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# **Case Study**

## **Pinpointing the O'Brien Irish Paternal Ancestral Genetic Homeland**

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



A handwritten signature in black ink, appearing to read 'Tyrone Bowes'.

**Dr Tyrone Bowes**  
**12<sup>th</sup> July 2017**

### 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 potentially match lots of 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 'O'Brien' was living in close proximity to others with whom he was related but who inherited other surnames like Kennedy, Hogan, Harte and Slattery. Given that 1,000 years have passed since paternally inherited surnames were first adopted, 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.

Surnames in Ireland can still be found concentrated in the areas where they first appeared, or in the area where ones ancestors first settled. 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 one's '**Paternal Ancestral Genetic Homeland.**' The paternal ancestral 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 males will have an association that has arisen as a result of what are called 'non-paternal events,' usually a result of adoption or maternal transfer of the surname.
2. Often people are looking for their DNA results to trace back to a specific area. One must remember that the results reflect one's ancestor's neighbours from around 1,000 years ago. As a result if your recent Irish ancestors were descended from 9<sup>th</sup> Century Viking raiders, 12<sup>th</sup> Century conquering Normans, or 16<sup>th</sup> Century Planters, your DNA results will reflect earlier English, Norman, Welsh, and possibly Scandinavian origin. I have estimated that only 60% of those with Irish ancestry are related to the pre-Christian Celtic tribes of Ireland. One must approach this process with an open mind!

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### Interpreting the Y-DNA results

To pinpoint a paternal ancestral genetic homeland one must first identify the surnames that appear as one's genetic matches in a commercial ancestral Y-DNA database, see **Figure 1**. Those surnames, particularly one's that recur throughout one's Y-DNA results will typically reflect the surnames of one's medieval ancestral neighbours. Genetically recurring surname matches for test subject 'O'Brien' are detailed in **Figure 2**.

| 111 Marker Matches |           |  |                  |              |
|--------------------|-----------|--|------------------|--------------|
| Genetic Distance   | Last Name | Earliest Known Ancestor                            | Y-DNA Haplogroup | Terminal SNP |
| 1                  | O'Brien   | Michael O'Brien c. 1800, Graiguenamanagh, Kilkenny | R-DC1            | DC1          |
| 5                  | OBriant   | Patrick O'Briant b. 1740 VA?-d. 1804 Granville Co. | R-L226           | L226         |
| 6                  | Morrissey | Michael Morrissey b. ~1806 Limerick d. 1900 Boston | R-DC311          | DC311        |
| 7                  | O'Brien   | Francis O'Brien b circa 1814 d 1872                | R-M269           |              |
| 7                  | Dunn      | Unknown Hogan d. 1834 L226+ Big Y arrived          | R-DC12           | DC12         |
| 9                  | Kelly     | Andrew Kelly. B circa 1795, Kilmihil, Co Clare     | R-M269           |              |
| 9                  | Brien     | Daniel O'Brien, b. about 1685 Clare                | R-DC310          | DC310        |
| 10                 | Graham    |  | R-M269           |              |
| 10                 | Brown     | James Riley Brown, 1862 - 1927 Dooly Co., Georgia  | R-DC294          | DC294        |
| 10                 | Graham    | Graham   | R-Z253           | Z253         |

**Figure 1:** Snapshot of test subject O'Brien's genetic surname matches at the 111 marker level as revealed in the FTDNA YDNA-STR database. The more Y-DNA markers two people share the more recent their shared paternal ancestor once lived. Upon commercial ancestral Y-DNA testing the test subject matched many others called 'O'Brien' together with similar sounding surnames like 'Bryan' or 'Bryant.' The test subject's genetic surname matches are **NOT RANDOM**, some like O'Brien (**red arrows**) and Graham (**blue arrows**) recur among his genetic relatives.

