

Case Study

Pinpointing the DONOHOE

Genetic Homeland

www.irishorigenes.com



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

Dr Tyrone Bowes
Updated 3rd 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. 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 'Donohoe' was living in close proximity to others with whom he was related but who assumed other surnames like McCarthy, O'Leary, and O'Keeffe. Given that 1,200 years have passed since surnames were adopted, there will be many descendants of these individuals some of whom today will undergo DNA testing. Hence the surnames of one's medieval ancestor's neighbours will be 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](#) 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 from the pinpointed area. The Case Study below will detail how I made sense of Dr Donohoe's DNA test results and at the end it will provide a checklist on how to proceed in identifying one's 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 (the surname 'Adam'), 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 infidelity.
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 1,200 years ago. As a result if your recent Irish ancestors were originally a 9th Century Viking raiders, 11th Century conquering Normans, or a 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!

Donohoe: A brief family history

The test subject Dr Donohoe is a good friend of mine and was a willing participant in this study which set out to demonstrate the reproducibility of an analytical research method that uses the surnames of an individual's 'genetic matches' to pinpoint a time and place where a founding ancestor (e.g. the first Donohoe/Donohoe Adam) lived. Like the vast majority of people today Dr Donohoe had no idea about his distant ancestors. His most recent ancestors were Irish Catholics living in Dublin City, Ireland. He has mentioned that there appears to be some confusion in his family as to the proper spelling of his surname.

Pinpointing test subject Donohoe's Clan and Genetic Homeland

To identify a Genetic Homeland one must first find the surnames that continually appear as genetic matches. These reoccurring surnames are less likely to be a result of non-paternal events (adoptions/infidelity) and reflect the surname of a medieval ancestors neighbour. Results for test subject Donohoe are shown in **Table 1**.

SURNAMES THAT REOCCUR AS A GENETIC MATCH FOR TEST SUBJECT DONOHOE FROM 37 MARKER Y-CHROMOSOME DNA TESTING

Test subject	37 Marker Y-DNA test						
	37 marker level					25 Marker level	
	exact	-1	-2	-3	-4	exact	-1
Donohoe	-	-	-	-	-	Donohoe (x12) McCarthy (x5) O'Connor (x4) O'Keeffe (x6)	Moriarty (x6) O'Neill (x5) Sullivan (11) Sheehan/Shannon(x4) Lee(x5) Donovan(x8) Dennehy (x3) Daly(x4) O'Leary(x10)

Table 1: In this table are listed the surnames that continually reoccur as a genetic match. Each surname appears at the earliest point at which it occurs, for example the first match occurs with another Donohoe in 25 of 25 markers (25/25), but not all of the other individuals with the surname 'Donohoe' will match at this level. In brackets are the number of individuals (with a particular surname) that appear as a match, coloured font indicated the ethnicity associated with each surname, **Green; Irish**.

How many Clan Donohoe's?

Dr Donohoe matches other people called Donohoe (see **Table 1**) and this indicates that he is among the 50% of individuals who have retained the Donohoe surname over the last estimated 1,200 years (or since a Donohoe Adam first assumed the surname).

Modern science has shown that the surname Donohoe has at least 3 founding ancestors, or 3 Donohoe 'Adam's' from whom all the Donohoe's in the world are potentially descended from. When one looks at where the Donohoe surname is found in Ireland (**Figure 1**) one can see 4 areas; in Cavan, Wexford, Galway, and

Donohoe - A Case Study

Kerry where the Donohoe Surname and its spelling variations are concentrated. This means that there are between 3 and 4 distinct (unrelated) medieval Irish Clans that adopted the surname Donohoe. What is amazing is that if you are a 'Donohoe' then the results from a Y chromosome DNA test will reveal which Donohoe Clan you descend from and hence where your 'Genetic Homeland' can be found.

