

Case Study

Pinpointing the O'ROURKE Genetic Homeland

www.irishorigenes.com



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

Dr Tyrone Bowes
14th August 2012

INTRODUCTION

A commercial 37 marker 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 many individuals with different surnames? The answer is quite simple. Roughly 1,200 years ago one's direct medieval male ancestor, the first for example to call himself 'O'Rourke' was living in close proximity to others with whom he was related but who assumed other surnames like McTernan, and McGowan. Jump forward 1,200 years and there will be many descendants of those individual some of whom will today undergo ancestral DNA testing. Hence the surnames of one's medieval ancestor's neighbours are reflected in today's DNA test results.

In Ireland surnames can still be found concentrated in the County from which they originate. In this manner one can examine the individual [surname distribution maps](#) on the Irish Origenes website for the surnames that reoccur as genetic matches from DNA testing and pinpoint a '**Genetic Homeland.**' The Genetic Homeland is the very small area, usually within a 5km (or 3 mile radius) where one's ancestors lived for hundreds if not thousands of years. It is the area where one's ancestors left their mark in the placenames of that area and in the DNA of its current inhabitants. Since modern science can pinpoint a Genetic Homeland it can also be used to confirm it by DNA testing individuals recruited from the identified area. This Case Study details how I used the test subject 'O'Rourke's' Y-DNA results to pinpoint his Genetic Homeland. At the end of the report is a checklist on how to pinpoint your own Genetic Homeland.

Notes of caution!

1. In Ireland each of the estimated 1,500 distinct Clans have a single founding ancestor, that's an estimated 1,500 Adam's from whom one can trace direct ancestry. But science has demonstrated that only 50% of individuals with a particular Irish surname will be related to the surnames founding ancestor (a surname 'Adam'), the other 50% of people will have an association that has arisen due to non-paternal events (NPEs), usually the result of adoptions or infidelity.
2. Often people are looking for their DNA results to trace back to a specific area. One must remember that the DNA results reflect one's ancestor's neighbours from around 1,200 years ago. As a result if your recent Irish ancestors were originally 9th Century Viking raiders, 11th Century conquering Normans, or 16th Century Planters, your DNA results will reflect earlier English, Scottish, 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!

Pinpointing the GENETIC HOMELAND

To identify one's Genetic Homeland one must first find the surnames that continually appear as genetic matches. These reoccurring surnames reflect one's ancestor's neighbours from the time when surnames became common. Results for test subject O'Rourke are shown in **Table 1**.

SURNAMES THAT REOCCUR AS A GENETIC MATCH FOR TEST SUBJECT O'ROURKE FROM Y- DNA37 TESTING

Test subject	37 Marker Y-DNA test				
	37 marker level				
	exact	-1	-2	-3	-4
O'Rourke	Roark/Rourke(x10)	-	McElroy/Gilroy(x3) McTernan/Tiernan (x14)	-	McGowan/McCown/Smith ¹ (x10) Kelly/Kelley(x6) Kenny/Kenney(x7)

Table 1: Reoccurring surname matches for test subject O'Rourke. Each Surname appears at the earliest point at which it occurs as a DNA match, for example the first match with a McTernan occurs at 35 of 37 markers but not all McTernan's will match at this level. In brackets are the numbers of individuals that occur as a match. Coloured font indicates ethnicity; Irish, English. ¹Smith has been used to anglicise the surname McGowan.

Upon DNA testing Mr O'Rourke matched other O'Rourke's and this implies that he has retained the surname of his founding ancestor, the O'Rourke 'Adam.' However, O'Rourke is associated with at least 4 distinct geographical areas, see **Figure 1**. This indicates that there were multiple (possibly) unrelated O'Rourke' Adams living in different geographical areas within Ireland. However, Mr O'Rourke's reoccurring surname matches as a snapshot of his ancestors neighbours should cluster to a single area and hence reveal which O'Rourke Clan he descends from. These reoccurring surname matches (as identified in Table 1) do indeed display a common area of association within Ireland, see **Figure 1**. The McTernan and McGowan surnames are notable as both are associated exclusively with Leitrim, which implies that the test subject can only be descended from the Leitrim O'Rourke Clan.