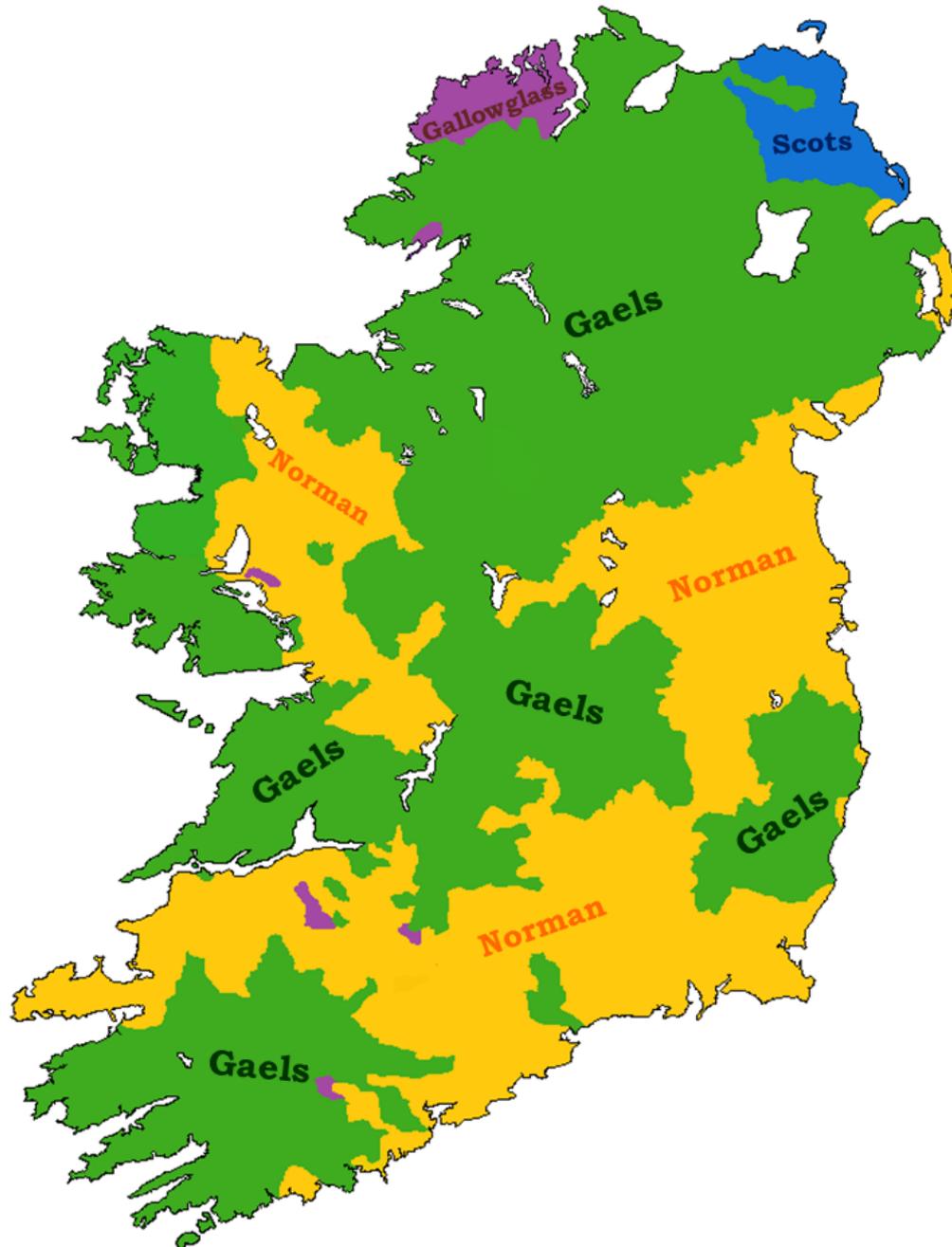
| Test Subject | Haplogroup | Y-DNA Test Results                                    |           |            |             |                   |            |   |  |
|--------------|------------|---|-----------|------------|-------------|-------------------|------------|---|--|
|              |            | 111 Marker Matches                                    |           |            |             | 67 Marker Matches |            |   |  |
|              |            | -1  | -7        | -9         | -10         | -4                | -5         | -6  | -7   |
| O'Brien      | R-M269     | O'Brien/Brien/Obriant<br>/O'Bryant/Bryant/Bryan (>40) | Dunn (x2) | Kelly (x2) | Graham (x2) | Hogan (x12)       | Burke (x3) | Carey (x2)<br>Hart (x4)<br>Kennedy (x7)<br>O'Mahony (x2)<br>McCraw/McGrath (x9) <sup>1</sup><br>Neill/O'Neill (x4)<br>Butler (x15)<br>Peavy (x2)<br>Slattery (x4) | Coffey (x2)<br>Fitzgibbon (x2)<br>Hartigan (x2)<br>Noland (x3) |

**Figure 2:** The test subject's closest recurring genetic surname matches reveals a paternal ancestral link with Ireland. Surnames are shown at the point at which they first occur as a genetic match, for example the first match to an individual called O'Brien occurs at 110/111 markers, but not all O'Briens, O'Briens or Bryans will match at that level. In brackets are the numbers of individuals with a particular surname that appear as a genetic match. The test subject's closest genetically recurring surname matches in the FTDNA database are dominated by common **Gaelic Irish** or **Norman Irish** surnames; indicating a most recent paternal ancestral link with Ireland dating from approximately 1,000 years ago. <sup>1</sup>Members of the same close family recruited for DNA testing and excluded from further analysis.

