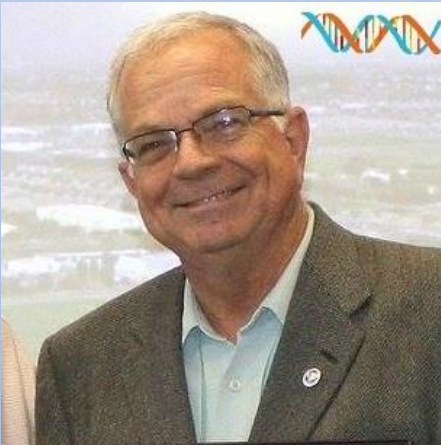


Next Steps with your DNA



Sunland Springs



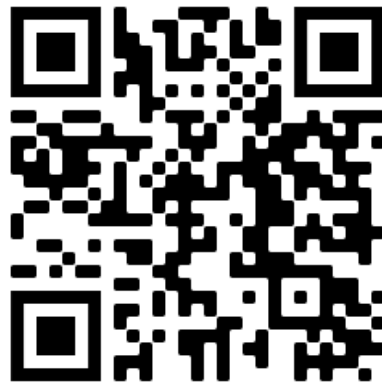
Ken waters
@familytreeaz

<http://familytreeaz.com/presentations>



December 2025

All slides and handouts can be found at:
<http://www.familytreeaz.com/Presentations/>



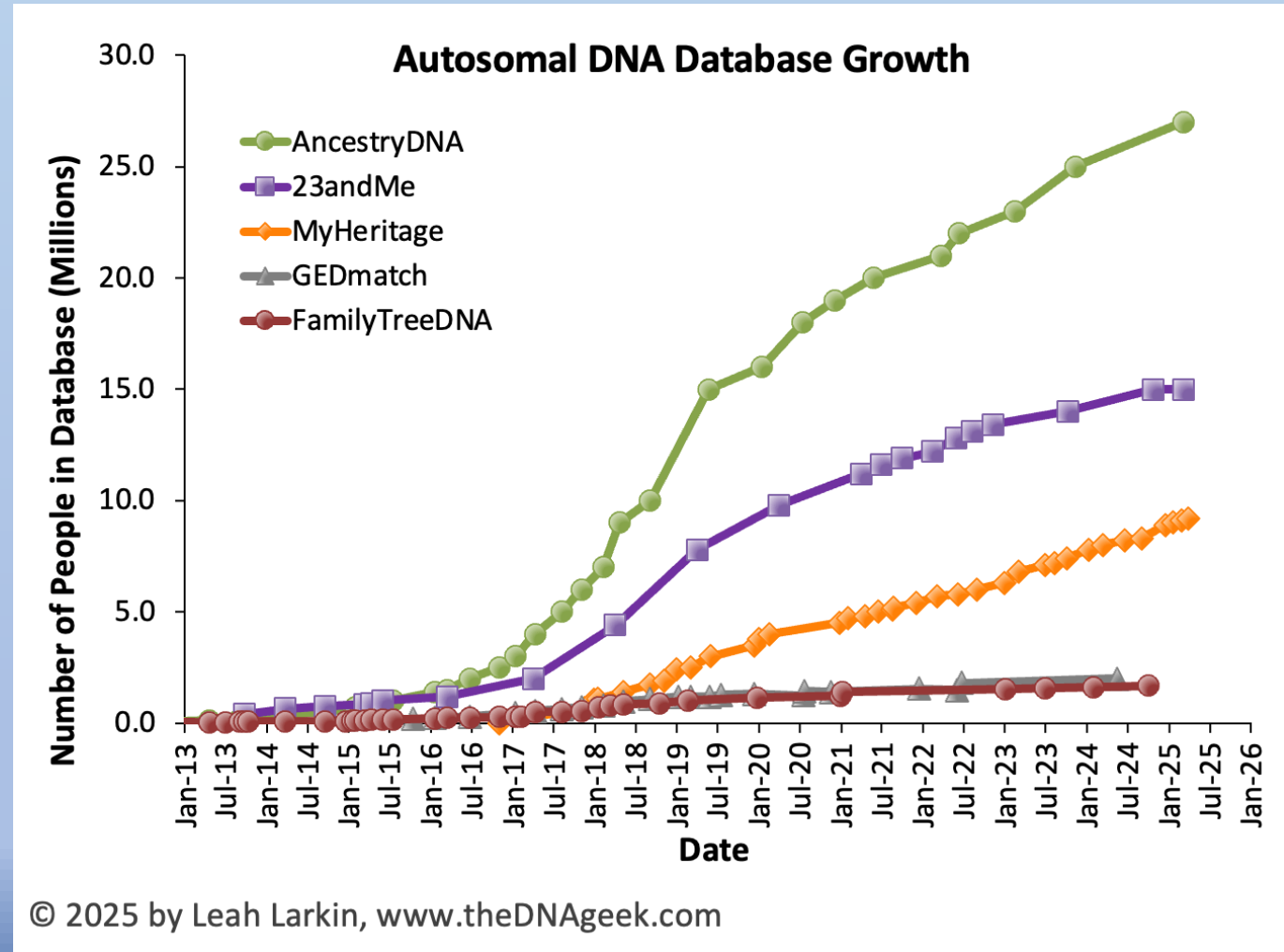
QR Code: take photo to
open to presentations

Variety of Topics

- Downloading your DNA
- Downloading your match list with DNAGedcom
- Linking a tree to your DNA kit
- Timber algorithm
- ProTools
- ThruLines
- WGS
- Ways to save money

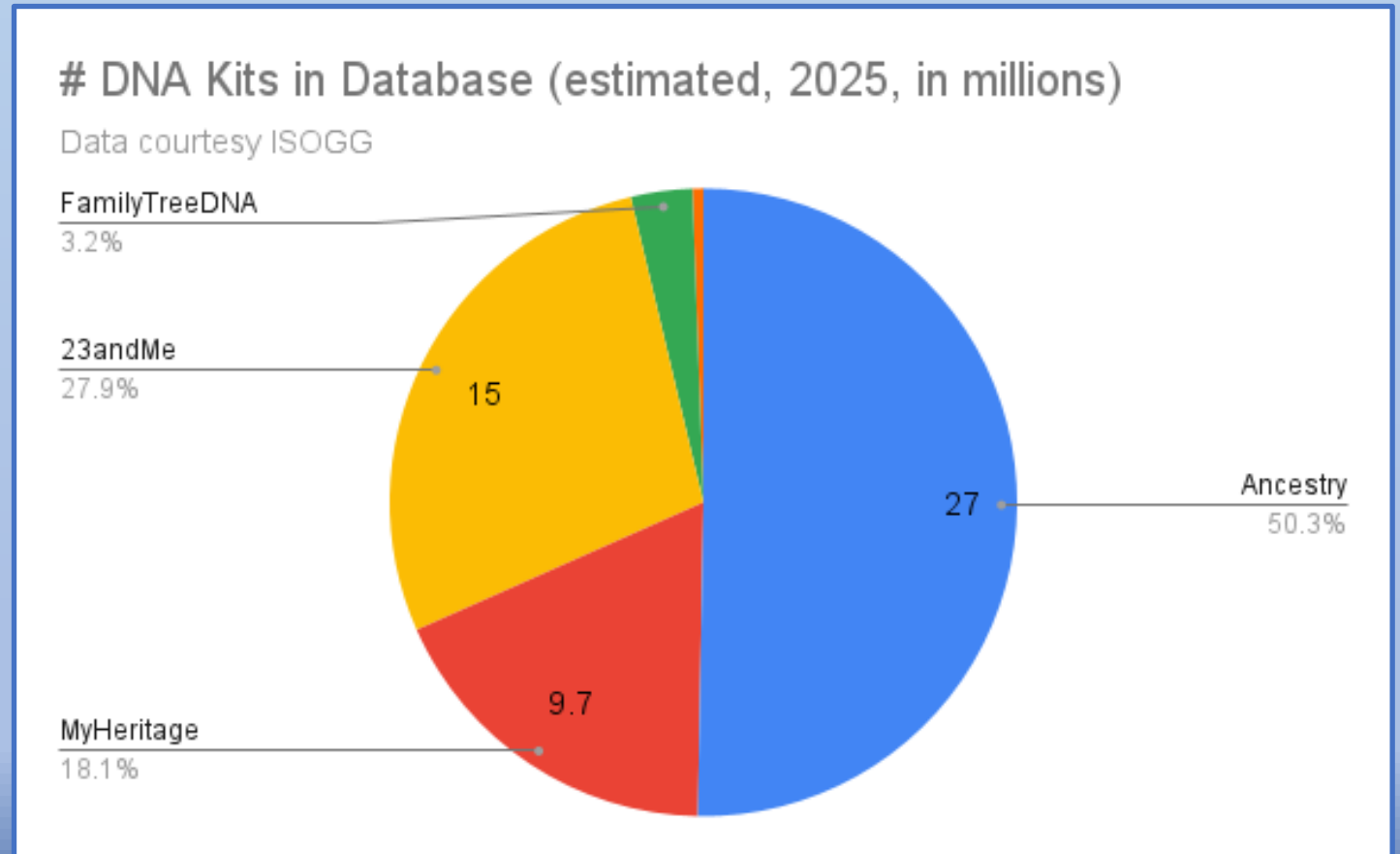
Testing Companies Over Time

- Plus LivingDNA which does not report # of kits, likely < 0.3 million



Current Numbers of tests

- Ancestry has by far the most DNA tests in their database
- Followed by 23andMe and MyHeritage
- The tiny sliver (too small to label) is LivingDNA



Data from https://isogg.org/wiki/Autosomal_DNA_testing_comparison_chart

Linking a Tree to your DNA Kit

Linking a tree to your DNA kit

- On Ancestry and MyHeritage you have the capability to store your family tree
- Be sure to LINK your tree to your DNA kit (go to Your Profile)
- And keep the tree PUBLIC

Linking, unlinking, or changing which tree is linked

From a browser

1. In the top-right corner of [Ancestry®](#), click your **Profile** and select **Account Settings**.
2. On the left side of the page, under *Settings*, click **DNA**.
3. Select a DNA test.
4. Under *DNA and family tree linking*, click **DNA link**.
5. Choose to link, unlink, or change your family tree link.
 - **To link your DNA results to a family tree:** click the **dropdown menu** and **choose an existing tree** or select **+ Start tree** to create a new one.
 - If starting a new tree, add at least one parent and repeat these steps from the beginning.
 - After selecting your tree, enter your name, then select **Link DNA results**.
 - **To unlink a family tree:** click **Remove**.
 - **To change your family tree link:** click the **dropdown menu** and **choose a different tree** or select **+ Start tree** to create a new one.
 - If starting a new tree, add at least one parent and repeat these steps from the beginning.
 - After selecting your tree, enter your name, then select **Link DNA results**.

Ken Waters

Test details

| | | |
|-----------------------|------------------------|---|
| Test name | Ken Waters | > |
| Date of birth | 1956 | > |
| Sex assigned at birth | Male | > |
| Gender representation | Male labels (like son) | > |

DNA and family tree linking

Connect this DNA test to a tree to use them together.

