open mind!

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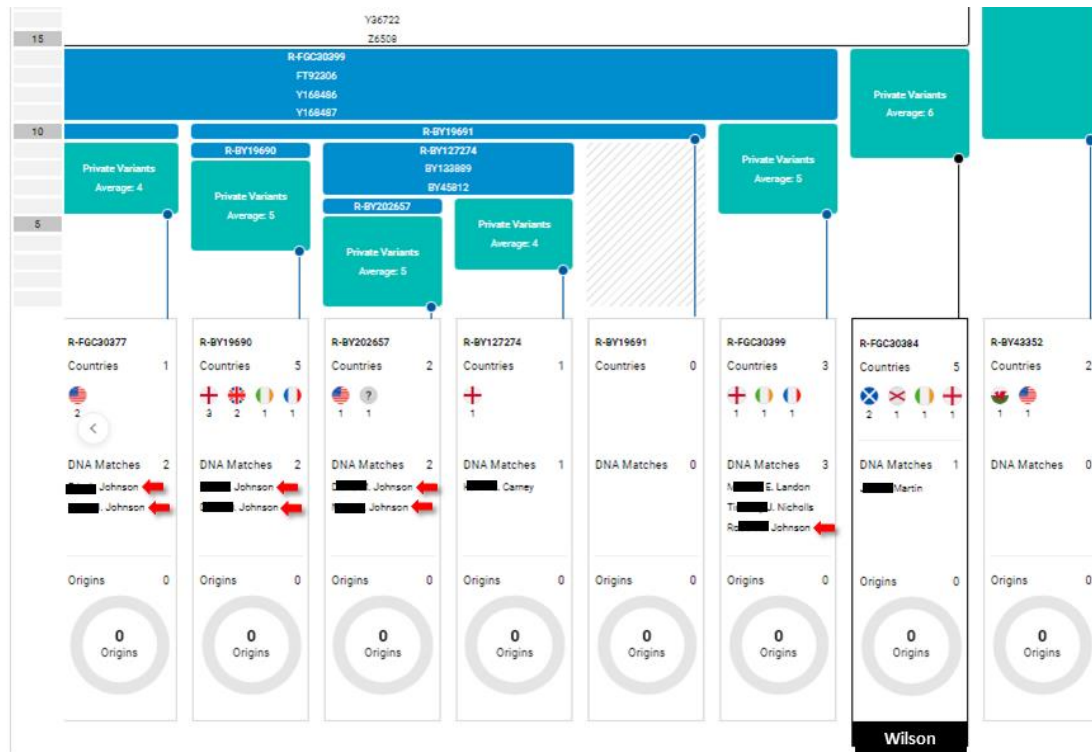
### Interpreting the Y-DNA test results

To identify a paternal ancestral genetic homeland one must first identify the surnames that appear as one's closest genetic matches in a commercial ancestral Y-DNA database. Those surnames, particularly ones that recur among one's closest Y-DNA matches will typically reflect the surname of a medieval ancestor's relative/neighbour. The test subject's closest genetic surname matches as revealed in the FTDNA Y-DNA STR and SNP databases are detailed in **Figures 1 and 2**.