Upon Y-DNA testing the test subject matched many other individuals called O'Brien, Brien, O'Brient, O'Bryant, or Bryan who tested independently, see **Figure 1**. This indicates that the test subject is directly descended from an O'Brien-Adam; literally the first male (Adam) to take that surname who lived approximately 1,000 years ago. The O'Brien surname is associated exclusively with Ireland, and a most recent paternal ancestral link with Ireland is supported by the test subject's closest genetic matches which are dominated by Gaelic and Norman Irish-associated surnames, see **Figure 2**. This mix of Irish and Norman surnames among the test subject's closest recurring genetic matches is not uncommon and merely reflects the fact that the

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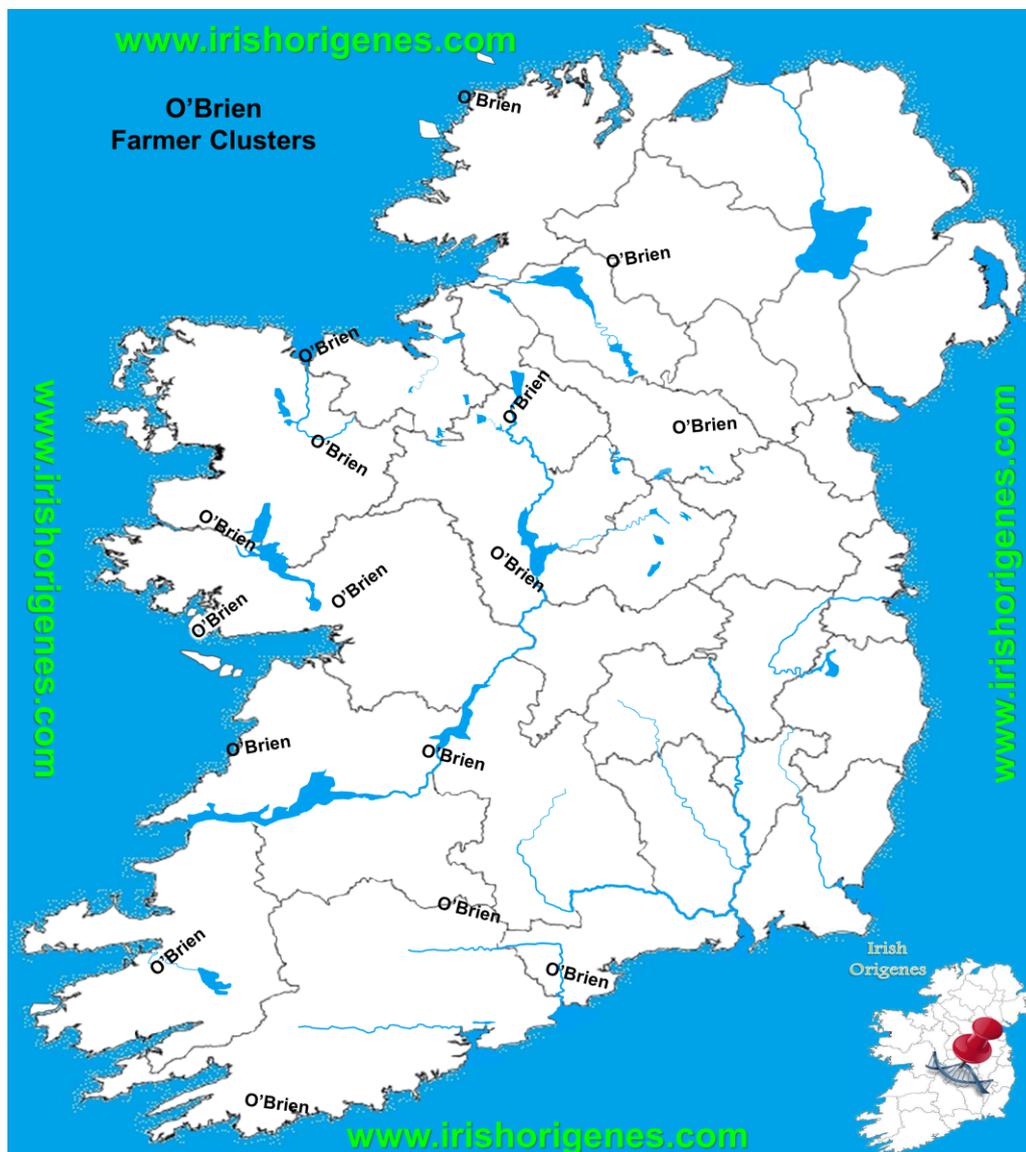
test subject's O'Brien ancestors lived in, or near an area of Ireland that experienced permanent Norman settlement, see **Figure 3**. The mix of Norman and Irish surnames reflects the relationships that developed between Gael and Gall (Norman) who have been neighbours for over 800 years.