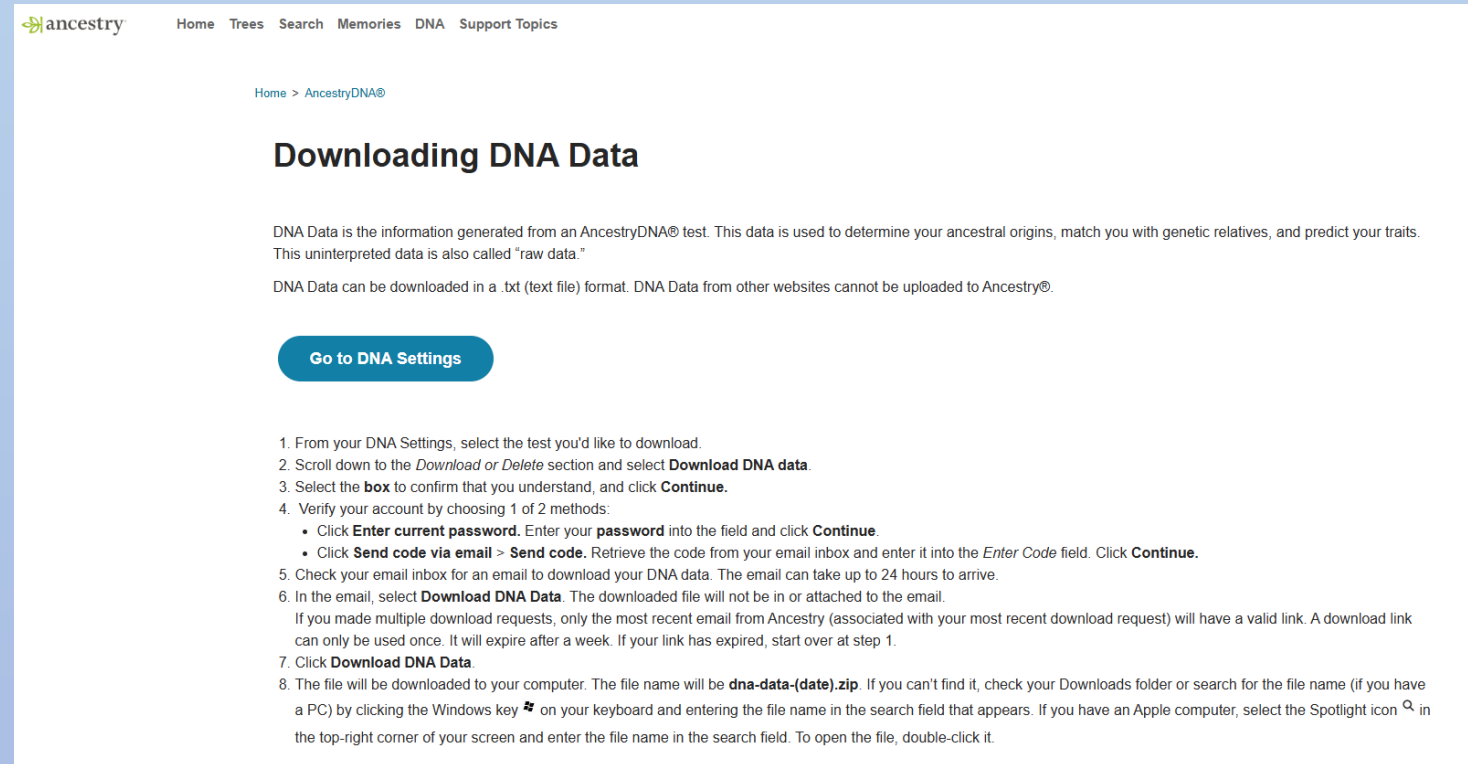
| | | |
|-------------|---|---|
| Linked tree | Linked to Kenneth Richard Waters in [DNA] Waters Tree Email:satwatcher.gen@gmail.com | > |
|-------------|---|---|

Downloading DNA and Match List

Downloading Your DNA

- All 5 testing companies allow **downloading** of DNA
- Directions vary by companies so search on your testing site (or Google)
- Once you've downloaded then you can upload to other sites (currently just 3, GEDMatch, FamilyTreeDNA and LivingDNA)

Special Note: you used to be able to upload to MyHeritage but this capability has been disabled as of June 2025.



The screenshot shows the AncestryDNA website interface. At the top is the Ancestry logo and a navigation bar with links: Home, Trees, Search, Memories, DNA, and Support Topics. Below the navigation bar is a breadcrumb trail: Home > AncestryDNA®. The main heading is "Downloading DNA Data". Below this heading is a paragraph explaining that DNA Data is information generated from an AncestryDNA® test, used for determining ancestral origins, matching with genetic relatives, and predicting traits. It also mentions that this data is called "raw data". Another paragraph states that DNA Data can be downloaded in a .txt (text file) format and that data from other websites cannot be uploaded to Ancestry®. A blue button labeled "Go to DNA Settings" is positioned below the text. At the bottom, there is a numbered list of 8 steps for downloading the data, including selecting the test, confirming understanding, verifying the account, checking email for a download link, and finally downloading the file as a .zip.

ancestry Home Trees Search Memories DNA Support Topics



Home > AncestryDNA®

Downloading DNA Data

DNA Data is the information generated from an AncestryDNA® test. This data is used to determine your ancestral origins, match you with genetic relatives, and predict your traits. This uninterpreted data is also called "raw data."

DNA Data can be downloaded in a .txt (text file) format. DNA Data from other websites cannot be uploaded to Ancestry®.

[Go to DNA Settings](#)

1. From your DNA Settings, select the test you'd like to download.
2. Scroll down to the *Download or Delete* section and select **Download DNA data**.
3. Select the **box** to confirm that you understand, and click **Continue**.
4. Verify your account by choosing 1 of 2 methods:
 - Click **Enter current password**. Enter your **password** into the field and click **Continue**.
 - Click **Send code via email** > **Send code**. Retrieve the code from your email inbox and enter it into the *Enter Code* field. Click **Continue**.
5. Check your email inbox for an email to download your DNA data. The email can take up to 24 hours to arrive.
6. In the email, select **Download DNA Data**. The downloaded file will not be in or attached to the email.
If you made multiple download requests, only the most recent email from Ancestry (associated with your most recent download request) will have a valid link. A download link can only be used once. It will expire after a week. If your link has expired, start over at step 1.
7. Click **Download DNA Data**.
8. The file will be downloaded to your computer. The file name will be **dna-data-(date).zip**. If you can't find it, check your Downloads folder or search for the file name (if you have a PC) by clicking the Windows key  on your keyboard and entering the file name in the search field that appears. If you have an Apple computer, select the Spotlight icon  in the top-right corner of your screen and enter the file name in the search field. To open the file, double-click it.

Downloading match list

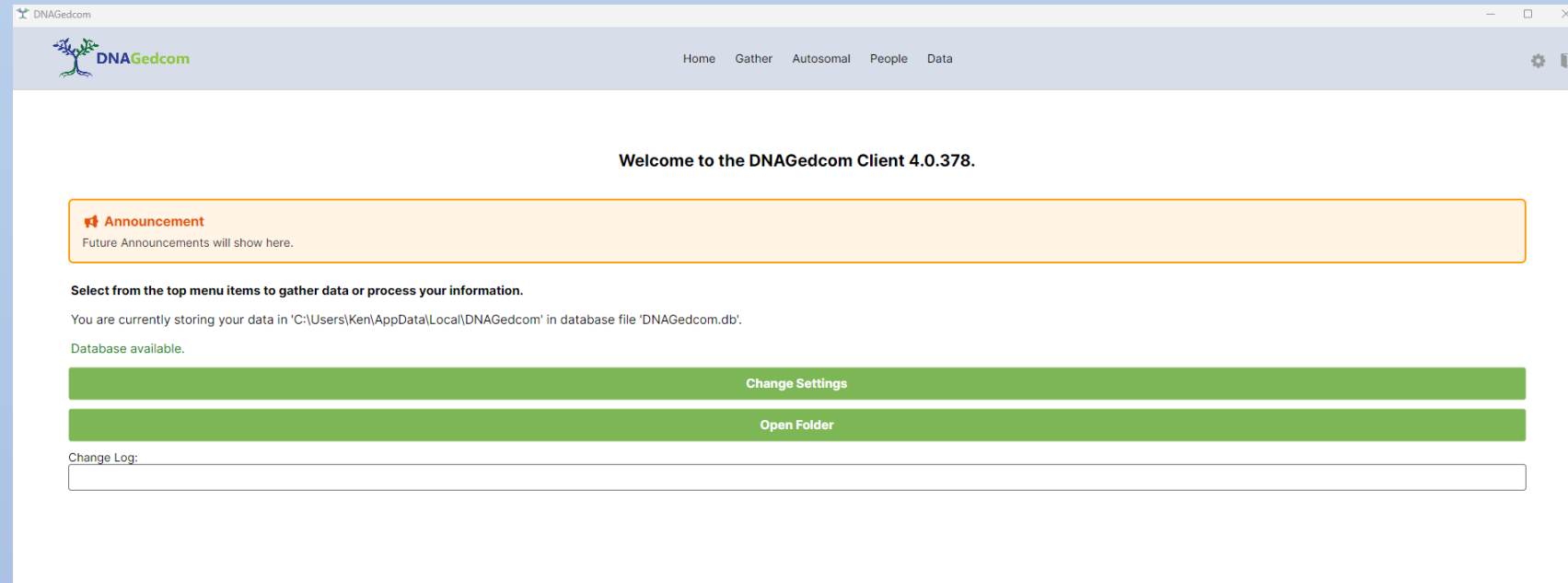
- This is very different from downloading your DNA
 - This is for those wanting to have a list of all (or some) of their DNA matches
- Various methods exist with varying difficulty and usefulness
 - These often change or become useless with each change of Ancestry's data structure
- My go-to:
 - DNAGedcom
 - Cost: \$5/mo or \$50/yr
 - Clean way to download all (or selected amount) of your matches into a spreadsheet



DNAGedcom

What is DNAGedcom?

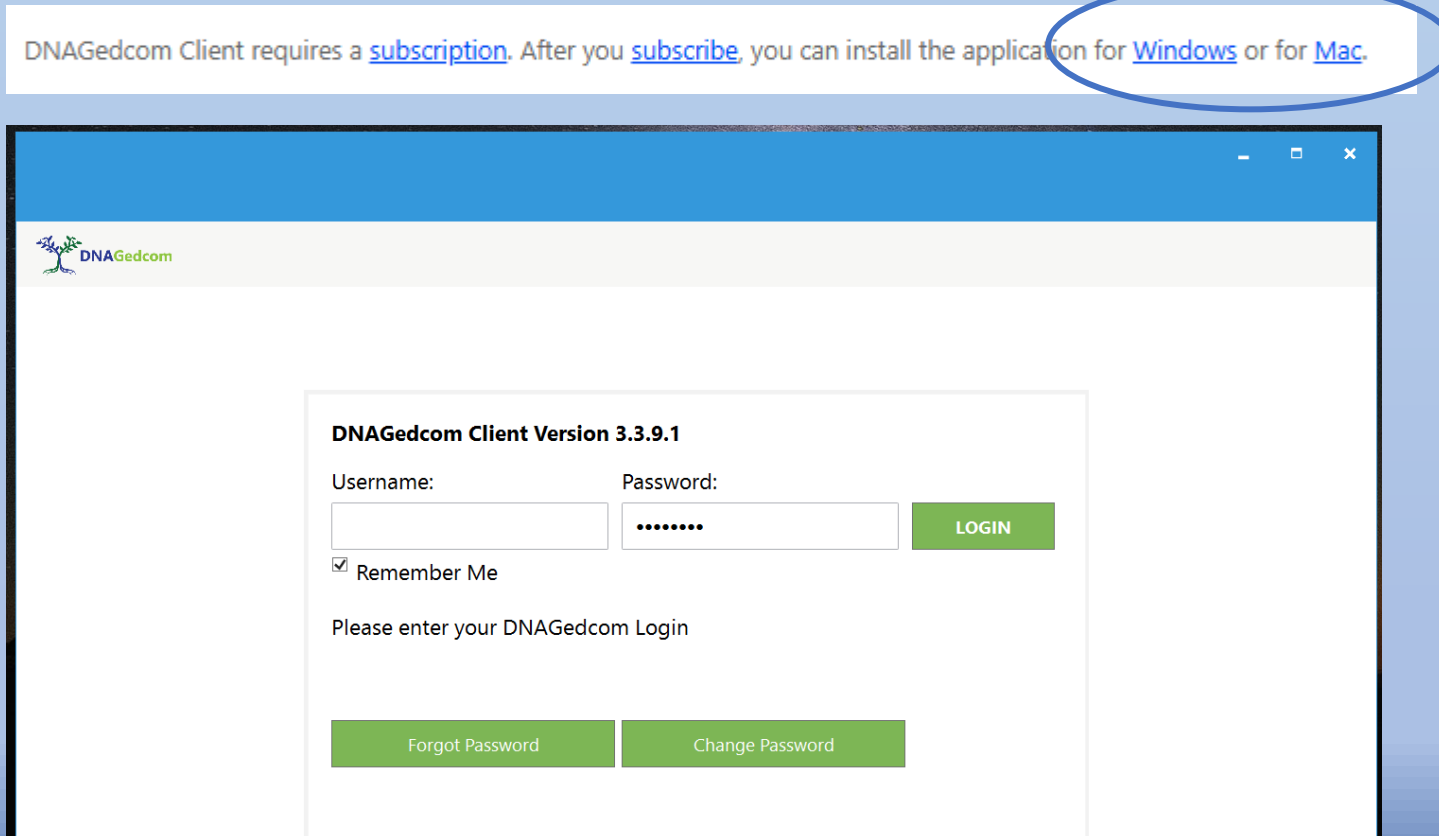
- Website:
<http://dnagedcom.com>
- Requires downloading a client to your Windows PC or Mac (note: I have only used the Windows version)
- Allows downloading full match data from Ancestry as well as other online services (subject to change)