| 111 Marker Matches |           |  |                  |              |                       |            |
|--------------------|-----------|--|------------------|--------------|-----------------------|------------|
| Genetic Distance   | Name      | Earliest Known Ancestor                            | Y-DNA Haplogroup | Terminal SNP | Big Y STR Differences | Match Date |
| 4                  | Elder     | Tilman Elder (1778 VA- 1830 GilesCoTN)             | R-M269           |              |                       | 8/1/2016   |
| 5                  | Elder     | Peter Elder d. 1673 VA                             | R-FGC30384       | FGC30384     |                       | 8/1/2016   |
| 8                  | Elder     | Peter Elder d. 1673 VA                             | R-M269           |              |                       | 5/2/2017   |
| 9                  | Fancher   | William Fanshaw/Fancy Sr. b. 1618? d. 1677         | R-BY19690        | BY19690      | 9 of 654              | 8/1/2016   |
| 10                 | Dinwiddie | David Dunwoody, b. 1600 and d. 1645                | R-M269           |              |                       | 3/7/2017   |
| 10                 | Johnston  | William Johnston, b, not known d,not known         | R-M269           |              |                       | 8/1/2016   |
| 10                 | Fancher   | William Fancy/Fanshawe/Fancher Sr., b. 1618 - 1676 | R-BY19690        | BY19690      |                       | 8/1/2016   |
| 67 Marker Matches  |           |  |                  |              |                       |            |
| Genetic Distance   | Name      | Earliest Known Ancestor                            | Y-DNA Haplogroup | Terminal SNP | Big Y STR Differences | Match Date |
| 4                  | Decker    |  | R-M269           |              |                       | 5/27/2015  |
| 4                  | Elder     | Tilman Elder (1778 VA- 1830 GilesCoTN)             | R-M269           |              |                       | 4/4/2015   |
| 4                  | Elder     | Peter Elder d. 1673 VA                             | R-FGC30384       | FGC30384     |                       | 11/27/2014 |
| 6                  | Thompson  |  | R-M269           |              |                       | 5/17/2018  |
| 6                  | Thompson  |  | R-M269           |              |                       | 2/2/2018   |
| 6                  | Elder     | William Edmund Elder b. 1688 VA                    | R-M269           |              |                       | 11/27/2014 |
| 7                  | Fancher   | William Fanshaw/Fancy Sr. b. 1618? d. 1677         | R-BY19690        | BY19690      | 9 of 654              | 11/27/2014 |
| 7                  | Elder     | Peter Elder d. 1673 VA                             | R-M269           |              |                       | 5/2/2017   |
| 7                  | Johnson   |  | R-M269           |              |                       | 5/12/2015  |
| 7                  | Johnson   | Hugh W. Johnston b.c. 1821                         | R-M269           |              |                       | 11/27/2014 |
| 7                  | Johnson   | William Johnston, b, not known d,not known         | R-M269           |              |                       | 11/27/2014 |
| 7                  | Fancher   | William Fancy/Fanshawe/Fancher Sr., b. 1618 - 1676 | R-BY19690        | BY19690      |                       | 11/27/2014 |
| 7                  | Johnson   | Thomas Johnston, b. approx. 1760 and d. 1835       | R-DF13           | DF13         |                       | 11/27/2014 |
| 7                  | Wilson    | Lesley Wilson                                      | R-M269           |              |                       | 11/27/2014 |

**Figure 1:** Snapshot of test subject Wilson's closest genetic surname matches as revealed in the FTDNA Y-DNA STR database. The more Y-DNA markers two people share the more recent their shared paternal ancestor once lived. The surnames of the test subject's closest genetic relatives at the 111 and 67 marker levels are **NOT RANDOM**; he matches others named Wilson (red arrow) together with others with surnames that recur among his matches (coloured arrows). The Wilson surname is associated with both Scotland and England; however, the test subject's **closest** genetic matches include exclusively Scottish surnames which indicates a most recent paternal link with Scotland. Highlighted font indicates each surnames associated ethnicity: Scottish, Scottish-associated.

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**Figure 2:** Block display of Mr Wilson's terminal SNP results reveal a close shared ancestry with Scottish Johnsons. The BigY block display shows the precise chronological development of surnames among a tribal group of related males. The test subject's terminal SNP block display indicates that his Scottish Wilson paternal line is closely connected to the Johnston surname which dominates his BigY matches (red arrows). These results would indicate that the Wilson and Johnston surnames arose among related males who lived somewhere within Scotland.

Upon commercial ancestral Y-DNA testing the test subject matched another individual named 'Wilson' who tested independently, see **Figure 1**. This indicates that the test subject is either directly descended from a Wilson-Adam; literally the first male ('Adam') to take that surname who lived approximately 1,000 years ago when paternally inherited surnames became common, or that the Wilson surname has been in his paternal line for many hundreds of years. A Scottish paternal origin is supported by the test subject's closest Y-DNA matches which are dominated by exclusively Scottish and Scottish-associated surnames would support a more recent Scottish origin, see **Figures 1 and 2**.

There are a number of commercial ancestral DNA tests that can be used to explore one's ancestry. By far the most popular is the 'autosomal test' which sheds light over *all* of one's *recent* ancestral lines. With autosomal DNA testing one will typically match many individuals (both male and female) and making sense of those relationships can be quite challenging. However, many of one's autosomal matches will reveal surnames and placenames associated with their family tree, and those surnames and locations can hold clues as to where the various branches in one's own ancestral tree originated. If there is a more recent Scottish paternal link, then it will be supported by the test subject's autosomal DNA results.