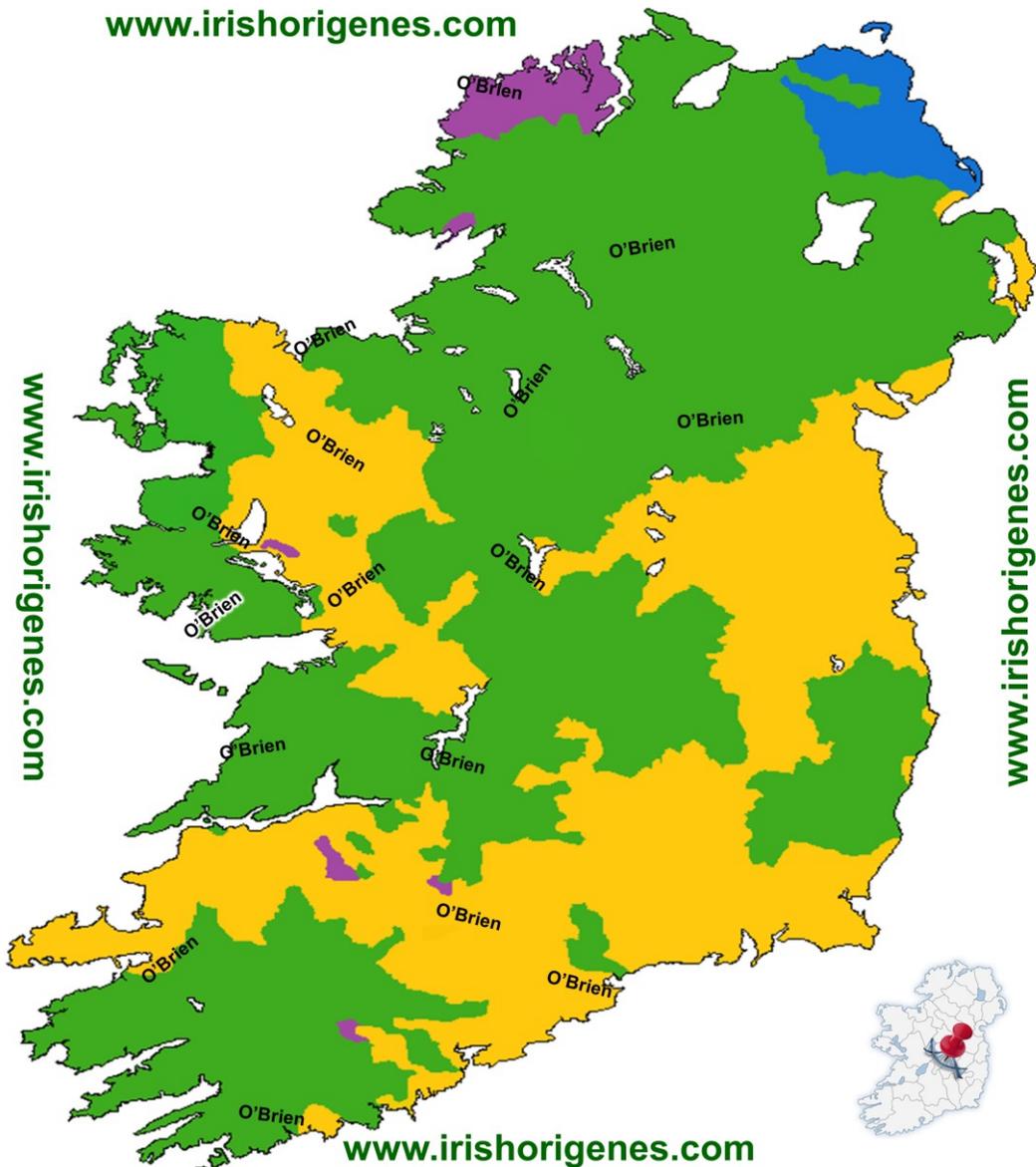
**Figure 3:** Areas of permanent Norman settlement. The Norman Conquest of Ireland began in 1169AD. Where the Normans settled permanently they built their castles and towerhouses. This map was reconstructed based on Irish castle locations, and each castles historical association with an Irish, Norman, Scottish or Scottish Gallowglass Clan or family. The test subject's Y-DNA result reveal that his O'Brien ancestors lived in (or near) an area of Ireland that experience permanent Norman settlement.