Special note: this program requires frequent updating due to changes in Ancestry rules and file formats. Luckily it is very carefully administered by Rob Warthen and his team.

Step 1: Download and Open the client and log in

- <https://dnagedcom.com/>



DNAGedcom Client requires a [subscription](#). After you [subscribe](#), you can install the application for [Windows](#) or for [Mac](#).

DNAGedcom Client Version 3.3.9.1

Username: Password:

☒ Remember Me

Please enter your DNAGedcom Login

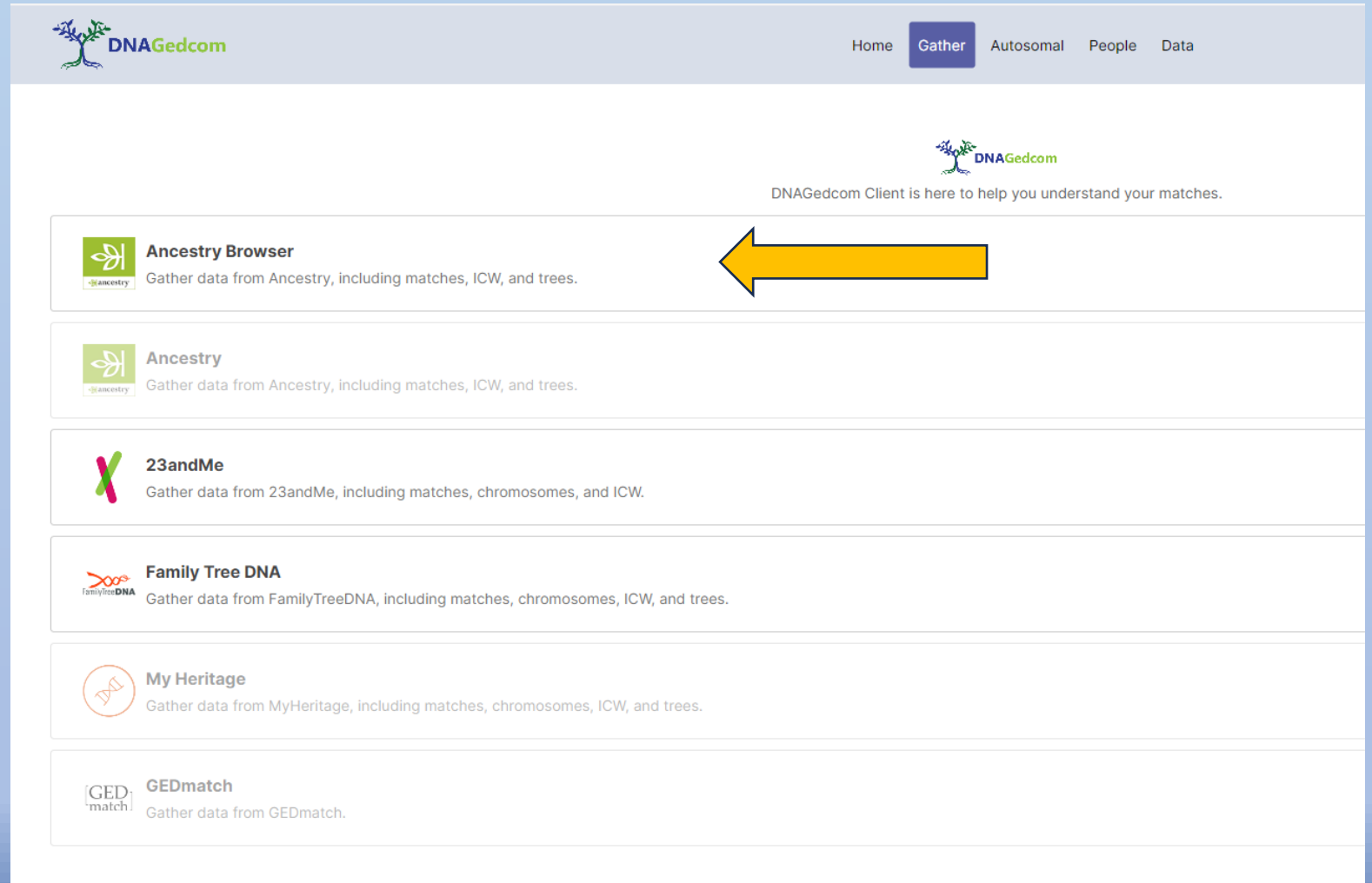
[Forgot Password](#) [Change Password](#)

[LOGIN](#)

Note: You need a login from both DNAGedcom as well as any testing company

Step 2: Gather Matches (inside of DNAGedcom)

- Click “Gather”
- We will use Ancestry for this example

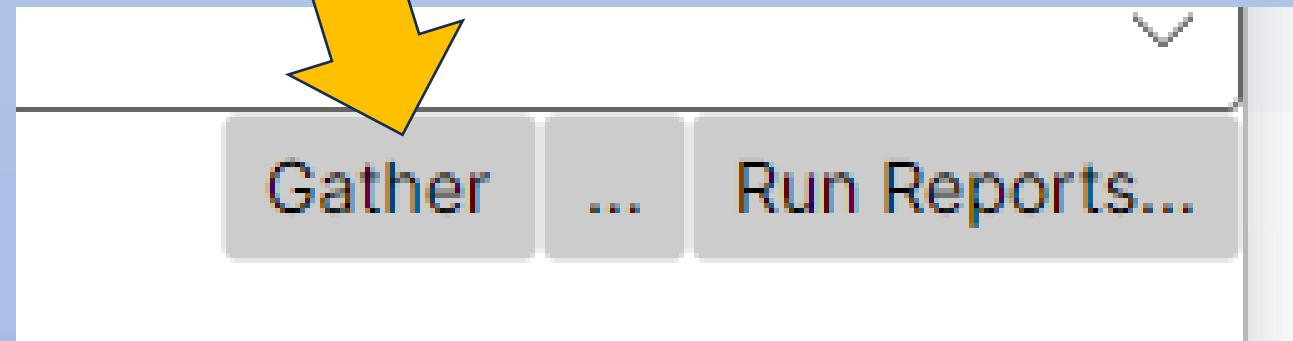
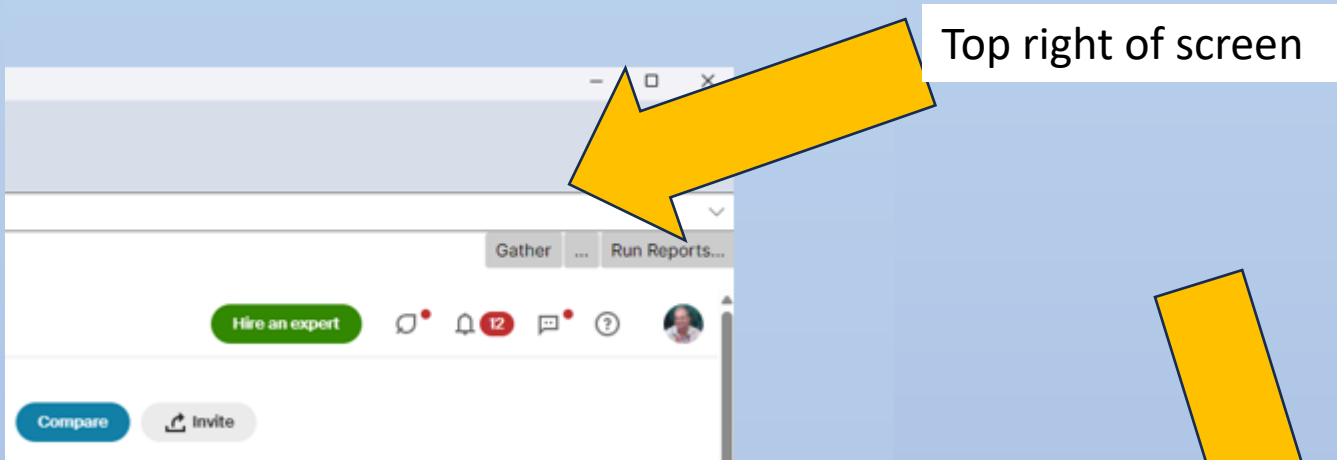


Step 3: Log into Ancestry (inside of DNAGedcom)

The screenshot shows the Ancestry.com interface. At the top, there's a navigation bar with 'Home', 'Gather', 'Autosomal', 'People', and 'Data'. Below this, a red box highlights the URL bar showing 'https://www.ancestry.com/discoveryui-matches/list/DC7BBD05-7C02-4CC4-B6FE-3CF1672B7E86'. The main content area is for 'Ken Waters' and is divided into 'Summary', 'Origins', 'Matches', and 'Traits'. The 'Matches' tab is selected, showing 'All matches', 'By parent', 'By ancestor', 'By cluster', and 'By location'. A yellow arrow points to the 'Matches' tab. Below the tabs, there's a section for 'Parent/Child' and 'Public linked tree'. At the bottom, a yellow box contains a note.