An examination of the test subject's 'autosomal' DNA test results revealed 2,694 genetic relatives, 1,465 of whom record details of their ancestral surnames or locations, see **Figure 3**. The locations revealed by the test subject's 'autosomal' genetic relatives are **NOT RANDOM**; given its population size, Scotland features

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prominently, see **Figure 3**. The locations recorded within Scotland by test subject's autosomal genetic relatives are not random, with two Scottish 'DNA hotspots' emerging, see **Figure 4**.

**A**

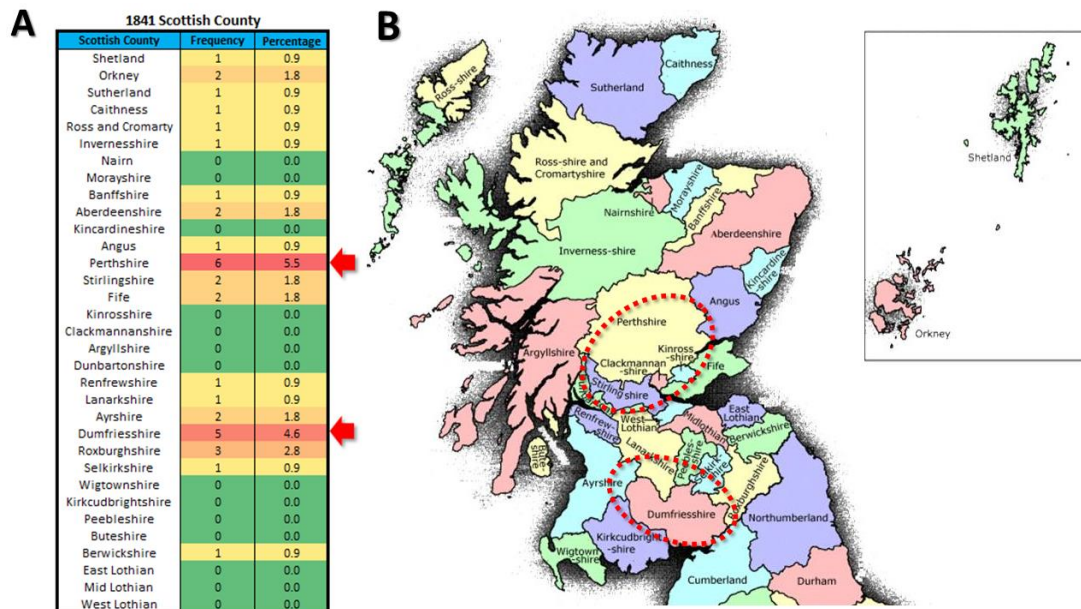
| FamilyFinder STATS |      |
|--------------------|------|
| Matches            | 2694 |
| Ancestral details  | 1165 |
| Percentage         | 43   |

**B**

| Country  | Frequency | Percentage |
|----------|-----------|------------|
| Ireland  | 193       | 14.9       |
| Scotland | 109       | 8.4        |
| England  | 238       | 18.3       |
| Wales    | 45        | 3.5        |
| Germany  | 122       | 9.4        |
| France   | 70        | 5.4        |
| Spain    | 3         | 0.2        |
| Italy    | 15        | 1.2        |
| Norway   | 12        | 0.9        |
| Poland   | 14        | 1.1        |
| Finland  | 2         | 0.2        |
| Russia   | 9         | 0.7        |