### The O'Brien Surname in Ireland

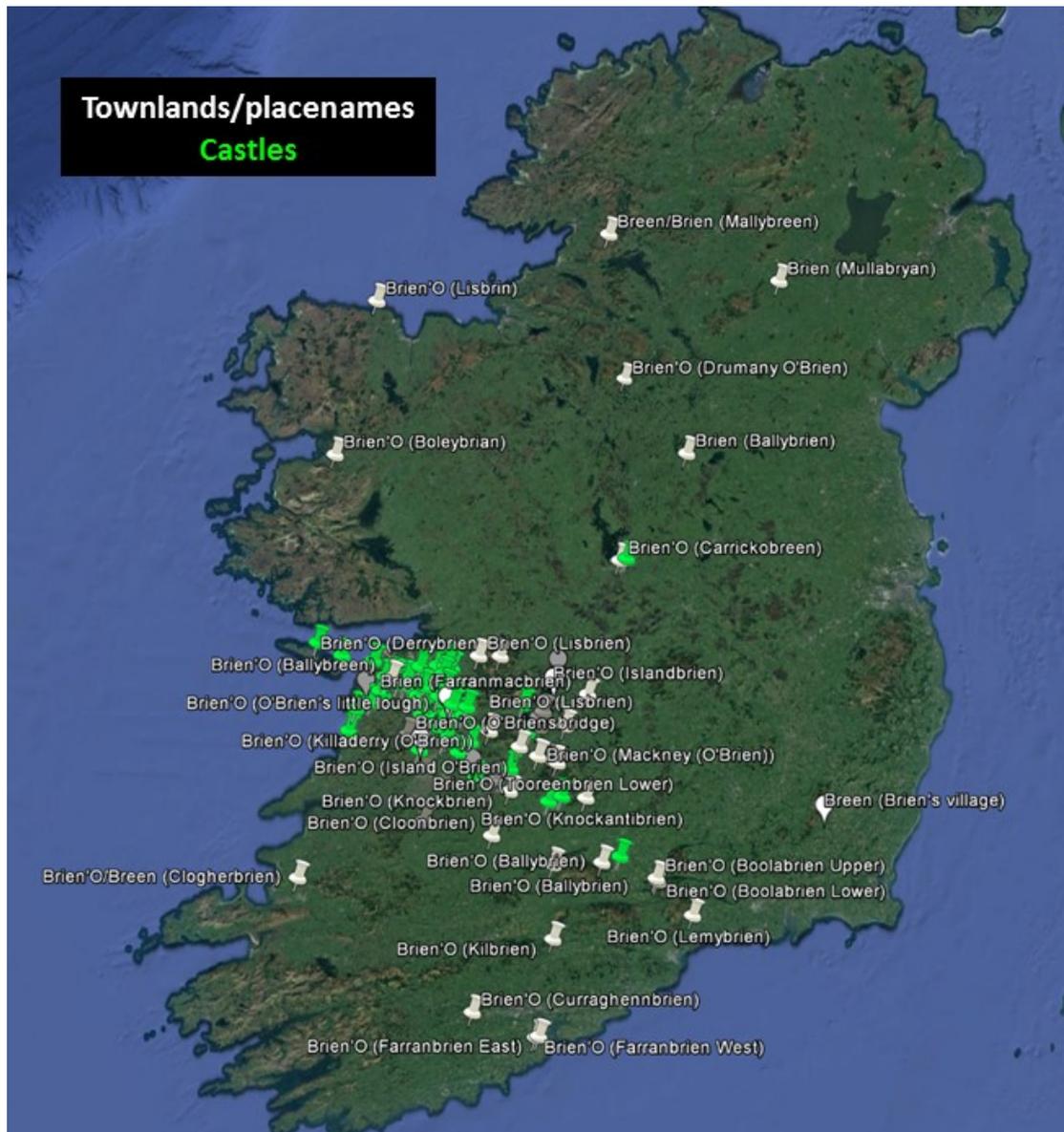
Since surnames arose in an agricultural based society, farmers with each surname can still be found concentrated in the area where their surname first appeared, or in the areas where one's ancestors first settled. Distribution mapping of Irish farmers named O'Brien reveals that they are not distributed evenly but occur within 16 distinct geographical locations, see **Figure 4**. This indicates that there are at least 16 distinct groups or Clans within Ireland that given rise to the O'Brien surname. Each group was potentially descended from an unrelated O'Brien-Adam and since the test subject is descended from an O'Brien-Adam his paternal ancestry is linked to one of these 16 distinct groups, a number of which (particularly in the west and south of Ireland) are found in, or near areas of permanent Norman settlement, see **Figure 5**. An examination of the Irish Origenes databases reveals many castles, towerhouses, townlands and local placenames associated with the O'Brien surname, see **Figure 6**.



