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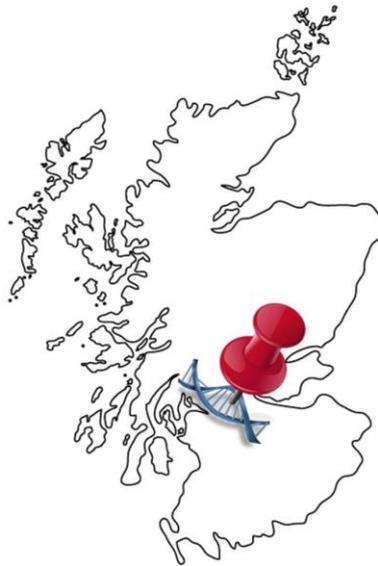
tyronebowes@gmail.com

**The consultation for your own Case Study is free. At present
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cannot pinpoint your Genetic Homeland I will explain why and
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Pinpointing the MacKenzie Genetic Homeland

A Scottish Case Study

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

**Dr Tyrone Bowes
Updated 26th June 2013**

INTRODUCTION

A 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 genetically match many individuals with 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 'MacKenzie' was living in close proximity to others with whom he was related but who assumed other surnames like MacLachlan. Given that 1,000 years have passed since surnames were adopted, there will be many descendants of these individuals some of whom will today undergo commercial ancestral DNA testing. Hence the surnames of one's medieval ancestor's neighbours will be reflected in today's DNA test results.

Early 19th century census data demonstrates that Scottish surnames could still be found concentrated in the Counties from which they originated. In this manner one can examine surname distribution maps (for the surnames that appear as a DNA match) and pinpoint a '**Genetic Homeland.**' The Genetic Homeland is the small area 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 identified location.

Notes of caution!

1. In Ireland each of the estimated 1,500 distinct Clans had a single founding ancestor, that's an estimated 1,500 Adam's 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 infidelity. 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 reflect one's ancestor's neighbours from around 1,000 years ago. As a result, if your recent Scottish ancestor was originally an Anglo-Saxon settler, Viking raider, or 12th Century Norman your DNA results will reflect earlier English, Welsh, and possibly Scandinavian origin. One must approach this process with an open mind!

Interpreting the Y-DNA test results

To pinpoint a Genetic Homeland one must first identify 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 'MacKenzie' are shown in **Figure 1**.

| Test subject | 67 marker level | | | | | 37 marker level | | | | | | | |
|--------------|-----------------|----|-----------------------------|--|--|--|--|--|----|-----------|---|---|--|
| | exact | -1 | -2 | -3 | -4 | exact | -1 | -2 | -3 | -4 | | | |
| MacKenzie | - | - | McCloughan(x6) ³ | Stephens(x4) McCumsey/McComsey(x3) ⁴ Walsh/Welsh(x2) Kavanagh(x6)/Cavanagh(x5) | Winder(x3)/Winders(x3) Darcy(x3) Thomas(x3) ² O'Neill(x4) Shingleton(x3) ¹ | Quigley(x6) Beatty/Beattie/Baty/Batey(x28) Doyle(x6) Spence(x3) | Roach(x3) McHale(x4) Carson(x2) McInnate(x2) Byrne(x11) Monroe/Munro(x3) Adams(x2) Gaston(x11) Stewart(x5) Stuart(x1) Kelly/Kelley(x2) Barber(x2) Burns(x11) Carmack(x3) Roby/Robey(x2) Owings/Owens(x2) Daly/Dewty/Doughy(x38) | Ferguson(x5) ^{1,2} MacKenzie/McKenzie(x7) Dale(x2) Lee(x3) Hamilton(x2) Johnson/Johnston/Johnstone(x11) ² Cox(x2) MacDonald(x3) ² Berry(x2) Ollen(x2) Conner/O'Conner(x2) Brown(x7) Shaw(x2) Rhea(x1) Asbel/Azbel(x6) ¹ Anderson(x9) ² Jordan(x2) | - | Clark(x4) | - | Pendergast(x6) ¹ Hyde(x2) Madison(x3) Dooley(x9) ¹ | Robinson(x4) Thompson(x3) McDowell(x3) Hudson(x2) Cullen |