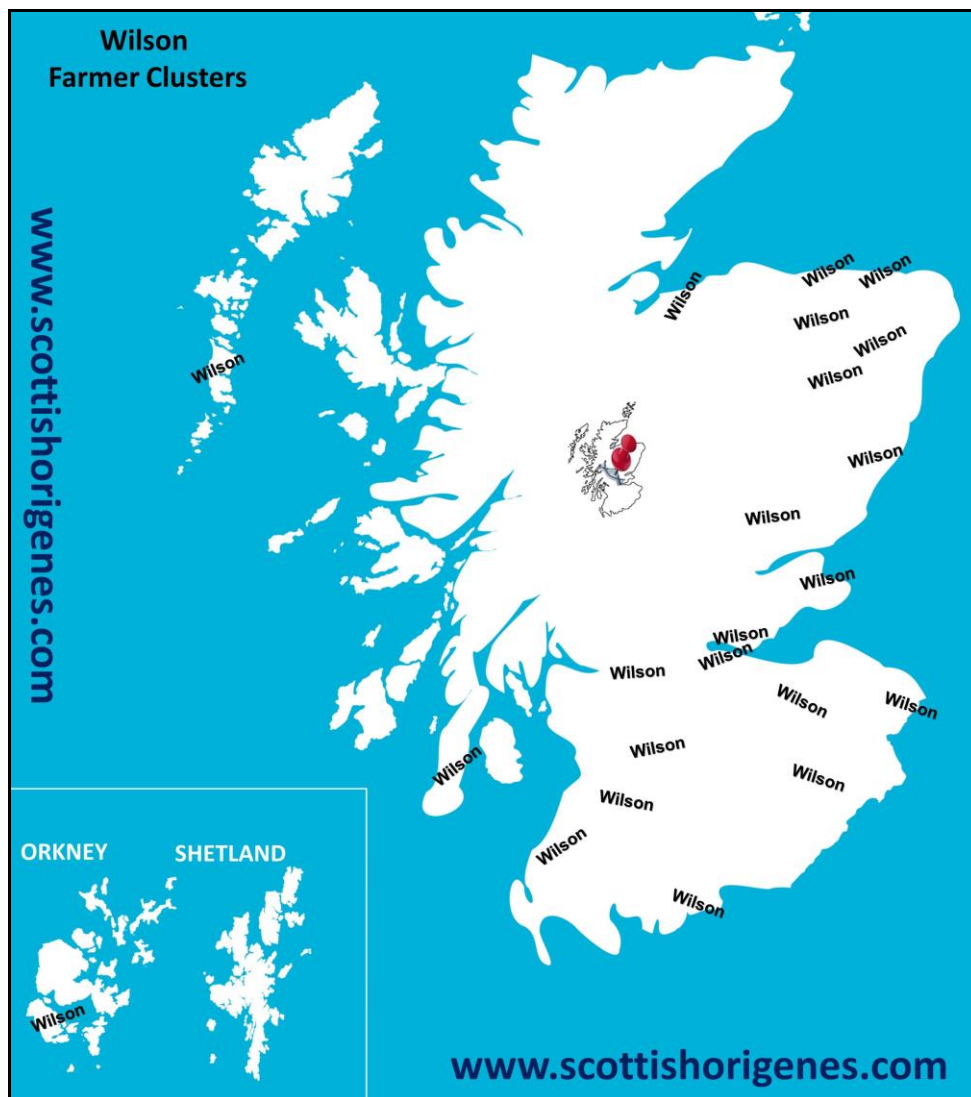
**Figure 3:** Family Finder Stats. Approximately 43% of the test subject's autosomal genetic matches record some sort of ancestral information (surname or location, **panel A**). The locations revealed by these genetic relatives are NOT RANDOM, compared to a selected number of countries, Scotland features prominently, **panel B**.



**Figure 4:** Autosomal matches reveal recent ancestral connections with two Scottish locations. An examination of the 1841 Scottish counties (**panel A**) detailed among the test subject's autosomal genetic relatives reveals ancestral links with Central and Southern Scotland (**red arrows panel A, red broken circles panel B**).

### Scottish Wilson

Since surnames arose in an agrarian society, this means that farmers in early census data could be found concentrated in the area where their surname first appeared or in the area where one's ancestors first settled. One can therefore examine the distribution of farmers named 'Wilson' to determine how many Scottish 'Wilson' Clans (or Families) existed. Early census data reveals at least 22 geographically distinct Scottish Wilson farming communities found throughout Scotland; indicating the existence of potentially at least 22 genetically distinct Wilson clans, one of whom the test subject may share common paternal ancestry with, see **Figure 5**. It is the test subject's closest genetic surname matches revealed by Y-DNA testing, as a snapshot of his Scottish medieval male ancestors neighbours which will reveal where his Scottish founding Wilson paternal ancestor lived.