**Figure 4:** O'Brien farming communities. A close inspection of the distribution of O'Brien farmers reveals that they concentrate in 16 distinct locations. Each surname is positioned in the location where farmers with that surname concentrate in early census data.



**Figure 5:** O'Brien farming communities and areas of permanent Norman settlement. By overlaying O'Brien Clan locations on a medieval ethnicity map of Ireland, it reveals that the O'Brien Clans in the west and southwest of Ireland lived in close proximity to the Normans.



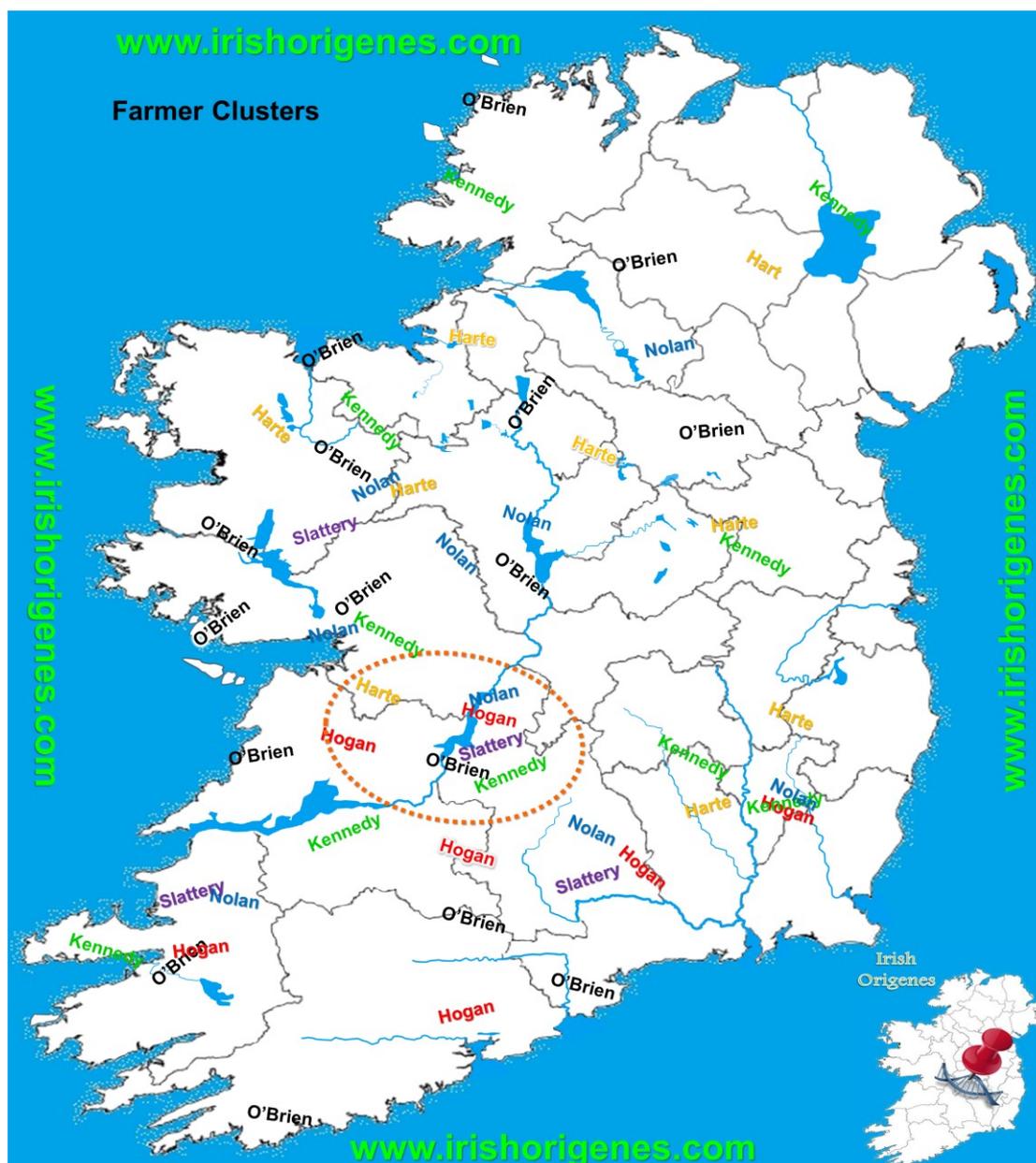
**Figure 6:** O'Brien castles, towerhouses, townlands and local placenames. An examination of the Irish Origines databases reveals a large number of castles, townlands, and local placenames that are clear references to the O'Brien surname.