Figure 1: Reoccurring surname matches for test subject MacKenzie. Surnames appear at the point at which they first occur as a genetic match e.g. the first match to an individual called MacKenzie occurs at 60/67 markers although not all MacKenzie's may match at that level. Figures in brackets represent the number of individuals with a particular surname who occur as a genetic match. Coloured font indicates the ethnicity associated with each surname; **Norman/English**, **Scottish**, **Irish**, **Welsh**. Black font indicates surnames with multiple ethnic origins. ¹Members of the same close family recruited for Y-DNA testing and therefore excluded from analysis. ²Most of these matches occur at 12 markers and shared ancestry may be coincidental. ³McCloughan is a variant of Scottish MacLachlan which occurs as a match at 37 markers. ⁴McCumsey is a variant of MacKenzie, these variants arise as one moves further from the place of origin.

Upon commercial ancestral Y-DNA testing Mr MacKenzie matched other MacKenzie's/McCumsey's (who tested independently) which indicates that he has retained the surname of a MacKenzie-Adam (the first to take that surname), see **Figure 1**. Mr MacKenzie's other reoccurring surname matches as revealed by Y-DNA testing, which as a snapshot of a direct medieval male ancestors neighbours from the time when he first picked his surname, will have a common area of association and hence pinpoint where his medieval ancestor lived. However although Mr MacKenzie closest genetic matches are to individuals named McCloughan (a spelling variant of Scottish MacLachlan) which indicates a more recent paternal ancestral link with Scotland, which is confirmed by surname distribution mapping, see **Figure 2**. The remainder of Mr MacKenzie's reoccurring matches are a confusing assortment of Irish, Welsh, Scottish, English, and French surnames. This ecliptic mix of surnames is typically reflective of Norman ancestry.

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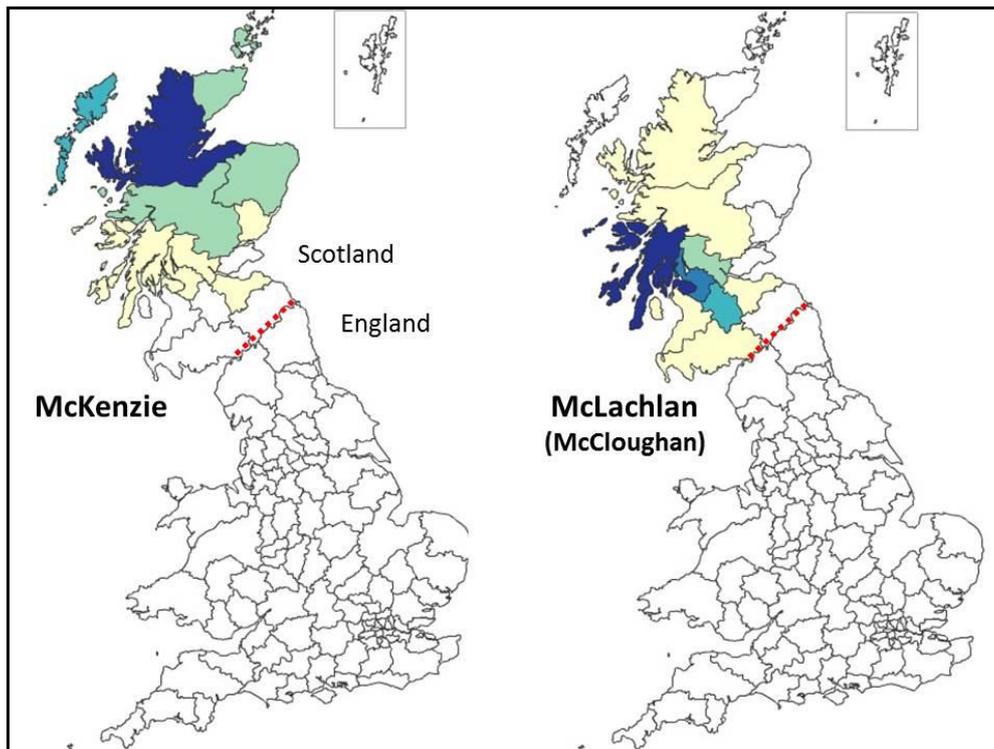


Figure 2: Surname distribution mapping reveals a paternal ancestral link with the Scottish Northwest. In 1881 the MacKenzie surname was overwhelmingly associated with the Scottish Northwest where one also finds the Scottish MacLachlan's.