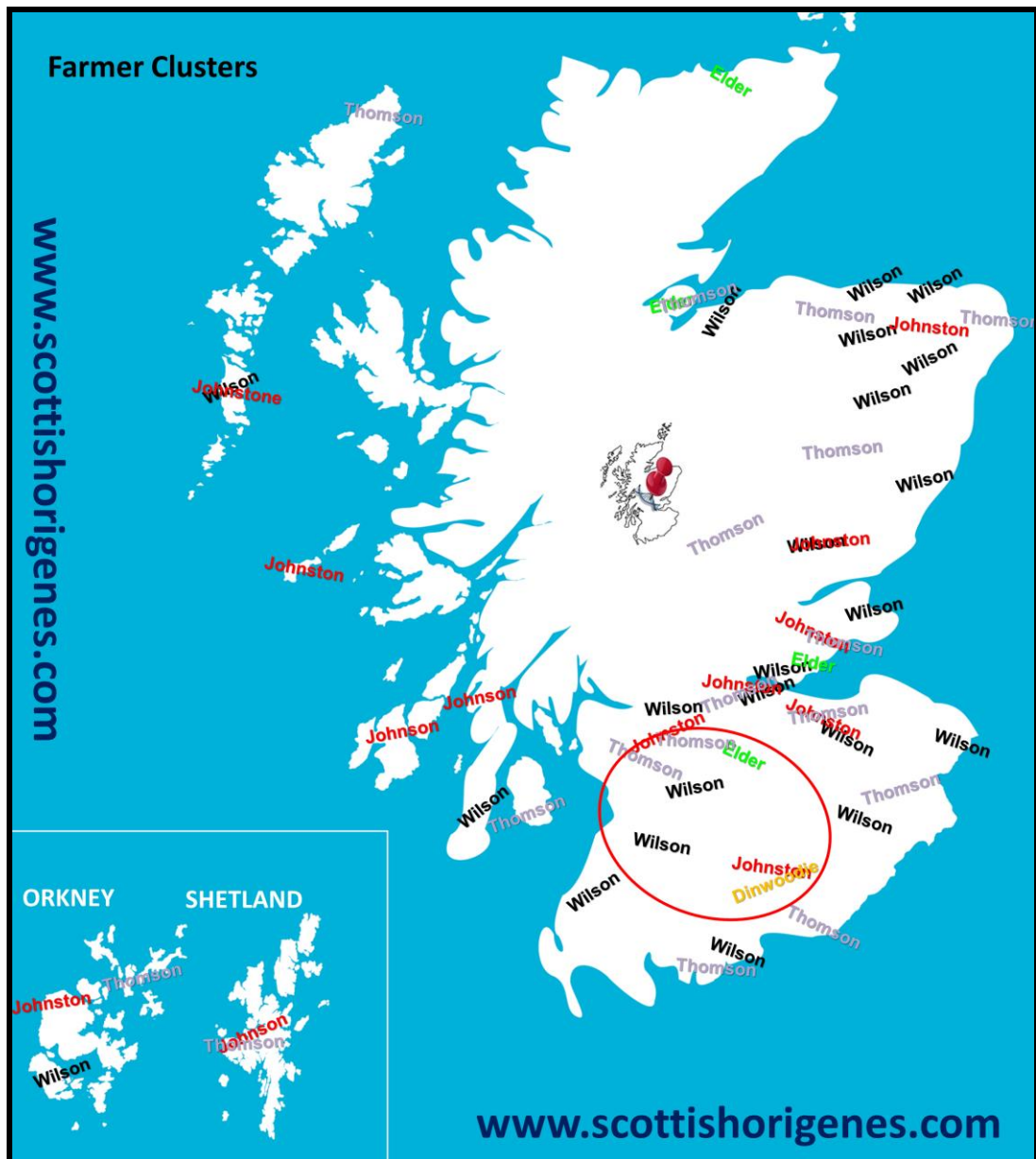
**Figure 5:** The Scottish Wilson farming communities. By examining the distribution of farmers named Wilson in early census data it reveals at least 22 groups or Clans spread throughout Scotland. The test subject's Y-DNA results reveal that he may be directly descended from a Scottish Wilson-Adam. Hence, the test subject's paternal ancestry is connected to one of 22 locations within Scotland. Each surname has been placed on the map in the area where farmers with that surname concentrate in early census data. The most common spelling is detailed in each location.