The surnames of Ireland map shows where farmers with a particular surname cluster in 1911 (farmland like the surname and Y chromosome are typically passed from father to son). When one places pins on this map where the surnames present in Table 1 are located, the association with Leitrim is evident, see **Figure 2**. However the location of the O'Rourke, McTernan, and McGowan surnames appear relatively distant to one another and a closer examination of farmers (heads of household) is required to determine where within County Leitrim these 3 farming communities live in close proximity.

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WHERE DO MR O'ROURKE'S REOCCURRING SURNAME MATCHES ORIGINATE?

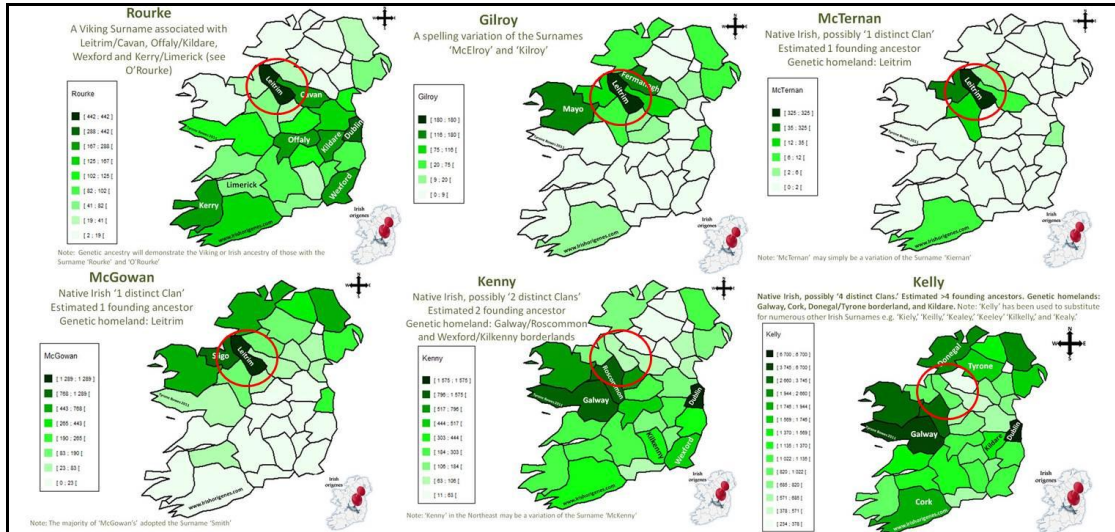


Figure 1: Surname distribution maps for Mr O'Rourke's genetic matches show a common area of association. The reoccurring surnames are all associated with County Leitrim or surrounding Counties (red circle). The McTernan and McGowan surnames are associated exclusively with Leitrim.