The Norman-Irish connection

This mix of surnames makes absolutely no sense and can be very confusing until one examines the idiosyncrasies of the Normans. Historically the Normans repeated a pattern of conquest and settlement, which sometimes involved assimilating the language, culture, and surnames of the people they conquered (and married into). In addition they very often took new surnames based upon, and in honour of prominent members of established families. Take for example the Norman Prendergast Family (who appear in Figure 1 as genetic relatives). They arrived in England in 1066AD with William the Conqueror, were granted lands in Wales which they completely vacated for new lands acquired in the Conquest of Ireland which began in 1169AD. In Ireland the Prendergast's settled mainly in Wexford, Kerry and Mayo. But crucially in Kerry and Mayo they adopted new surnames like Fitzmorris/Fitzmaurice and McMorris, the latter after they had completely adopted Irish ways and customs.

Given this constant pattern of conquest and settlement it can be very difficult to pinpoint one's Norman ancestors to a single specific area based on Y-DNA matches. However, in Ireland the highest density of people with Norman surnames are still found in County Wexford where the Normans first stepped ashore in 1169AD. An examination of the Irish, English/Norman, and Welsh surnames that appear as Mr MacKenzie's closest genetic matches reveals a surprising paternal ancestral link with Wexford, see **Figure 3**. Wexford is literally littered with the surnames that appear as genetic relatives in Figure 1. An examination of Wexford as it appears on the Irish Origenes Clan Territories of Ireland Map reveals prominent Norman Families and Irish Clans like the Kavanagh, Brown, Roche, Fitzstephens, Walsh, and Prendergasts

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who appear as Mr MacKenzie's genetic relatives, see **Figure 4**. These Norman Families are found close to territories of the Norman-Irish Fitzgerald family, which history tentatively records as playing a prominent founding role in the founding of the Scottish MacKenzie Clan!

Despite concrete proof, Clan Mackenzie has long cherished a traditional belief in its descent from the Norman-Irish Fitzgerald's. This is based upon the fragmentary records of Icolmkill, and a charter of the lands of Kintail in Wester Ross, granted by Alexander III (1241-1286AD) to Colin Fitzgerald, the MacKenzie founding progenitor (the MacKenzie-Adam). According to the Icolmkill fragment, a person described as 'Peregrinus et Hibernus noblis ex familia Geraldinorum' or 'a noble stranger and Hibernian of the family of the Geraldines,' being driven from Ireland **with a considerable number of followers** in about 1261, was received graciously by king Alexander III, and remained at court. Colin Fitzgerald and his followers subsequently aided the Scots against the Vikings at the battle of Largs in 1263, for which he was rewarded the lands of Kintail, his descendants and his follower eventually became known as the MacKenzie's. The MacKenzie's went on to become one of the most notable and numerous of the Scottish Highland Clans. This version of the founding of Clan MacKenzie is supported by Mr MacKenzie's Y-DNA results.