### Pinpointing the Paternal Genetic Homeland

The method of using genetic surname matches as revealed by commercial ancestral Y-DNA testing to pinpoint a paternal ancestral genetic homeland works by exploiting the link between the Y chromosome, surname and land; which are typically passed from father to son through the generations. In the absence of a link to the land the process becomes more challenging. The link with the land is greatest among the farming community and since farmers in Scotland can still be found farming the land where their ancestor lived when he first inherited his surname, or where one's ancestor first settled within Scotland, one can plot where farmers with the surnames that appear in one's Y-DNA results cluster and identify an area common to all. This means that upon Y-DNA testing a Wilson from Orkney will be a Y-DNA genetic match to males with surnames like Croy, Morwick and Yorston; surnames associated with the Orkney Isles. In contrast, upon Y-DNA testing a Wilson from Argyllshire will be a Y-DNA match to individuals with Scots surnames like Campbell, McSporran and McMillan; surnames associated with Western Scotland. Hence, it is Mr Wilson's closest Scottish-associated Y-DNA genetic surname matches which will reveal where his paternal ancestors originated.

Mr Wilson's Y-DNA results reveal that the Elder, Dinwoodie, Johnson and Thomson surnames appear among his closest Y-DNA matches see **Figure 1**. Distribution mapping of Scottish farmers named Wilson, Elder, Dinwoodie, Johnson and Thomson reveals that they only occur together within Southern Scotland; an area that also emerged as an autosomal DNA hotspot, see **Figure 4** and **6**. The Scottish Origenes Surnames and DNA Map details where farmers with each Scottish surname concentrated in early census data. An examination of the Dumfriesshire, Lanarkshire and Ayrshire borderlands as it appears on the Scottish Origenes Surnames Map reveals 2 groups of Wilson farmers near the town of Sanquhar, and surrounded by surnames that appear among the test subject's closest most frequent and singular genetic matches, see **Figure 7**.

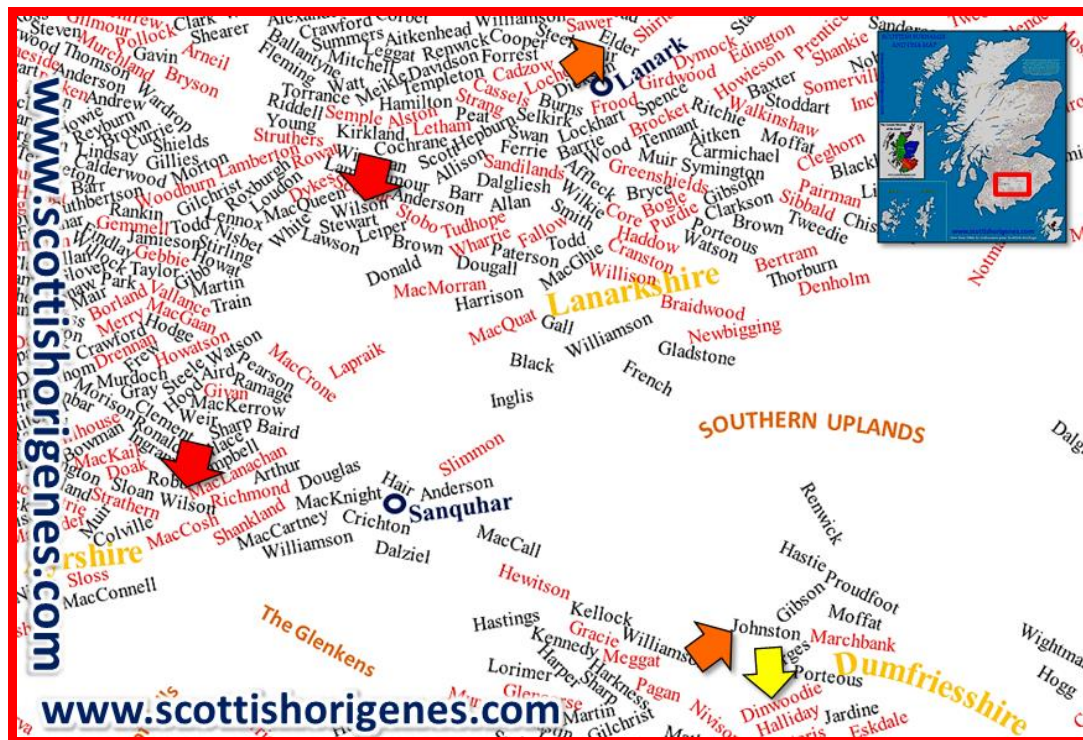
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**Figure 6:** Overlay mapping reveals a paternal ancestral connection with Southern Scotland. The Wilson, Elder, Dinwoodie, Johnson and Thomson surnames appear among the test subject's closest genetic surname matches which indicates that they arose among a group of related males living somewhere within Scotland. Distribution mapping of farmers named Wilson, Elder, Dinwoodie, Johnson and Thomson reveals that they occur in closest proximity to one another within Southern Scotland (**orange circle**). Each surname has been placed on the map in the area where farmers with that surname concentrated in early census data. The most common spelling is detailed in each location.