Note: your screen will look just like it normally does with an Ancestry login other than this important information which tracks the progress of your gather/download

Step 4: Start the Gather



Step 4: All done with Gather

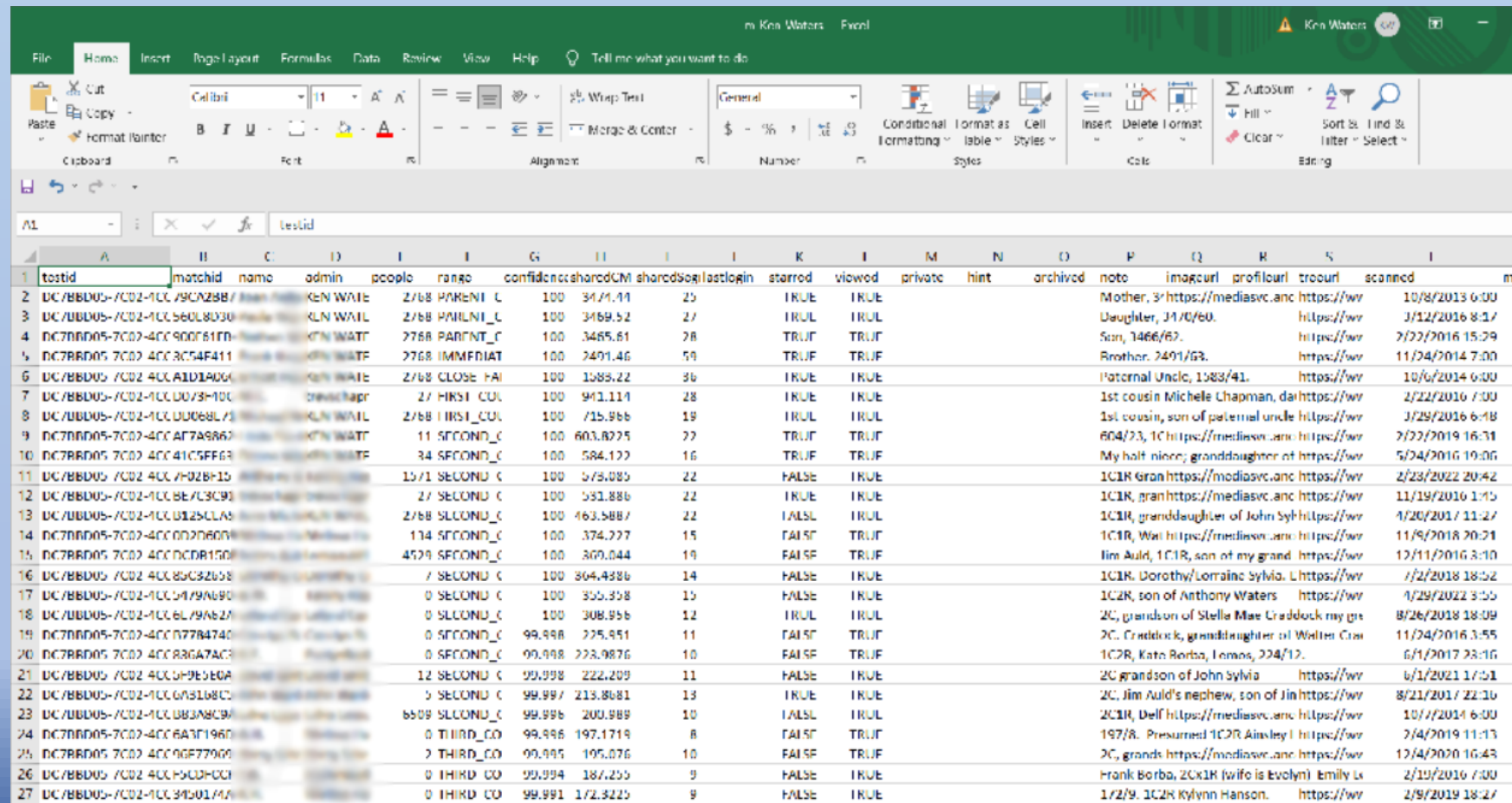
- This example for all matches on my kit down to 20 cMs took about 10 minutes to run
- If you selected ICW (in common with) then it will take a bit more time to run the ICW report

Running Report ICW - 0% Complete 1 of 3

Creating Ancestry Reports Completed

3 files are produced – This is the “m” file which has all data on matches

- This file can now be manipulated and incorporated into other spreadsheets such as documenting shared networks



| testid | matchid | name | admin | people | range | confidence | sharedCM | sharedSog | lastlogin | starred | viewed | private | hint | archived | note | imgurl | profilurl | trourl | scanned | m |
|--------|----------------------------|----------|-------|-----------|--------|------------|----------|-----------|-----------|--|-----------|-----------------|------|----------|------|--------|-----------|--------|---------|---|
| 1 | DC/BB005-/C02-1CC/9CA28B/ | Ken WATK | 2/68 | PARENT_C | 100 | 3471.41 | 25 | TRUE | TRUE | Mother, 31/10/60. | https://w | 10/8/2013 6:00 | | | | | | | | |
| 2 | DC/BB005-/C02-1CC/560L8030 | Ken WATK | 2/68 | PARENT_C | 100 | 3469.52 | 27 | TRUE | TRUE | Daughter, 31/10/60. | https://w | 3/12/2016 8:21 | | | | | | | | |
| 3 | DC/BB005-/C02-4CC/900F61F0 | Ken WATK | 2/68 | PARENT_C | 100 | 3465.61 | 28 | TRUE | TRUE | Son, 1466/62. | https://w | 2/22/2016 15:29 | | | | | | | | |
| 4 | DC/BB005-/C02-4CC/3C54F411 | Ken WATK | 2/68 | IMMEDIAT | 100 | 2491.46 | 59 | TRUE | TRUE | Brother, 2491/62. | https://w | 11/24/2014 7:00 | | | | | | | | |
| 5 | DC/BB005-/C02-4CC/A1D1A006 | Ken WATK | 2/68 | CLOSE_FAI | 100 | 1585.22 | 36 | TRUE | TRUE | Paternal Uncle, 1583/41. | https://w | 10/6/2014 6:00 | | | | | | | | |
| 6 | DC/BB005-/C02-1CC/D073F10C | Ken WATK | 2/68 | FIRST_CUL | 100 | 941.114 | 28 | TRUE | TRUE | 1st cousin Michele Chapman, da | https://w | 2/22/2016 1:00 | | | | | | | | |
| 7 | DC/BB005-/C02-1CC/D068L73 | Ken WATK | 2/68 | FIRST_CUL | 100 | 715.966 | 19 | TRUE | TRUE | 1st cousin, son of paternal uncle | https://w | 3/29/2016 6:48 | | | | | | | | |
| 8 | DC/BB005-/C02-4CC/AF7A8862 | Ken WATK | 11 | SECOND_C | 100 | 603.8225 | 22 | TRUE | TRUE | 604/23, 1C https://mediasvc.anc | https://w | 2/22/2019 16:31 | | | | | | | | |
| 9 | DC/BB005-/C02-4CC/41C5FF63 | Ken WATK | 34 | SECOND_C | 100 | 584.122 | 16 | TRUE | TRUE | My half niece, granddaughter of | https://w | 5/24/2016 19:06 | | | | | | | | |
| 10 | DC/BB005-/C02-4CC/7028F15 | Ken WATK | 15/1 | SECOND_C | 100 | 573.085 | 22 | FALSE | TRUE | 1C1R Gran https://mediasvc.anc | https://w | 2/23/2022 20:42 | | | | | | | | |
| 11 | DC/BB005-/C02-1CC/8E7C3C93 | Ken WATK | 2/68 | SECOND_C | 100 | 531.886 | 22 | TRUE | TRUE | 1C1R, gran https://mediasvc.anc | https://w | 11/19/2016 1:45 | | | | | | | | |
| 12 | DC/BB005-/C02-1CC/0325CLA3 | Ken WATK | 2/68 | SECOND_C | 100 | 463.5887 | 22 | FALSE | TRUE | 1C1R, granddaughter of John Syl | https://w | 1/20/2017 11:27 | | | | | | | | |
| 13 | DC/BB005-/C02-4CC/002D600 | Ken WATK | 114 | SECOND_C | 100 | 374.227 | 15 | FALSE | TRUE | 1C1R, Wat https://mediasvc.anc | https://w | 11/9/2018 20:21 | | | | | | | | |
| 14 | DC/BB005-/C02-4CC/D0CB150 | Ken WATK | 4579 | SECOND_C | 100 | 309.044 | 19 | FALSE | TRUE | Jim Auld, 1C1R, son of my grand | https://w | 12/11/2016 3:10 | | | | | | | | |
| 15 | DC/BB005-/C02-4CC/85C32058 | Ken WATK | 7 | SECOND_C | 100 | 304.4386 | 14 | FALSE | TRUE | 1C1R, Dorothy/Lorraine Sylvia. L | https://w | 1/2/2018 18:22 | | | | | | | | |
| 16 | DC/BB005-/C02-1CC/5A79A690 | Ken WATK | 0 | SECOND_C | 100 | 355.358 | 15 | FALSE | TRUE | 1C2R, son of Anthony Waters | https://w | 1/29/2022 3:55 | | | | | | | | |
| 17 | DC/BB005-/C02-1CC/6L79A627 | Ken WATK | 0 | SECOND_C | 100 | 308.956 | 12 | TRUE | TRUE | 2C, grandson of Stella Mae Craddock my gra | https://w | 8/26/2018 18:09 | | | | | | | | |
| 18 | DC/BB005-/C02-4CC/07784740 | Ken WATK | 0 | SECOND_C | 99.998 | 225.451 | 11 | FALSE | TRUE | 2C, Craddock, granddaughter of Walter Cra | https://w | 11/24/2016 3:55 | | | | | | | | |
| 19 | DC/BB005-/C02-4CC/836A7AC3 | Ken WATK | 0 | SECOND_C | 99.998 | 223.9876 | 10 | FALSE | TRUE | 1C2R, Kate Borba, Lomas, 224/12. | https://w | 6/1/2017 23:16 | | | | | | | | |
| 20 | DC/BB005-/C02-4CC/5A9E3E0A | Ken WATK | 12 | SECOND_C | 99.998 | 222.209 | 11 | FALSE | TRUE | 2C grandson of John Sylvia | https://w | 6/1/2021 17:51 | | | | | | | | |
| 21 | DC/BB005-/C02-1CC/6F3108C0 | Ken WATK | 5 | SECOND_C | 99.997 | 213.8681 | 13 | TRUE | TRUE | 2C, Jim Auld's nephew, son of Jim | https://w | 8/21/2017 22:26 | | | | | | | | |
| 22 | DC/BB005-/C02-1CC/0B3A8C9A | Ken WATK | 6509 | SECOND_C | 99.996 | 200.889 | 10 | FALSE | TRUE | 2C1R, Delf https://mediasvc.anc | https://w | 10/7/2014 6:00 | | | | | | | | |
| 23 | DC/BB005-/C02-4CC/6A3F1960 | Ken WATK | 0 | THIRD_CO | 99.996 | 197.1719 | 8 | FALSE | TRUE | 197/8. Presumed 1C2R Ainsley I | https://w | 2/4/2019 11:13 | | | | | | | | |
| 24 | DC/BB005-/C02-4CC/06F77909 | Ken WATK | 2 | THIRD_CO | 99.995 | 195.076 | 10 | FALSE | TRUE | 2C, grands https://mediasvc.anc | https://w | 12/4/2020 16:43 | | | | | | | | |
| 25 | DC/BB005-/C02-4CC/F3C0FCC0 | Ken WATK | 0 | THIRD_CO | 99.994 | 187.255 | 9 | FALSE | TRUE | Frank Borba, 2Cx1R (wife is Evelyn) | https://w | 2/19/2016 1:00 | | | | | | | | |
| 26 | DC/BB005-/C02-1CC/34501747 | Ken WATK | 0 | THIRD_CO | 99.991 | 172.3225 | 9 | FALSE | TRUE | 1/2/9. 1C2R Kylvann Hanson. | https://w | 2/9/2019 18:27 | | | | | | | | |

Timber on Ancestry

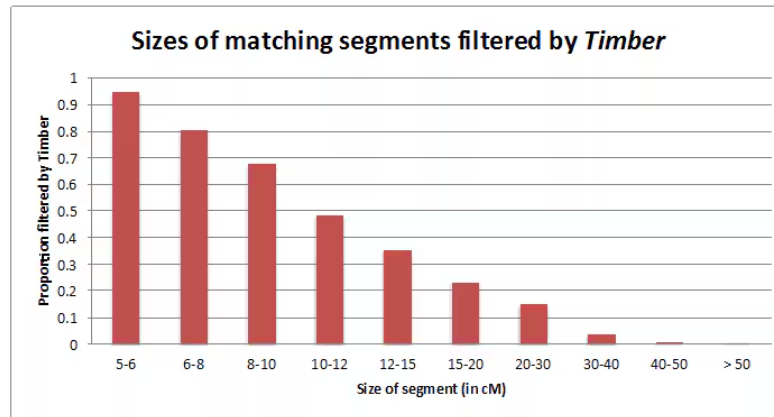
Timber (Ancestry)

- What is Timber?
 - An algorithm to try to remove segments that are common to many other matches

Timber mostly filters out shorter segments of shared DNA

The DNA you share with your matches is distributed across segments of DNA. If you think of you and your match's DNA like two books, shared DNA segments are like identical sentences or paragraphs in both books. The length of the longest segment you and a DNA match have in common can help [determine your relationship](#). Sharing fewer, longer segments usually indicates a closer relationship. Shorter segments of shared DNA can indicate a distant relationship or identical DNA due to a shared region.