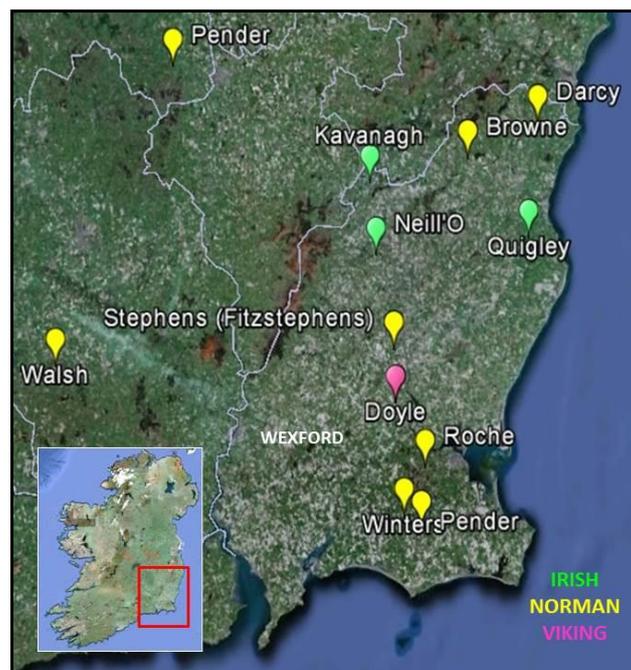


Figure 3: The Norman-Irish Connection. The Normans arrived in Ireland via Wexford in 1169AD. Wexford contains the highest proportion of people with Norman surnames/ancestry than any other County and it is here that one finds Mr MacKenzie's closest most frequently genetically-reoccurring surname matches. Pins are placed where farmers with each surname cluster. Pin colour is indicative of the ethnicity associated with each surname; **Norman**, **Irish**, **Viking**. Pender is a variant of Prendergast.

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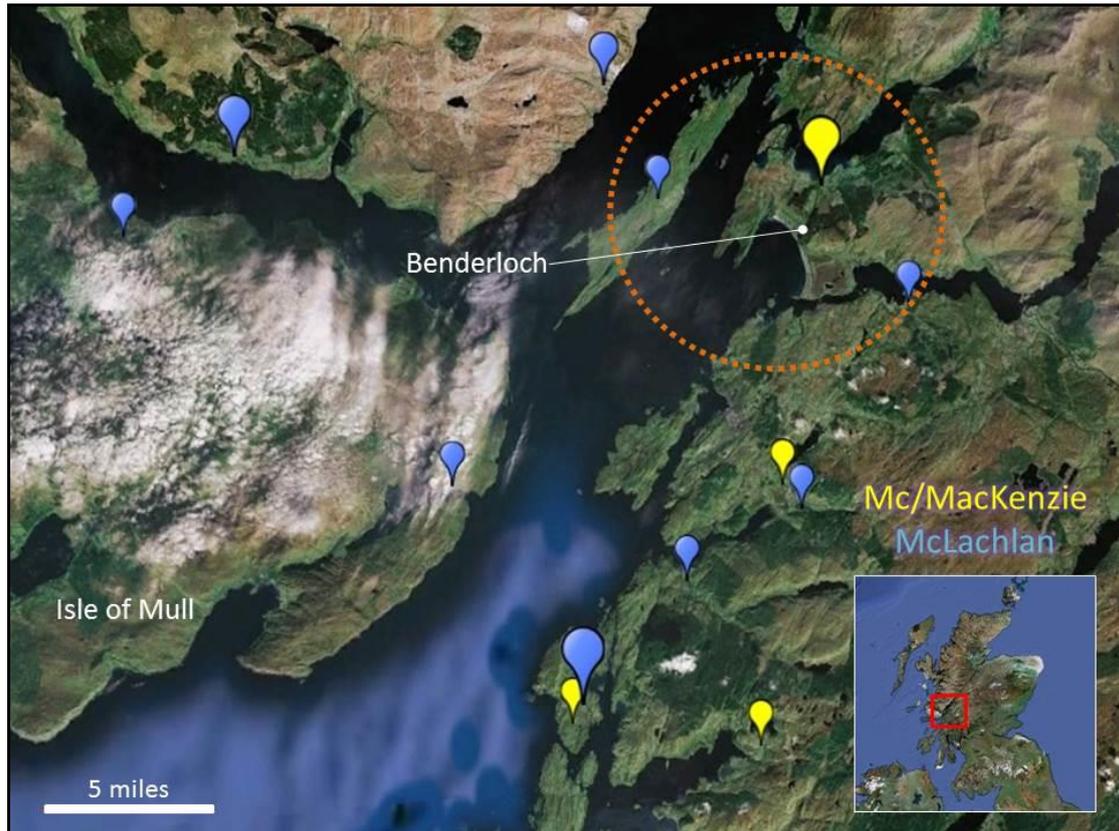


Figure 6: The MacKenzie Genetic Homeland. MacKenzie and MacLachlan farmers cluster in close proximity around Benderloch in the Western Highlands of Scotland. This is most likely the area where Mr MacKenzie's Norman-Irish ancestors settled.

How to confirm the MacKenzie Genetic Homeland

- Confirmation of the area surrounding Benderloch as Mr MacKenzie's Genetic Homeland will require the recruitment of MacKenzie's, preferably farmers from this area for commercial ancestral Y-DNA testing.