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**Figure 7:** The Surnames of the Dumfriesshire, Lanarkshire and Ayrshire borderlands. The Scottish Origenes Surnames map reveals two groups of Wilson farmers (red arrows) in the farmland that surrounds Sanquhar town, and surrounded by surnames that appear as close recurring (orange arrows) and singular genetic matches (yellow arrow) to the test subject. Each surname has been placed on the map where farmers with that surname concentrated in early census data. Surnames in red font (like 'Dinwoodie') are associated with a single geographical area within Scotland.

### The Clan Territories of Dumfriesshire

By examining the locations of the castles and towerhouses that are historically associated with a particular surname, it reveals that medieval Scotland was a patchwork of territories dominated by notable Clans and Families. Almost everyone with Scottish paternal ancestry will be genetically related to at least one of those prominent Clans or families that once ruled over one's paternal ancestral genetic homeland. An examination of the castles and towerhouses of Dumfriesshire, Lanarkshire and Ayrshire borderlands reveals a mix of Clans and Families of Ancient Briton, Picto-Gael, Anglo-Saxon, Viking and Norman origin, see **Figure 8**. That map also reveals that the test subject's Wilson ancestors shared a close paternal link with the Johnstones that dominated much of the Annan River Valley, see **Figure 8**.

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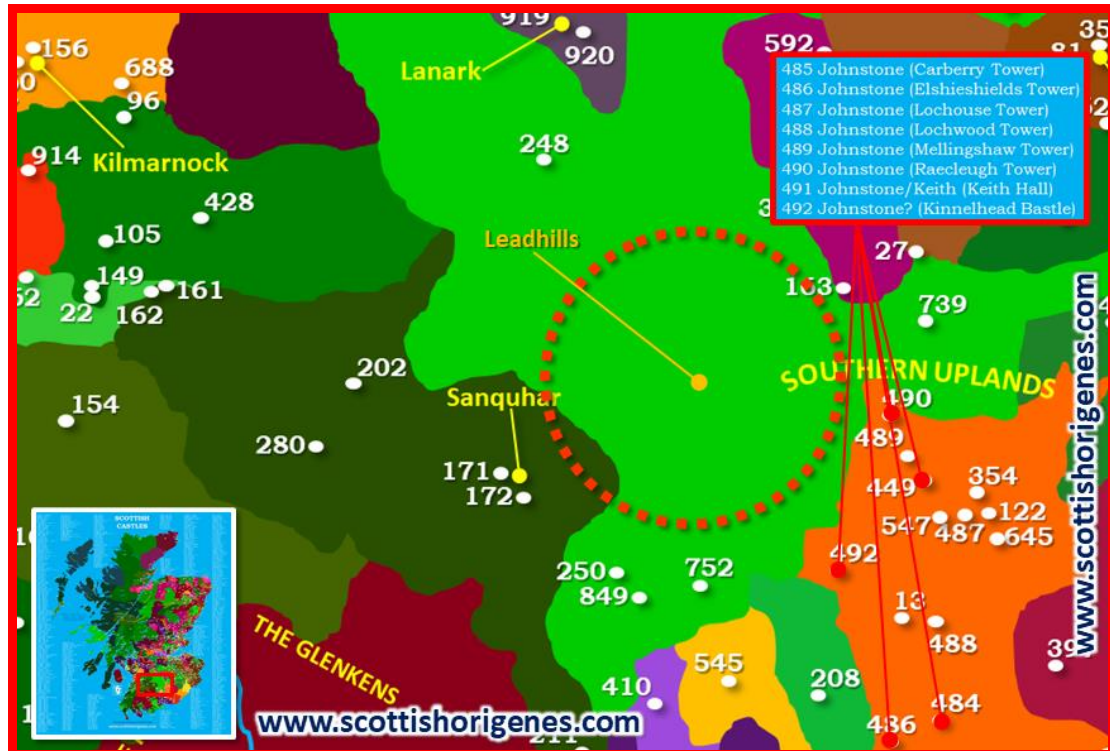