### **A Paternal Ancestral link with the Tipperary and Clare borderlands**

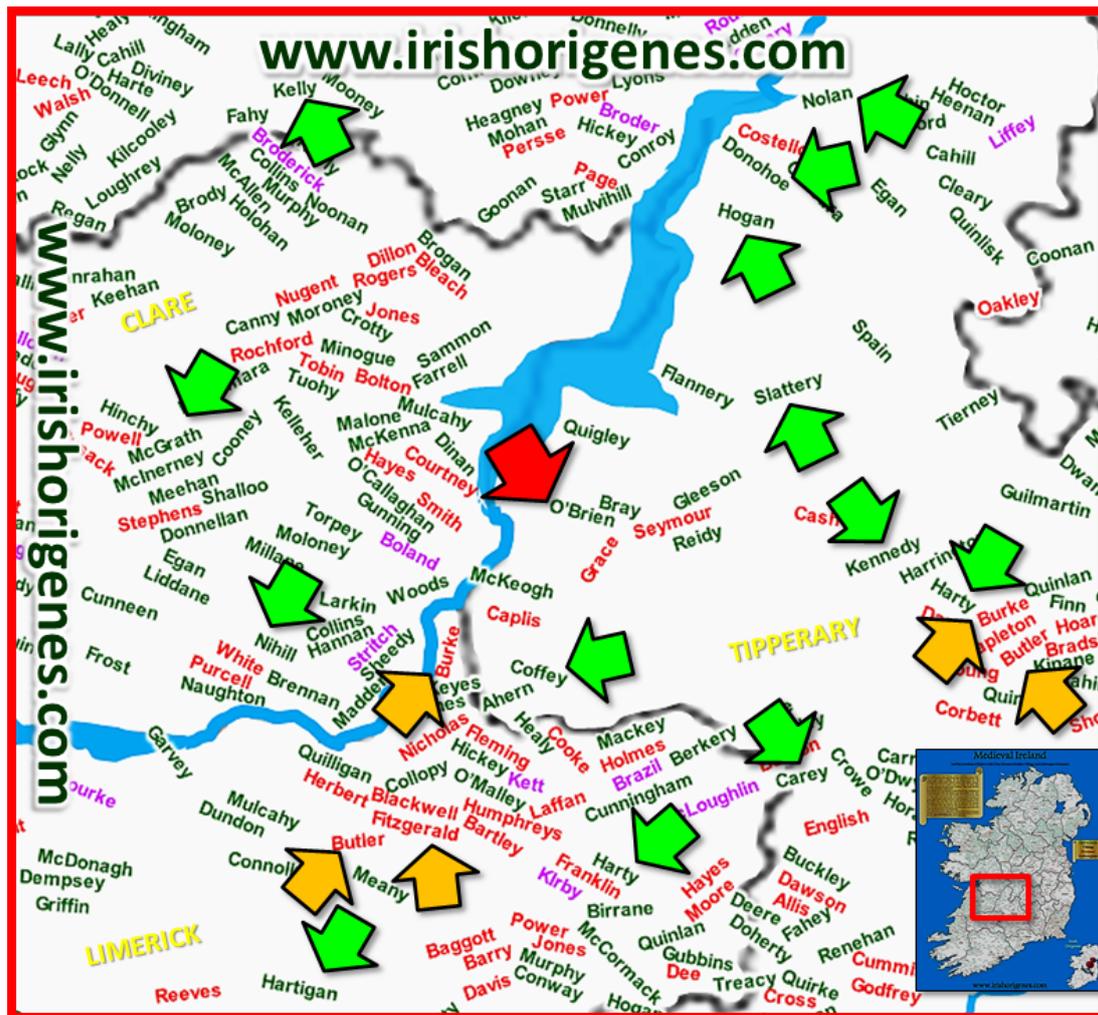
The method of using genetic surname matches as revealed by commercial ancestral Y-DNA testing to pinpoint one's paternal ancestral genetic homeland works by exploiting the link between the Y chromosome, surname and land which are typically passed from father to son through the generations. In the absence of a link to the land the process becomes more challenging. The link with the land is greatest amongst the farming community, and since farmers in Ireland can still be found farming the lands where their ancestor lived when he first inherited his surname, or where one's ancestor first settled within Ireland, one can plot where farmers with the surnames that appear in one's Y-DNA results originate and identify an area common to all. This means for example that upon Y-DNA testing O'Briens of Donegal will be a genetic match to people with surnames like Doherty, McLaughlin and McGee; surnames associated with Northwest Ireland. While in contrast an O'Brien