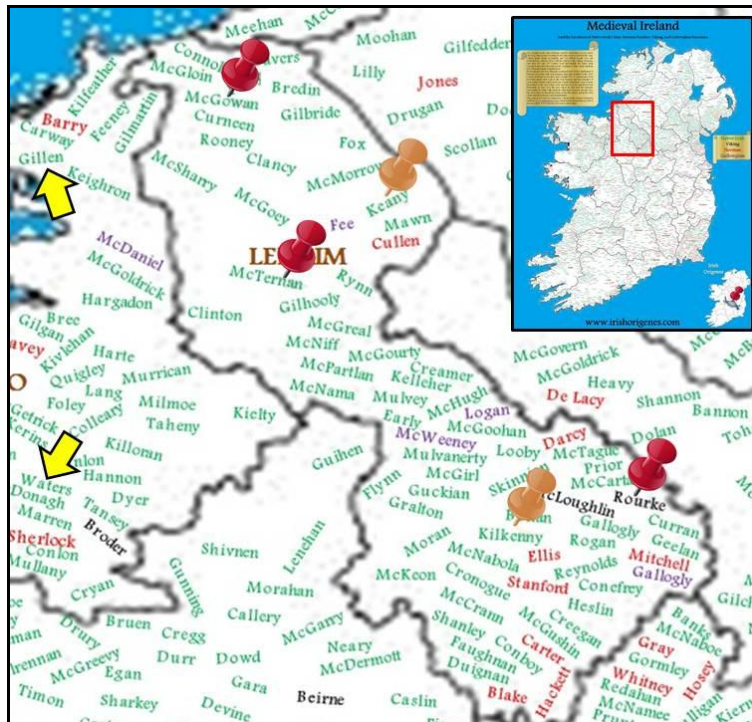


Figure 2: The Irish Origenes Surnames of Ireland map showing where Farmers associated with each surname cluster in 1911. The most frequent genetically reoccurring surnames are O'Rourke, McTernan, and McGowan, which are all associated with County Leitrim (red pins). The surname Kenny may be a variation of either Keany or Kilkenny (orange pins). The surnames Waters and Gillen which appear as singularly occurring surname matches at the 37 marker level can be found in neighbouring Sligo (yellow arrows). The surname Kelly occurs outside the scope of this image in both neighbouring Donegal and Roscommon. The pattern of pins and arrows suggest an association with north Leitrim.

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By placing pins in the townlands in Leitrim and its neighbouring Counties where farmers with the surnames O'Rourke, McTernan, Gilroy, and McGowan were found in 1911, a common area of association is revealed, see **Figure 3**. The O'Rourke farming community is found in 2 clusters situated in southern and northern Leitrim. These may represent branches of the same family which split at some point in history. Mr O'Rourke's genetically matching surnames predominate in north Leitrim, indicating that his ancestry is associated with the northern branch of the O'Rourke's. This branch of the O'Rourke's concentrate close to the Fermanagh border surrounded by their genetic cousins the McGowan's and Gilroy's to the north and McTernan's to the south.

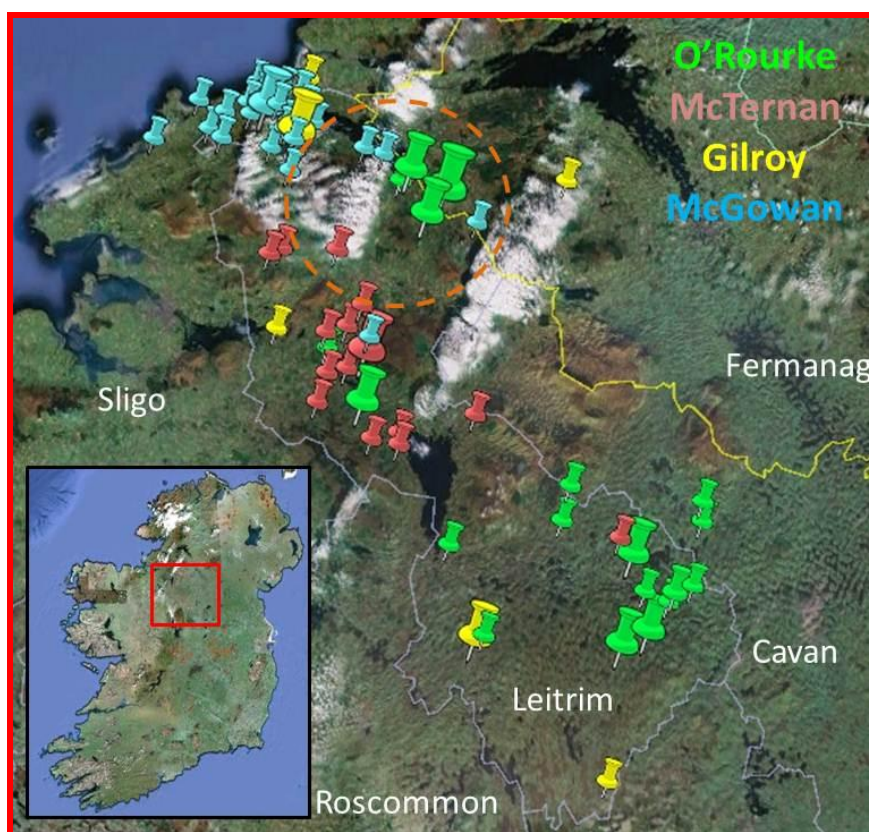


Figure 3: Mr O'Rourke's reoccurring surname matches cluster in North Leitrim. There are two O'Rourke (green pins) population clusters within Leitrim representing 2 branches of the O'Rourke Clan. Mr O'Rourke's most frequent and closest genetic matches are to McTernan's (red pins) and McGowan's (blue pins) which cluster close to the northern O'Rourke's. Similarly the Gilroy farming community predominates in the north and this indicates that the test subject ancestry is related to the northern branch of the O'Rourke's (orange broken circle).