**Figure 8:** The principal Medieval Clans and Families of the Dumfriesshire, Lanarkshire and Ayrshire borderlands. The Dumfriesshire, Lanarkshire and Ayrshire borderlands were once dominated by a variety of Clans and Families of Ancient Briton, Picto-Gael Anglo-Saxon, Viking and Norman origin. The test subject's Wilson ancestors shared a common origin with the Johnstones (red arrow) who dominated the Annan River Valley. The Clan territories map was reconstructed based on castle locations and their known associated clans and families.

### Mr Wilson's Scottish Paternal Ancestral Genetic Homeland

Early census data reveals that farmers named Wilson, Elder, Dinwoodie, Johnston and Thomson concentrated together in the parishes that lie to the east of the town of Sanquhar; and it is there that the test subject's Scottish paternal ancestral genetic homeland is to be found, see **Figure 9**. It was in that area that the test subject's direct male ancestor lived when he first acquired the Wilson surname. Often when one's ancestors have lived in an area for a very long time they leave evidence of their ancestral links with that location in the castles and placenames one finds there. An examination of this area reveals plenty of castles associated with the test subject's closest Johnstone genetic relatives, see **Figure 9**. The Wilsons of the Dumfriesshire and Lanarkshire borderlands will undoubtedly have left evidence of their long ancestral links with this area in the history of this location, but also in the DNA of the Wilsons who still live and farm there.

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**Figure 9:** Mr Wilson's Scottish Paternal Ancestral Genetic Homeland. Wilson farmers in early census data concentrate in the farmland that lies to the east of Sanquhar town; and it is there that the test subject's most recent Scottish Paternal Ancestral Genetic Homeland (orange broken circle) is to be found. It was there that his paternal ancestor lived when he first acquired the Wilson surname. His founding Wilson ancestor lived among genetic relatives who inherited other surnames like Elder, and Johnstone. The Wilsons of the borderlands of Lanarkshire and Dumfriesshire will have left evidence of their long ancestral links with this area in its history, but also in the DNA of the current inhabitants.

### Brythonic Celts

The Scots are a mixed bunch who descend from the pre-historic inhabitants, Celtic-Picts, -Ancient Britons and -Gaels, Romans, Anglo-Saxons, Vikings, Norse-Gaels and Normans. However, clues to the ethnic origin of the test subject's paternal ancestors can be found in his most distant recurring genetic surname matches which are dominated by Scottish, English and Welsh-associated surnames. These results indicate that the test subject's paternal ancestors were of Ancient Briton origin. The Welsh and Cumbric-speaking Celtic Ancient Britons dominated Scotland before the arrival of their distant Celtic Gaelic cousins from Central Europe approximately 2,000 years ago. The area of Scotland ruled by the Cumbric speaking Britons was known as the 'Kingdom of Strathclyde,' and it stretched from Renfrewshire through Lanarkshire to the modern borderlands with England. The Y-DNA test results indicate that the test subject's Scottish paternal ancestors were descended from some of the first Celtic people that arrived in waves from Central Europe from around 800BC onwards.

### How to confirm the Wilson Paternal Ancestral Genetic Homeland

One must remember that this is a scientific DNA approach to pinpointing a paternal origin. As such, confirmation that the test subject's paternal Wilson ancestors were from the Dumfriesshire and Lanarkshire borderlands will require the recruitment of Wilson farmers from that area for commercial ancestral Y-DNA testing.

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