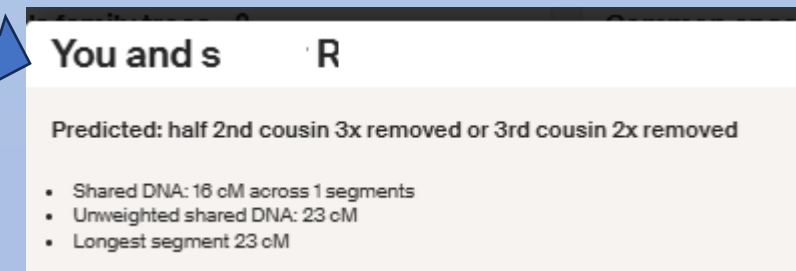
When we looked at the shared DNA segments removed by *Timber* for a study of 300,000 Ancestry customers, we saw that most of the removed segments are shorter (<10 cM). See the chart below.



However, we also found that in some cases, longer identical segments (>15 cM) were also removed by *Timber*. What this shows is that there is much more than just the sizes of the identical DNA segments to consider when trying to identify shared DNA from a recent common ancestor.

Timber (Ancestry)

- To find the centiMorgans shared before the Timber algorithm is applied, click on the cM label



After Timber

Shared DNA: 16 cM across 1 segments

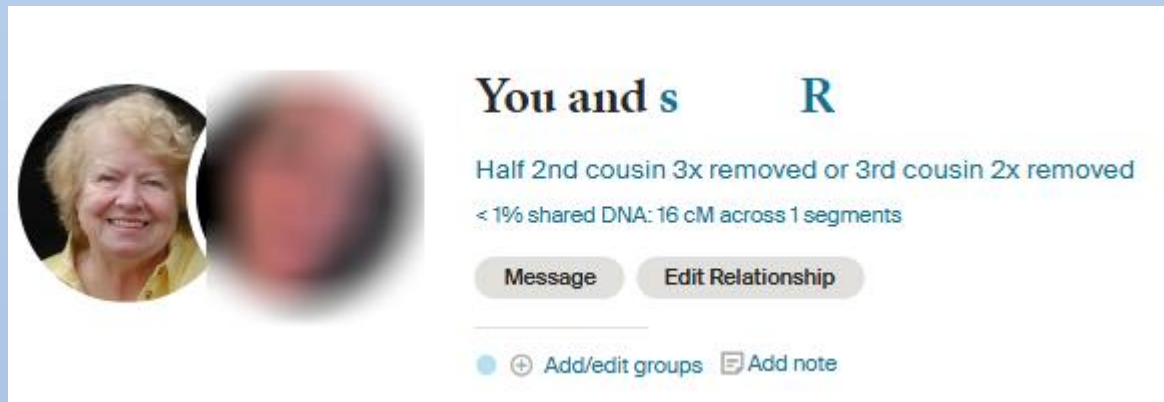
Before Timber

Unweighted shared DNA: 23 cM

Longest segment 23 cM

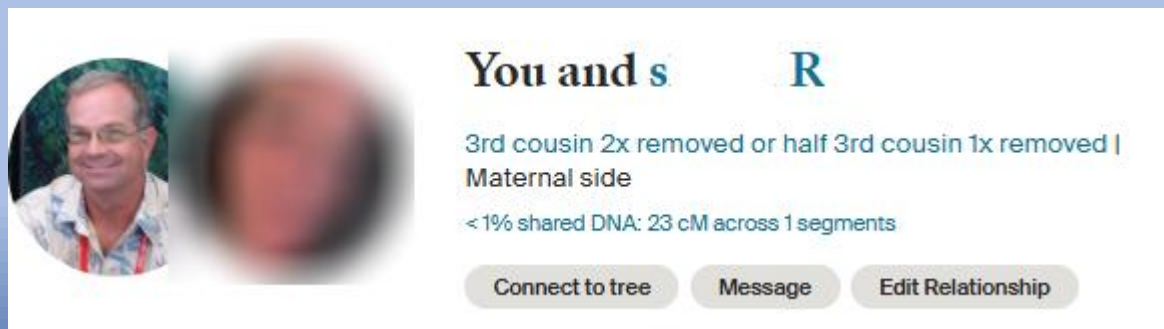
Real Timber Example

- sR match to my Mom's kit, 16 cMs



This screenshot shows a match with a woman (Mom's kit). The relationship is predicted as "Half 2nd cousin 3x removed or 3rd cousin 2x removed" with "< 1% shared DNA: 16 cM across 1 segments". Buttons for "Message" and "Edit Relationship" are visible.

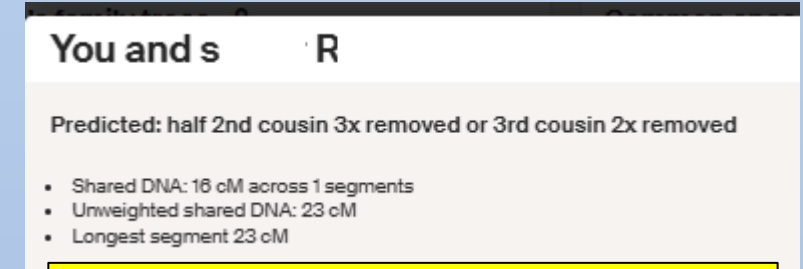
- sR match to me, 23 cMs



This screenshot shows a match with a man (me). The relationship is predicted as "3rd cousin 2x removed or half 3rd cousin 1x removed | Maternal side" with "< 1% shared DNA: 23 cM across 1 segments". Buttons for "Connect to tree", "Message", and "Edit Relationship" are visible.

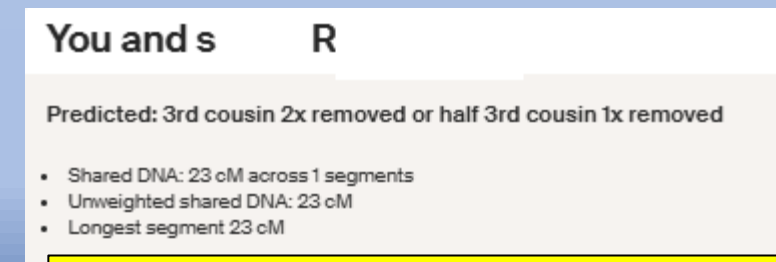
Why is this important?

Timber erroneously makes sR appear more distant to Mom than to me, which is impossible (assuming I'm not related to the match on paternal side also)



This screenshot shows the detailed match information for Mom's kit. It lists: "Shared DNA: 16 cM across 1 segments", "Unweighted shared DNA: 23 cM", and "Longest segment 23 cM".

Ancestry split a 23 cM segment in half, reducing it to 16 cMs

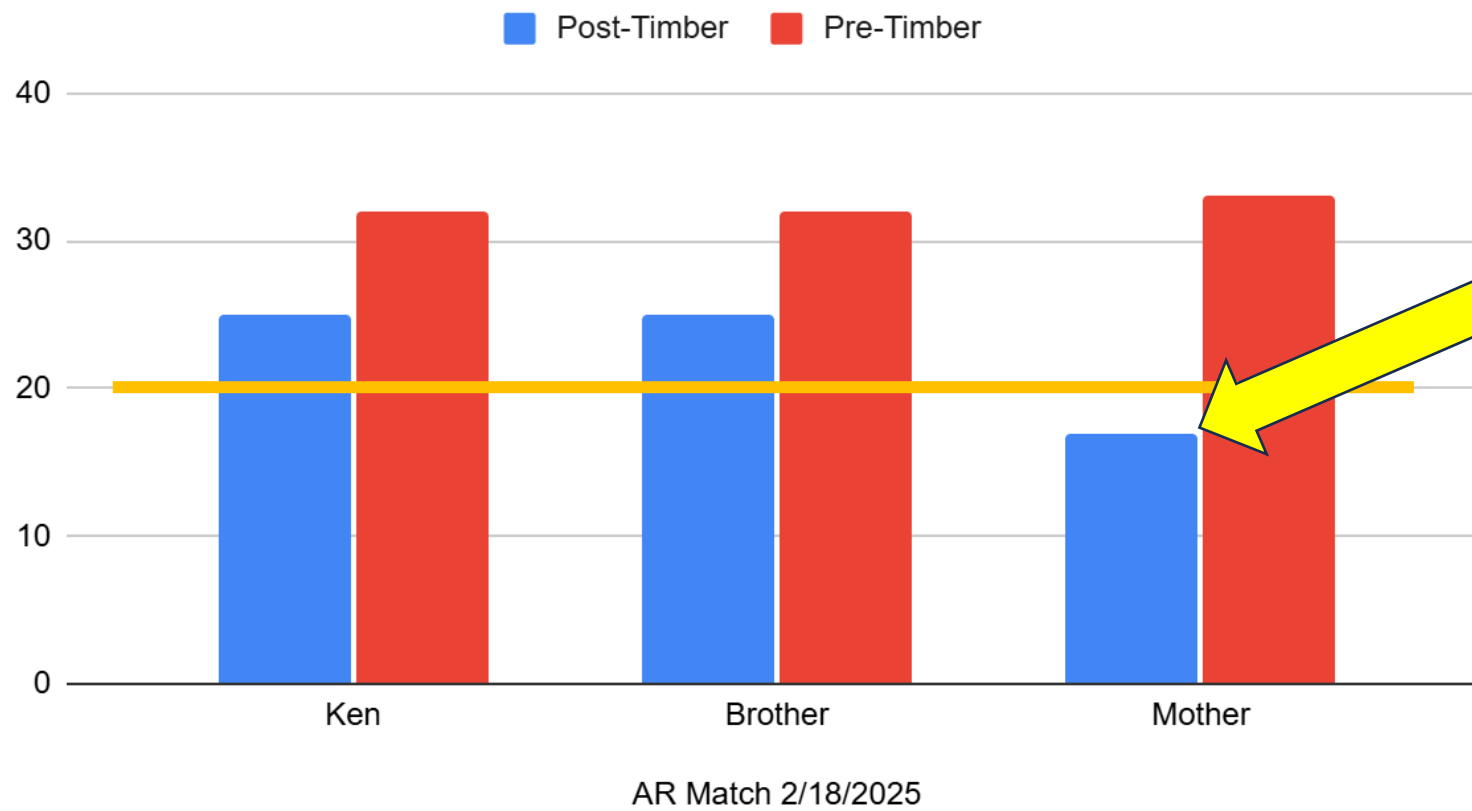


This screenshot shows the detailed match information for 'me' kit. It lists: "Shared DNA: 23 cM across 1 segments", "Unweighted shared DNA: 23 cM", and "Longest segment 23 cM".