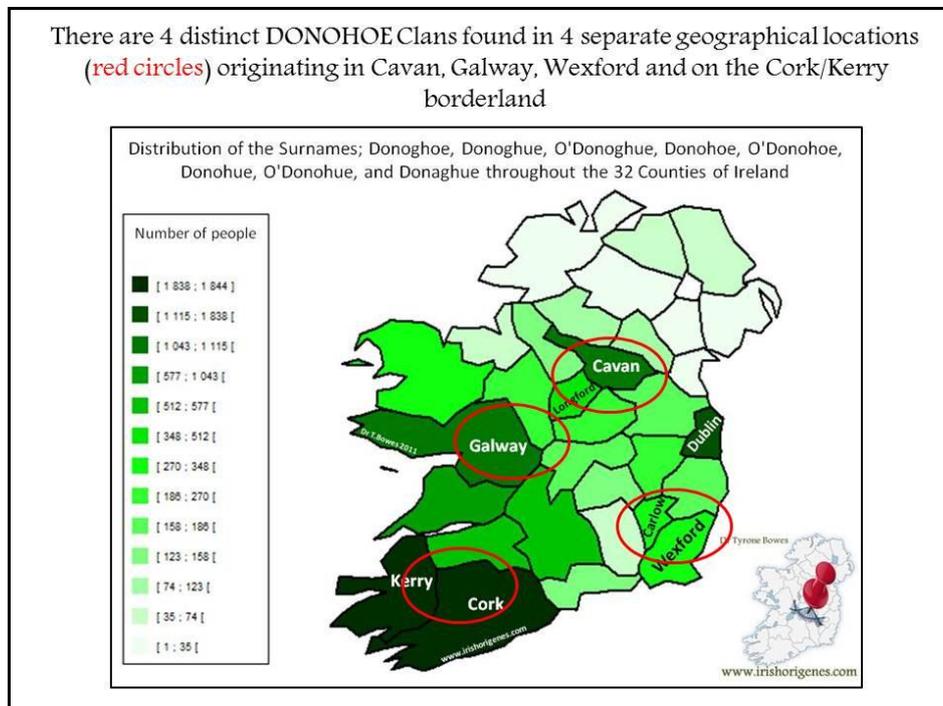


Figure 1: Surname distribution of Donohoe and its spelling variants. The surname Donohoe is associated with 4 distinct locations (red circles) in Ireland; Cavan, Galway, Cork/Kerry, and Wexford. Dr Donohoe could be descended from any one of these Clans!

WHERE DO THE MCCARTHY, O'CONNOR, AND O'KEEFFE SURNAMES ORIGINATE?

The test subject Donohoe's closest genetic matches are to other 'Donohoe's,' and to people called McCarthy, O'Keeffe, and O'Connor. By examining the surname distribution maps from the Irish Origenes website one can see a clear association among all these surnames with Counties Cork and Kerry, see **Figure 2**.

To precisely pinpoint Dr Donohoe's Genetic Homeland one must stick pins on all of the surnames in **Table 1** in the areas where they appear on the [Irish Origenes Surnames of Ireland map](#) to see a pattern emerge, see **Figure 3**. There is a clear association with each and every one of these surnames with County Kerry and the surrounding area. These surnames are literally a snapshot of Dr Donohoe's medieval ancestor's neighbours.

Donohoe - A Case Study

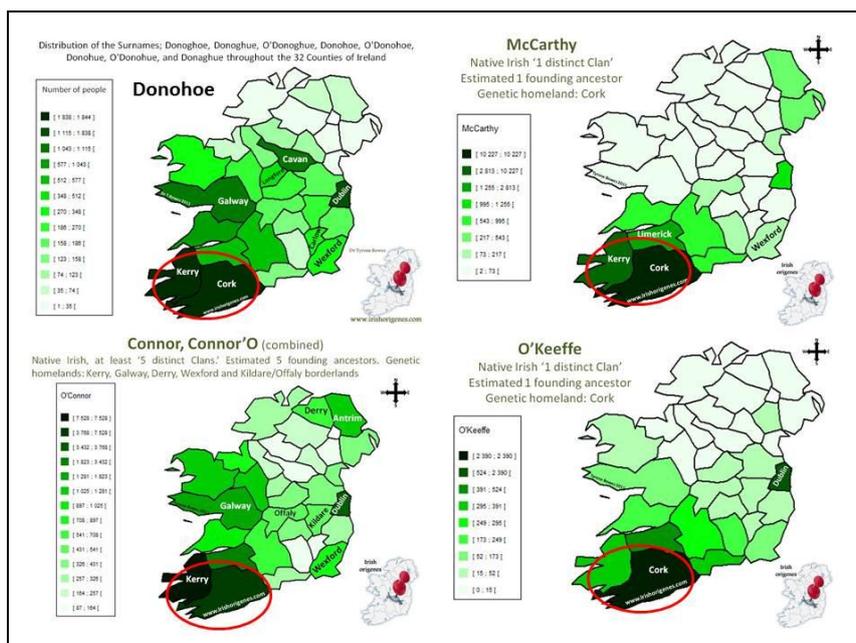


Figure 2: Surname distribution maps for the Surnames that reoccur as the closest genetic matches including Donohoe, McCarthy, O'Connor, and O'Keefe. Each of these surnames is associated with the southwest of Ireland particularly Counties Cork and Kerry (Red circle). Images taken from the [Irish Origenes surnames database](http://www.irishorigenes.com).