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from County Kerry will be a genetic match to people with surnames like Sullivan, McCarthy and Donovan; surnames associated with the far southwest of Ireland. An examination of the distribution of farmers named O'Brien, Harte, Hogan, Kennedy, Nolan (Noland) and Slattery, surnames which appear among the test subject's closest and most frequent Gaelic Irish surname matches, reveals a paternal ancestral link with the Tipperary and Clare borderlands, see **Figure 7**. An examination of the surnames of the Tipperary and Clare borderlands reveals almost all of the Gaelic and Norman surnames that appear among the test subject's closest genetic relatives, see **Figure 8**.



**Figure 7:** A Paternal Ancestral link with the Tipperary and Clare borderlands. An examination of the distribution of O'Brien, Harte, Hogan, Kennedy, Nolan (Noland) and Slattery farmers reveals that they lived in closest proximity to one another in the Clare and Tipperary borderlands (orange broken circle).



**Figure 8:** The surnames of the Tipperary and Clare borderlands. An examination of the surnames associated with the Clare and Tipperary borderlands reveals that it is the O'Briens of Northwest Tipperary (red arrow) who lived surrounded by genetic relatives with Gaelic Irish (green arrows) and Norman-associated (yellow arrows) surnames. The test subject's founding Irish O'Brien Adam lived in Northwest Tipperary an estimated 1,000 years ago.

### The Clan Territories of North Munster

By the 14<sup>th</sup> and 15<sup>th</sup> Centuries Ireland was a patchwork of territories which were dominated by over 400 of the most notable Irish Clans and Norman families. The Irish Origenes Clan Territories of Ireland Map was reconstructed based on the location of castles and towerhouses and their known historical link to a particular Clan or Family. An examination of North Munster as it appears on that map reveals an area that was almost completely dominated by the test subject's O'Brien ancestors, see **Figure 9**. Almost all of the Gaelic Irish and Norman Clans and Families that dominated North Munster appear among the test subject's closest genetic relatives, **Figure 2** and **9**.



**Figure 9:** The Clan territories of North Munster. An examination of North Munster as it appears on the Irish Origenes Clan territories map reveals an area dominated by the test subject's Thomond O'Brien genetic relatives, whose territory included most of modern County Clare and parts of neighbouring North Tipperary (red arrows). The lands of the Thomond O'Briens bordered those of fellow Gaelic Irish in addition to prominent Norman Families; almost all of whom appear among the test subject's genetic relatives (blue arrows).

### Mr O'Brien's Paternal Ancestral Genetic Homeland

O'Brien farmers reach their highest concentration in the farmland that lies close to the aptly named 'Gortlassabrien' (land of O'Brien's fort); and it is there that his paternal ancestral genetic homeland is to be found, see **Figure 10** and **11**. It was there that his paternal ancestor lived when surnames became common within Ireland approximately 1,000 years ago, and where his paternal ancestor took the O'Brien surname. His paternal ancestor lived in a tribal group surrounded by male relatives who inherited surnames like Kennedy, Slattery, Hogan and Harte (among many others). With the arrival of the Normans in 1169AD some of his genetic relatives formed relationships with their new neighbours with surnames like Butler, Burke and Fitzgerald. When one's ancestors have lived in an area long enough they typically leave evidence of their long ancestral links in the placenames and historical monuments one finds there. Besides Gortlassabrien, there are many castles, townlands and local placenames that area clear references to his O'Brien ancestors and their genetic relatives, see **Figure 10**. The test subject's genetic relatives will undoubtedly have left evidence of their ancestral links with this area in its history and in the DNA of the current inhabitants.



**How to confirm a pinpointed 'Paternal Ancestral Genetic Homeland'**

Confirmation of the paternal ancestral link with the O'Briens of Northwest Tipperary will require the recruitment of O'Brien farmers from the area surrounding Gortlassabrien for *Y-DNA* testing.

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**If you believe you may be related to the test subject Joe O'Brien you  
can contact him: [jmobrien14@yahoo.com](mailto:jmobrien14@yahoo.com)**