Ancestry did not split the same 23 cM segment in her son!

Another Timber Example (new match 2/18/2025)

Post-Timber and Pre-Timber



Timber cuts the parent's segment below 20 cMs but not those from the two children. This results in erroneously removing the match from the mother's close matches list!

ProTools on Ancestry

ProTools - Ancestry

- Contains a variety of useful tools

Ancestry® Pro Tools Membership

Take your research to the next level with Ancestry® Pro Tools. This add-on membership gives you access to advanced DNA and family history tools designed to improve your tree's accuracy and showcase the people in your tree like never before.

What's included

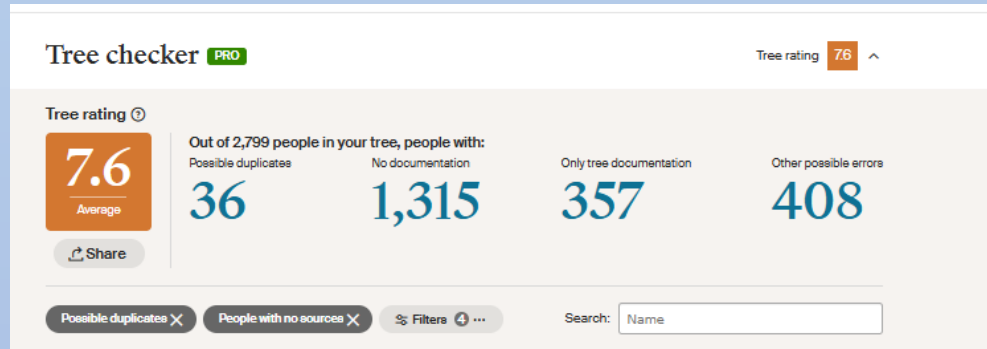
Ancestry Pro Tools requires an active [Ancestry family history membership](#). Family history memberships give you access to paid records, other member trees, and some DNA features.

Pro Tools provides access to advanced DNA and family history tools, including:

- [Tree checker](#): Find potential duplicates and possible errors in your tree.
- [Smart filters](#): Search, group, and sort people in your tree using key details beyond names.
- [Charts & reports](#): Create and share detailed family histories.
- [Tree mapper](#): See where people in your tree lived in relation to one another.
- [Tree insights](#): Discover familial trends and see patterns in your tree.
- [Enhanced shared matches](#): See how much DNA your matches share and their predicted relationships to each other. (Separate DNA kit purchase required to access this feature.)

ProTools -- TreeChecker

- While not a DNA tool it can help a lot to clean up your tree



- It takes a lot of time to go through all these but can help improve your linked tree

| | | |
|----------------------------------|---|--|
| Quackenbosch, Pieter | 1702 Albany, New York, USA | 1772 Niskayuna, Albany, New York, United States |
| Quackenbush, Pieter Johannese | from 1678 to 1680 Albany, Albany, New York | 20 July 1748 Albany, Albany, New York |

Likely not a duplicate

| | | |
|-------------|---|---|
| Goode, Mary | 1720 Whitby Plantation, Richmond, Virginia, USA | 1758 Albermarle, , Virginia, USA |
| Goode, Mary | 1720 Richmond County, Virginia, British Colonial America | 1758 Albermarle County, Virginia, British Colonial America |

A likely duplicate

ProTools – Charts & Reports

- Descendancy chart
 - One of my Mayflower lines
 - Up to 7 generations so I had to break into two reports

Generated on February 19th, 2025

[DNA] Waters Tree Email:satwatcher.gen@gmail.com

Peregrine White



Descendancy

1. [Peregrine White](#) b: Nov 1620. d: 20 Jul 1704 in Marshfield, Plymouth, Massachusetts, USA; age: 83.
 - + [Sarah Bassett](#) b: 1630 in Plymouth, Plymouth, Massachusetts, USA. d: 22 Jan 1711 in Marshfield, Plymouth, Massachusetts, USA; age: 81.
2. [Silvanus White](#) d: Deceased.
 - + [Deborah Church](#) d: Deceased.
3. [William White](#) b: 1683. d: Bef. 3 Oct 1780 in Dartmouth, Bristol, Massachusetts, USA; age: 97.
 - + [Elizabeth Cadman](#) b: Abt. 1684 in Dartmouth, Bristol, Massachusetts, USA. d: Aft. 6 Jan 1768; age: 84.
4. [Roger White](#) b: 1708. d: 17 Jun 1802; age: 94.
 - + [Rebecca Grinnell](#) b: 16 Dec 1710 in Little Compton, Newport, Rhode Island, United States. d: 17 Jun 1802 in Little Compton, Newport, Rhode Island, United States; age: 91.
5. [Hannah White](#) b: 17 Sep 1734 in Little Compton, Newport, Rhode Island, USA. d: 1766 in New York, USA; age: 31.
 - + [Abraham Utter](#) b: 18 Nov 1732. d: 5 Jan 1819; age: 86.
6. [Sarah Utter](#) b: 12 Jul 1761 in Stonington, New London, Connecticut, United States. d: 29 Jun 1801; age: 39.
 - + [Capt. David Larkin](#) b: November 1751 in Hope Valley, Hopkinton, Kings, British Colonial America, Rhode Island, USA. d: 11 November 1839 in Hope Valley, Hopkinton, Washington, Rhode Island, USA; age: 88.
7. [Sarah "Sally" Larkin](#) b: 29 Dec 1797 in Hopkinton, Washington, Rhode Island, United States. d: 18 Apr 1828 in Clarence, Erie, New York, United States; age: 30.
 - + [Aaron Davis](#) b: 22 August 1794 in Rhode Island, United States of America. d: 25 January 1859 in Clinton County, Michigan, United States of America; age: 64.

Generated on February 19th, 2025

[DNA] Waters Tree Email:satwatcher.gen@gmail.com

Aaron Davis



Descendancy

1. [Aaron Davis](#) b: 22 August 1794 in Rhode Island, United States of America. d: 25 January 1859 in Clinton County, Michigan, United States of America; age: 64.
 - + [Sarah "Sally" Larkin](#) b: 29 Dec 1797 in Hopkinton, Washington, Rhode Island, United States. d: 18 Apr 1828 in Clarence, Erie, New York, United States; age: 30.
2. [Mary Davis](#) b: 5 April 1812 in Rhode Island. d: 8 April 1881 in Wexford, Wexford, Michigan; age: 69.
 - + [Ira Gilman Butler](#) b: 1797 in New York, USA. m: Abt 1834 in New York, USA. d: 15 Sep 1878 in Marcellus, Cass Co., MI.; age: 81.
3. [Elizabeth Ann Butler](#) b: Jul 1835 in Rochester NY. d: 30 Sep 1914 in Springville, Wexford, Michigan, USA; age: 79.
 - + [Jefferson N Campbell](#) b: Jan 1833 in Michigan. m: 6 Nov 1890 in Charlotte, Eaton, Michigan, USA. d: Deceased.
 - + [Nathan G Spencer](#) b: 12 Dec 1829 in Hartland, Windsor, Vermont, USA. d: 20 Apr 1877 in Battle Creek, Calhoun, Michigan, USA; age: 47.
4. [Adeline Spencer](#) b: abt 1854 in Michigan. d: Deceased.
4. [Culver R. Spencer](#) b: Nov 1856 in Walton, Mich. d: 13 Jan 1928 in Los Angeles, Los Angeles, California, USA; age: 71.
 - + [Arzelia Cummings](#) b: 22 Apr 1859 in Onondaga County, New York, USA. m: 31 Dec 1877 in Kalamazoo, Kalamazoo, Michigan, USA. d: 4 Jul 1932 in Los Angeles, Los Angeles, California, USA; age: 73.
5. [Nellie Julia Spencer](#) b: 24 Oct 1878 in Jackson, Jackson, Michigan, USA. d: 30 Sep 1932 in Los Angeles, Los Angeles, California, USA; age: 53.
 - + [Eugene Huntley](#) b: May 1846 in Burlington, Chittenden, Vermont, USA. m: 29 Sep 1900 in Cedar Rapids, Linn, Iowa. d: 25 Oct 1900 in Cedar Rapids, Linn County, Iowa, United States of America; age: 54.
 - + [Frank Gustav Pohlmann](#) b: 26 Jan 1880 in Waszminker, Germany. m: 23 Mar 1926 in Colorado Springs, Colorado, USA. d: 4 Jan 1976 in Stanton, Orange, California, USA; age: 95.
 - + Unknown
6. [Mardell Lillian Huntley](#) b: 2 Feb 1908 in Clinton, Clinton, Iowa, USA. d: 28 Aug 2005 in Las Vegas, Clark, Nevada; age: 97.
 - + [Charles Noble Craddock](#) b: 16 Apr 1905 in Mount Vernon, Jefferson, Illinois, USA. m: 10 Dec 1931 in Los Angeles, California, USA. d: 15 Jan 1983 in Las Vegas, Clark, Nevada, USA; age: 77.
7. [Joan Anita Craddock](#) b: 12 May 1929 in Los Angeles, Los Angeles, California, USA. d: 11 Oct 2015 in Mesa, Maricopa, Arizona, USA; age: 86.
 - + [Richard J Waters](#) b: 22 Dec 1919 in San Francisco, California. m: 7 Sep 1951 in Norfolk, Independent Cities, Virginia, USA. d: 8 Nov 1979 in Petaluma, Sonoma, California, USA; age: 59.

ProTools – Family Group Sheet

Generated on February 19th, 2025

[DNA] Waters Tree Email:satwatcher.gen@gmail.com

Richard J Waters

Family Group Sheet



Name: [Richard J Waters](#)
Birth: 22 Dec 1919 in San Francisco, California.
Spouses: [Joan Anita Craddock](#)
[Thelma M Greenwood](#)
[Helen L Bockoven](#)
[Jeanne Claire Mills](#)
Death: 8 Nov 1979 in Petaluma, Sonoma, California, USA; age: 59.
Burial: San Rafael, Marin County, California, USA.
Father: [Joseph John Waters](#)
Mother: [Caroline Margaret Sylvia](#)



Spouse: [Joan Anita Craddock](#)
Birth: 12 May 1929 in Los Angeles, Los Angeles, California, USA.
Marriage: 7 Sep 1951 in Norfolk, Independent Cities, Virginia, USA.
Death: 11 Oct 2015 in Mesa, Maricopa, Arizona, USA; age: 86.
Father: [Charles Noble Craddock](#)
Mother: [Mardell Lillian Huntley](#)



Spouse: [Thelma M Greenwood](#)
Birth: 14 Apr 1914 in San Francisco, California.
Marriage: 4 May 1969 in Monterey, California, USA.
Death: 12 March 2005 in Petaluma, Sonoma County, California, United States of America; age: 90.
Burial: San Rafael, Marin County, California, United States of America.
Father: [Lester Errol Greenwood](#)
Mother: [Emily G Battail](#)



Spouse: [Helen L Bockoven](#)
Birth: 23 Mar 1914 in Oklahoma.
Marriage: Divorce: Apr 1968 in Alameda City, California, USA.
Death: Jan 1979; age: 64.
Father: [George Bockoven](#)
Mother: [Maude L Bockoven](#)



Spouse: [Jeanne Claire Mills](#)
Birth: 1 Feb 1922 in Portland, Multnomah, Oregon, USA.
Death: 12 Dec 1995 in Laguna Hills, Orange, California, USA; age: 73.
Father: [David Mills](#)
Mother: [Doris Lucile Desilets](#)