The Genetic Homeland

The test subjects Genetic Homeland surrounds the town of Kiltyclogher where the descendants of the northern O'Rourke Clan could still be found farming the lands of their ancestors in 1911, see **Figure 4**. Evidence of Mr O'Rourke's ancestor's long ancestral association with north Leitrim is reflected in the ruins of castles built by the O'Rourke's, most notably Dromahair which served as their capital, or on O'Rourke lands e.g. Manorhamilton a plantation bawn which was built in a place called

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O'Rourke's little meadow. There also placenames that refer to the O'Rourke's; Aghatirourke in nearby Fermanagh, and their genetic cousins the McGowan's and Kelly's reflected in Castlegowan, Lisnagowan, and Doonkelly respectively.

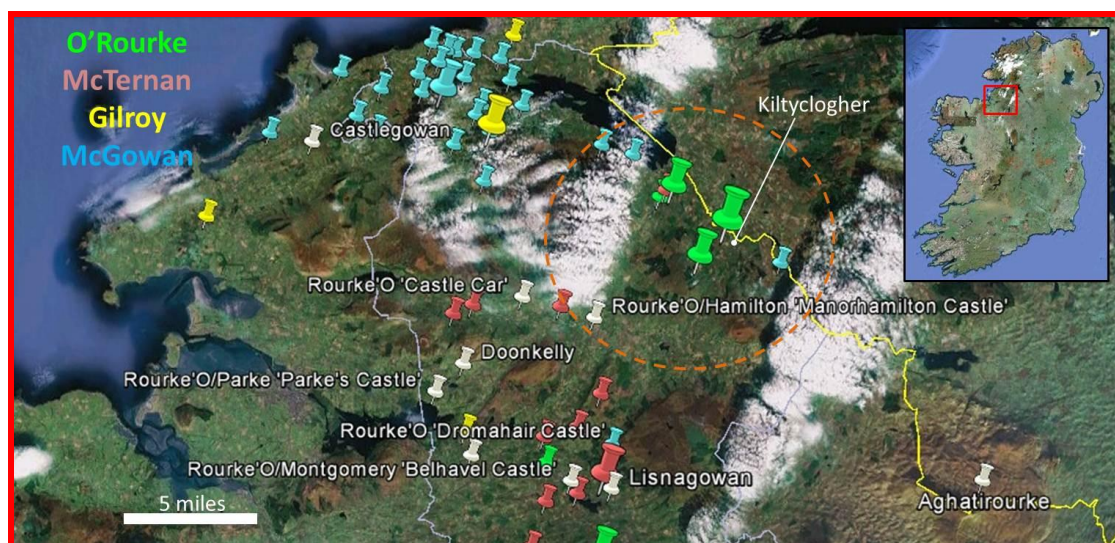


Figure 4: Mr O'Rourke's Genetic Homeland centred upon Kiltyclogher in north County Leitrim. Mr O'Rourke's Genetic Homeland is located in the area surrounding Kiltyclogher (orange broken circle) where the northern O'Rourke farming community concentrates in 1911. To the southwest of this area one finds castles and placenames associated with the O'Rourke's. One also finds placenames associated with their genetic cousins the McGowans (castlegowan) and the Kellys (Doonkelly).

The Irish Origenes Clan Territories of Ireland map was reconstructed based on the location of castles and their known historical association to a particular Clan or Family. This map shows that the medieval O'Rourke territory encompassed most of modern County Leitrim, see **Figure 5**. This territory consisted of two regions physically separated by Lough Allen and its surrounding mountains. This physical separation may account for the genetic matches to the McTernan's and McGowan's among the northern O'Rourke's. Presumably the physical separation of different branches of the O'Rourke's and the continued evolution of surnames/Clans means that new Clans like the McGowan's developed as an offshoot of the northern O'Rourke's.