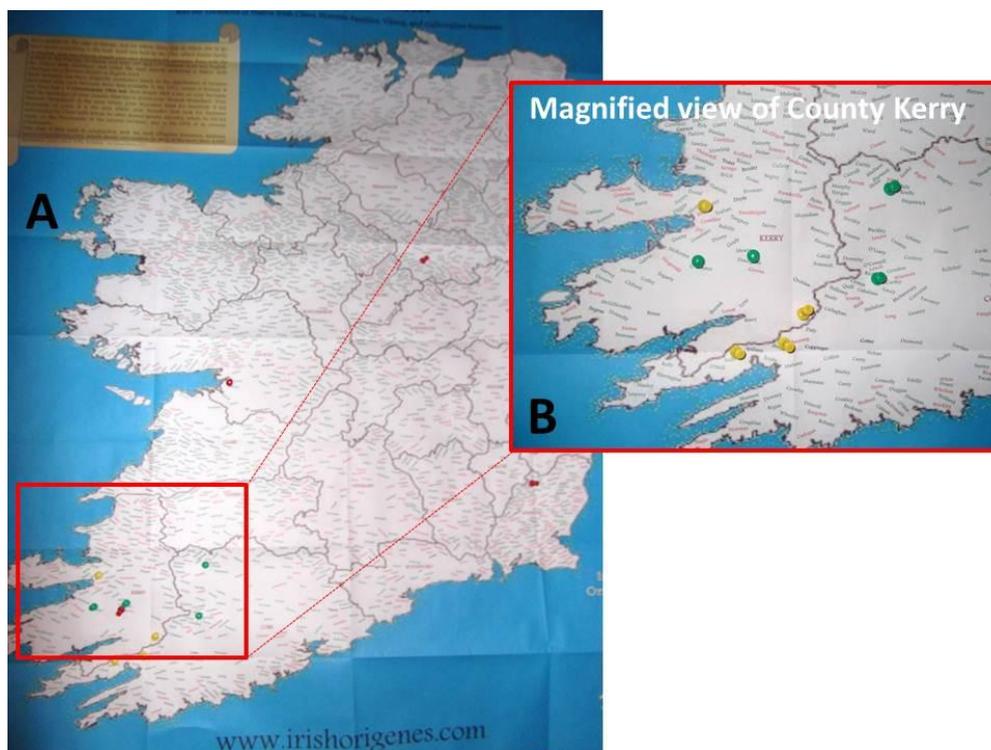


Figure 3: The Irish Origenes Surnames of Ireland map showing where Farmers associated with each surname clustered in 1911. **Panel A** shows where farmers (red pins) with the surname Donohoe's clustered. When one places Green and yellow pins on the surnames of Dr Donohoe's genetic matches as identified in **Table 1** they cluster in a single geographical area in County Kerry close to the 'Kerry Donohoe's,' **Panel B**. This means that Dr Donohoe is descended from the Kerry Clan Donohoe.

Donohoe - A Case Study

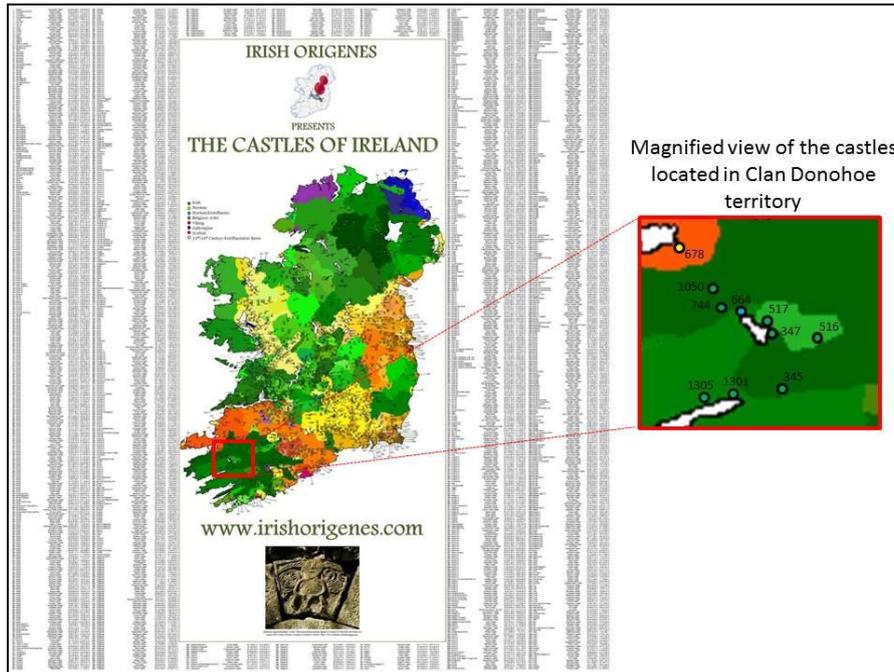


Figure 5: The Irish Origenes Castles of Ireland Map showing the location of castles associated the Kerry Clan Donohoe (red box magnified). There are 2 castles (516, and 517) associated with the Killarney O'Donohoe's. [This map is available from the Irish Origenes website.](http://www.irishorigenes.com)



Figure 6: Dr Donohoe's Genetic Homeland situated in Killarney in County Kerry. Clan O'Donohoe has left evidence of their long association with the land surrounding Lough Leane in Kilarney in its placenames (yellow pins). Close by are placenames associated with his genetic cousins the O'Sullivan (blue pins), O'Mahony's (white pins), and McCarthy's (red pins).

How to confirm a pinpointed Genetic Homeland

Donohoe's can still be found farming land in Killarney and to confirm this area as Dr Donohoe's Genetic Homeland will require their recruitment for commercial ancestral Y-DNA 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](#) 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.
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.