Children of Richard J Waters and Joan Anita Craddock: 2

ProTools – TreeMapper



ProTools – Enhanced Shared Matches

- In my opinion, this feature alone makes it worth it to have this subscription
- Provides how much each of your matches shares with other matches in the genetic network

The screenshot displays the 'You and Michelle' interface, showing a comparison of genetic matches between the user and Michelle. At the top, it identifies the relationship as '2nd cousin 1x removed | Maternal side' with '2% shared DNA: 152 cM across 8 segments'. Below this are buttons for 'Connect to tree', 'Message', and 'Edit Relationship'. A section for 'Add/edit group' shows a group named '2C1R, great-granddaughter of Stella C...'. The main area is titled 'Shared Matches' and includes a 'Filter shared matches' bar with options for '+ Group', 'Search', and 'Sort'. The matches are listed in a table with columns for 'Shared match:', 'Your:', and 'Michelle:'. Each row shows a match with a profile picture, name, relationship, shared DNA amount, and side information. The matches listed are: Joan Anita Craddock (Mother, 3474 cM, Maternal side), Michelle (1st cousin 1x removed or half grandaunt, 360 cM), Michelle (3rd cousin or half 2nd cousin 1x removed, 106 cM), Michelle (Brother, 2,491 cM, Both sides), Michelle (2nd cousin or half 1st cousin 1x removed, 209 cM), Michelle (2nd cousin 1x removed or 1st cousin 2x removed, 184 cM), and Michelle (Uncle, 1,624 cM). The bottom of the page shows a match for Leland (2nd cousin, 309 cM, Maternal side) and a note about a 2C, grandson of Stella Mae Craddock.

| Shared match: | Your: | Michelle: |
|---------------------|--|--|
| Joan Anita Craddock | Your: Mother 3,474 cM Maternal side | Michelle 1st cousin 1x removed or half grandaunt 360 cM |
| Michelle | Your: Daughter 3,470 cM Both sides | Michelle 3rd cousin or half 2nd cousin 1x removed 106 cM |
| Michelle | Your: Brother 2,491 cM Both sides | Michelle 2nd cousin or half 1st cousin 1x removed 209 cM |
| Michelle | Your: 1st cousin 1x removed 369 cM Maternal side | Michelle 2nd cousin 1x removed or 1st cousin 2x removed 184 cM |
| Michelle | Your: 2nd cousin 309 cM Maternal side | Michelle Uncle 1,624 cM |

ProTools – Enhanced Shared Matches

Before I only knew that Michelle and Leland were shared matches to me. I didn't know they were related to each other. With Enhanced Shared Matches I was able to see how they were related to each other and so I could put both in my family tree properly.

You and Michelle






2nd cousin 1x removed | Maternal side
2% shared DNA: 152 cM across 8 segments

Connect to tree Message Edit Relationship

5 6 + Add/edit group
2C1R, great-granddaughter of Stella C...

Trees Origins **Shared Matches** PRO

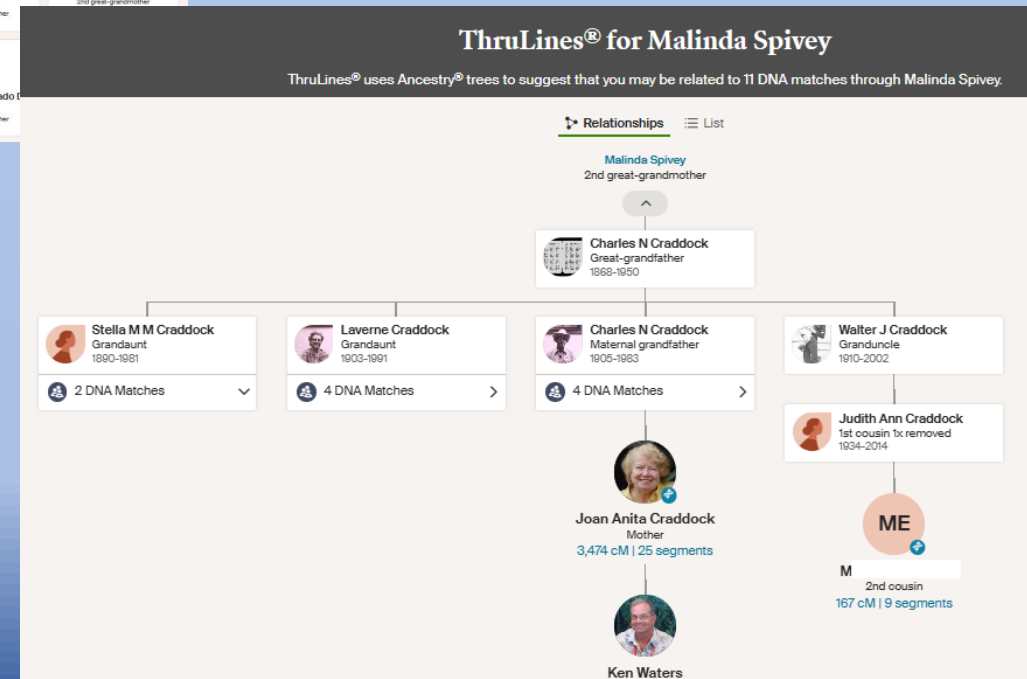
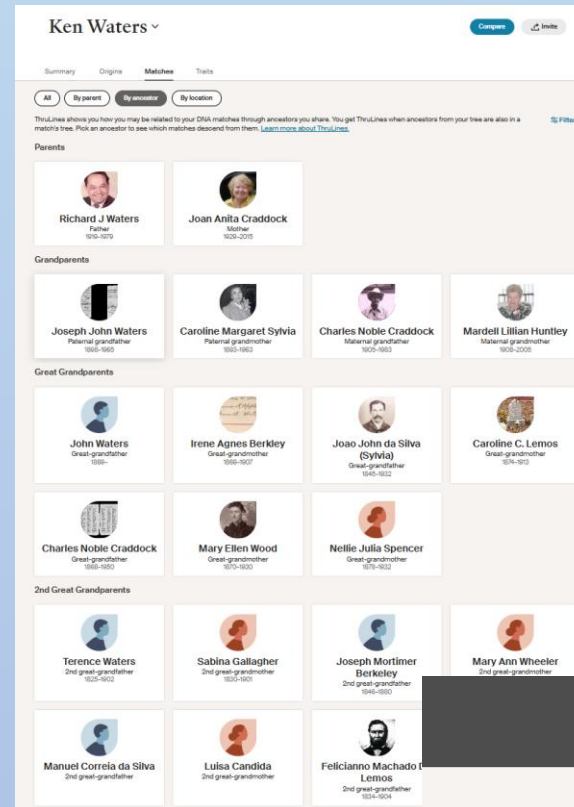
Filter shared matches + Group Search Sort

| Shared match: | Your: | Michelle Kaulukukui-Palisbo's: |
|--|--|--|
|  Joan Anita Craddock | Your: Mother 3,474 cM Maternal side | Michelle 1st cousin 1x removed or half grandaunt 360 cM |
| Mother, 3474/46. | | |
|  | Your: Daughter 3,470 cM Both sides | Michelle 3rd cousin or half 2nd cousin 1x removed 106 cM |
| Daughter | | |
|  | Your: Brother 2,491 cM Both sides | Michelle 2nd cousin or half 1st cousin 1x removed 209 cM |
| Brother | | |
|  | Your: 1st cousin 1x removed 369 cM Maternal side | Michelle 2nd cousin 1x removed or 1st cousin 2x removed 184 cM |
| Jim Auld my grand aunt Laverne Craddock, 369/20. | | |
|  | Your: 2nd cousin 309 cM Maternal side | Michelle Uncle 1,624 cM |
| 2C, grandson of Stella Mae Craddock my great aunt. 309/15. Sent message 8/26/2018 and ... | | |

ThruLines on Ancestry

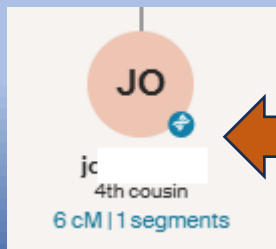
ThruLines

- Attempts to build your direct ancestors
- NOTE: this is primarily based on trees --- both yours and your matches
- It can provide hints of how you might be related to your DNA matches

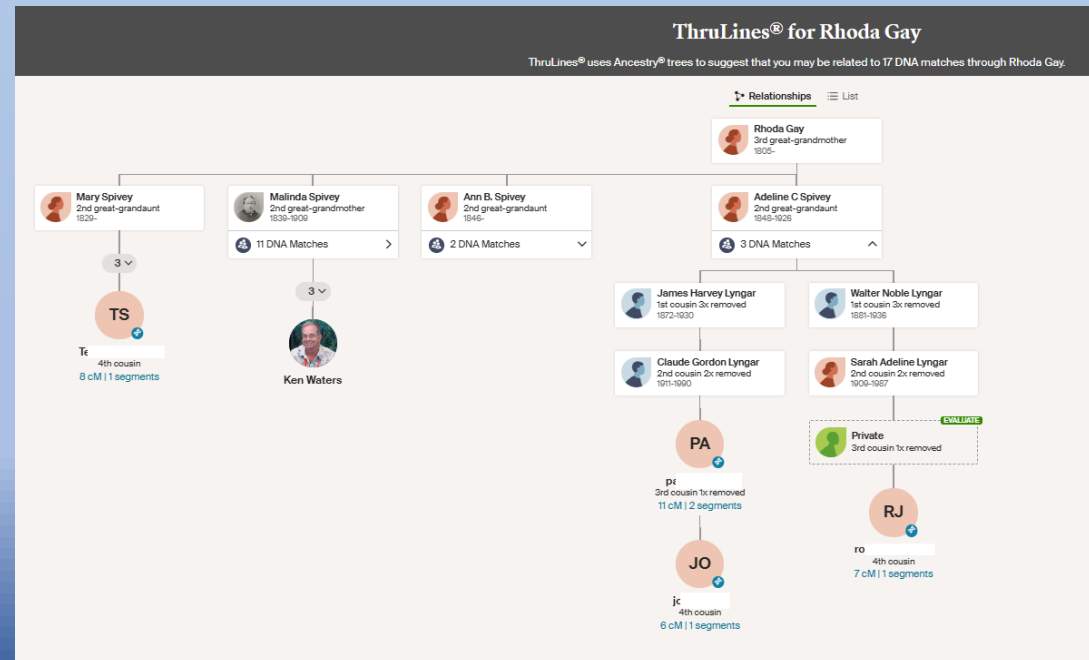
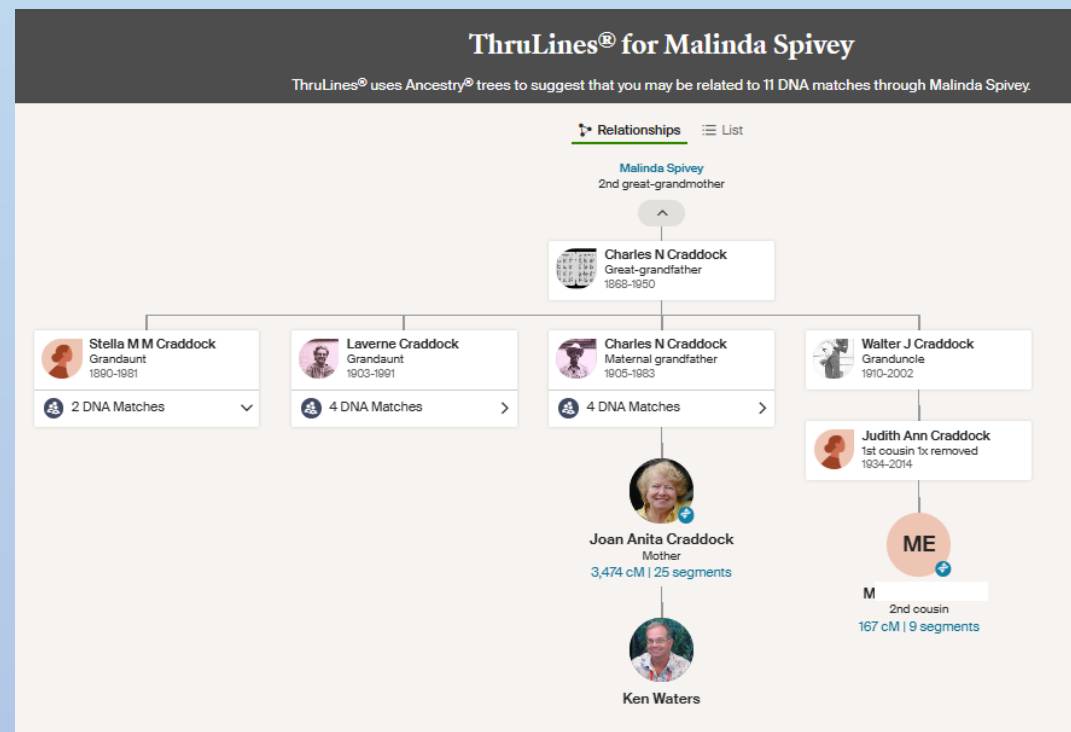