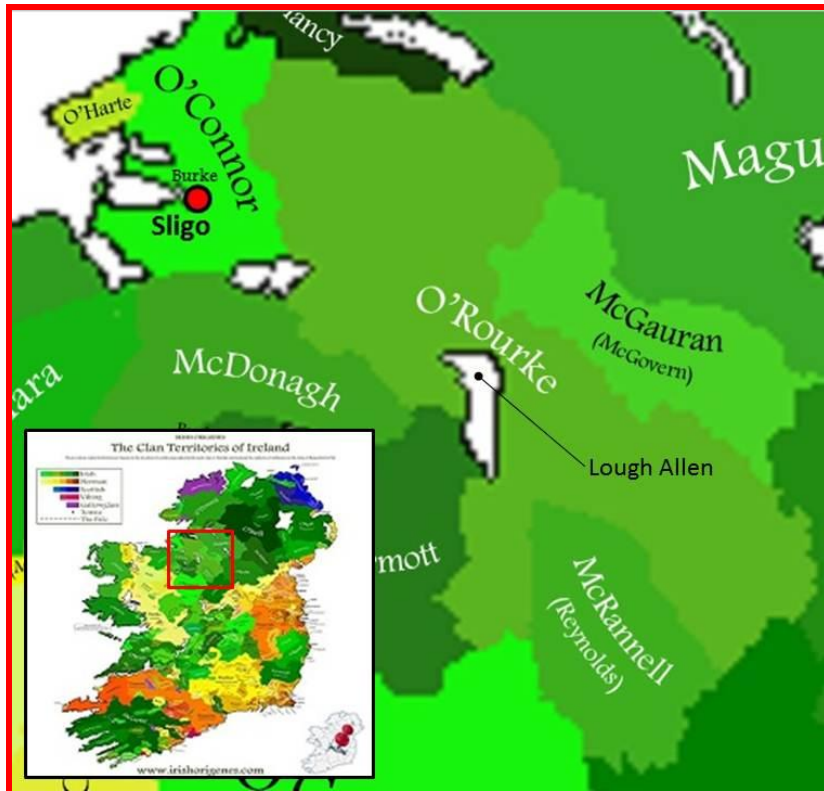


Figure 5: The Medieval Clan territories of Ireland. The O'Rourke's ruled most of what is today known as County Leitrim. Their ancient territory is physically cut into 2 parts by Lough Allen and the surrounding mountainous terrain. This physical isolation and the continued evolution of surnames may account for the potentially differing genetic matches among the various branches of the Leitrim O'Rourke's.

How to confirm a pinpointed 'Genetic Homeland'

Mr O'Rourke's Genetic Homeland can be established by recruiting O'Rourke's (preferably Farmers) from the area around Kiltyclogher for Y-DNA37 testing.

CHECK LIST FOR DISCOVERING YOUR OWN GENETIC HOMELAND

1. First you must order a Y-DNA37 test from Family Tree DNA. To order follow the 'are you a warrior' link from the [Irish Origenes](http://www.irishorigenes.com) homepage.
2. [Irish Origenes Surnames database](#)
3. [Irish Origenes Surnames map](#) Stick a pin on your Surname and on the Surnames of your genetic matches (as revealed by DNA testing) to discover your Genetic Homeland.
4. Google Earth.
5. [Irish Origenes Clan Territories Map](#). This map details the territories of over 400 of the most prominent Irish Clans and Norman families and is based on the location of nearly 1,500 castles and their known historical association to these Clans/Families.

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6. [Irish Origenes Castles of Ireland Map](#). This map details the names and precise location of nearly 1,500 castles in Ireland. Input the co-ordinates into Google Earth and view the castles on street view.
7. Your Genetic Homeland can be confirmed by recruiting male volunteers with the Surname of interest from the identified area for Y-DNA37 testing.

ALTERNATIVELY ORDER YOUR OWN CASE STUDY BY CONTACTING ME DIRECTLY tyronebowes@gmail.com

The consultation for your own Case Study is free. At present there is an 86% success rate. If in the unlikely event that I cannot pinpoint your Genetic Homeland I will explain why and I will not charge you.

Every successful Case Study customer also receives an Irish Origenes Surnames of Ireland, Clan territories of Ireland, and the Castles of Ireland map.