ThruLines

- Important notes:
 - If there are common errors in other people's trees then that will result in bad errors in ThruLines --- carefully verify these tips!
 - Many mystery matches will not show up in ThruLines because of weaknesses in links between your tree and others trees (e.g., NPEs, donor conceived, etc.)
 - Some suggested relationships are using very low DNA values (e.g., 8 cMs) – so be careful – they could be valid but use some other verification (traditional genealogy to verify)



This tiny segment actually seemed to be valid – but that's not always the case!



ThruLines

Home > AncestryDNA®

AncestryDNA® ThruLines®

ThruLines® shows you how you may be related to your DNA matches. ThruLines are **based on information from family trees** they don't change the information in trees. If there's inaccurate information in your tree, you may receive inaccurate ThruLines. Only you and anyone you've invited to view your DNA results can see your ThruLines.

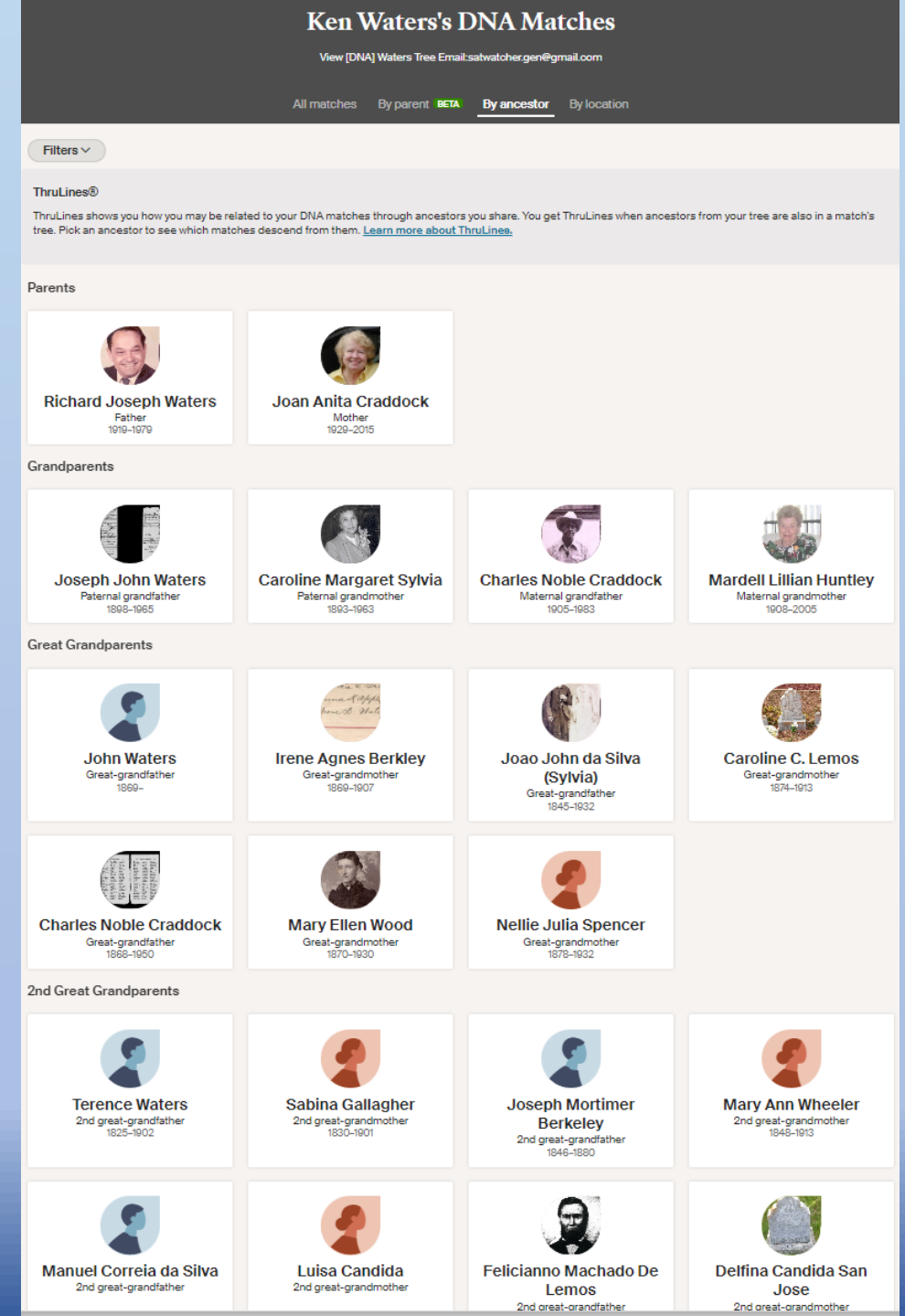
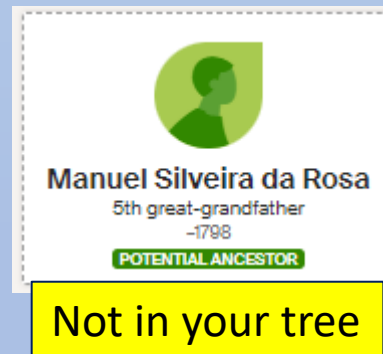
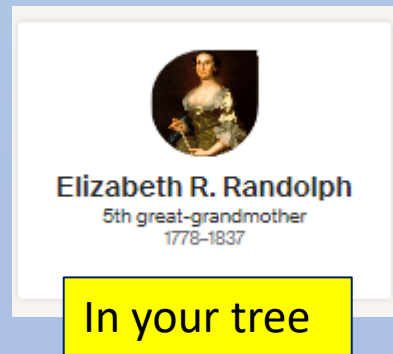
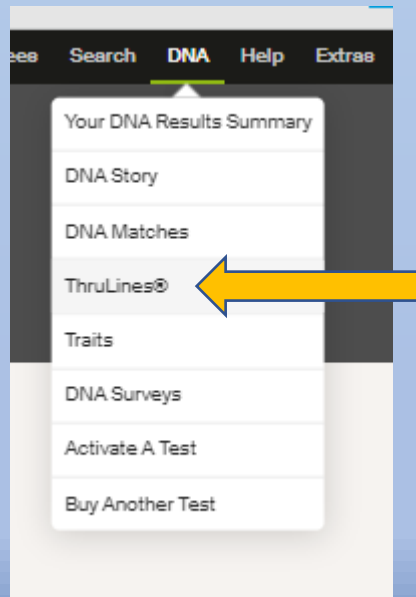
We use the family tree linked to your test to find people who are in your tree and are also in your matches's linked trees. If your tree is private and not searchable, you won't be able to see ThruLines, and information from your matches' trees that are private and not searchable won't be available to you. DNA matches may appear in more than one of your ThruLines.

ThruLines are available for ancestors through 5th great-grandparents. ThruLines won't appear for 6th great-grandparents and beyond.

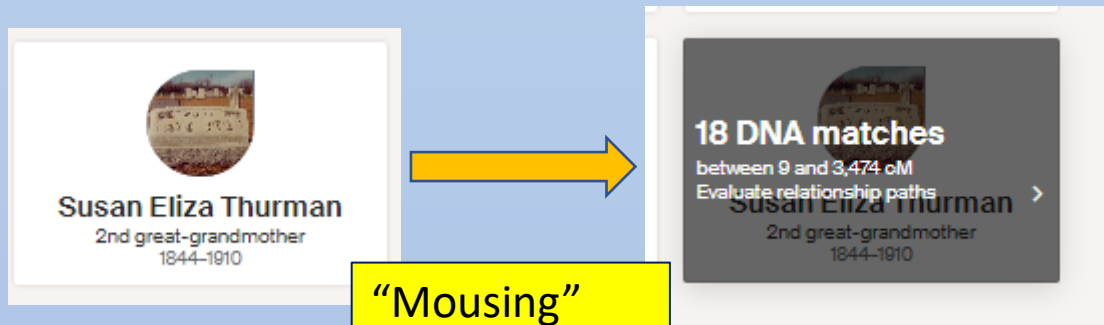
You must have a public tree (or private but searchable) and have it linked to your DNA kit in order to see any ThruLines.

ThruLines

- Starting with parents
- Goes down to 5th great-grandparents



Look at quantity (and *quality* of those DNA matches)



“Mousing”
over a name
can reveal the
number of
DNA matches
Ancestry finds

Be careful: having a lot of DNA matches may simply be because of your close tested matches

You need “breadth” of matches from other matches outside your close family

TIP: Try moving the mouse over each person. When you see lots of matches that is an indication that the person in the tree may be properly placed.

My 3rd Great-grandmother

- This was entered as found from one of my known cousin's tree
- Only a couple of sources with none showing birth surname

The screenshot shows a profile for Elizabeth Buchannon, born 28 August 1813, died 25 August 1860. She is identified as the 3rd great-grandmother. The profile includes tabs for LifeStory, Facts, Gallery, and Hints (3). Under the Hints tab, there are two sections: 'Burial Record' and 'Census'. The 'Burial Record' section shows a hint from 'U.S., Find a Grave® Index, 1600s-Current' for Elizabeth J Wood, born 28 August 1813, buried in California, Moniteau County, Missouri, United States of America, died 25 August 1860, spouse John D. "Baptist" Wood. The 'Census' section shows a hint from '1860 United States Federal Census' for Elizabeth Wood, born abt 1813 Kentucky, residence 1860 Township 45 Range 15, California, Moniteau, Missouri, USA, spouse John Wood. Both hints are marked as 'Accepted'. On the right side, the 'Family' section shows 'Parents' as Buchannon and Unknown mother, and 'Spouse and children' as Rev. John Baptist Wood (1813-1888) and James Green Wood (1832-1915).

Elizabeth Buchannon
BIRTH 28 AUGUST 1813
DEATH 25 AUGUST 1860
3rd great-grandmother

View in tree View notes View comments Merge with duplicate Save to tree Member connect

LifeStory Facts Gallery Hints 3

New 3 Undecided 0 Ignored 0 Accepted 2

Burial Record

U.S., Find a Grave® Index, 1600s-Current Quick compare

| | |
|--------|---|
| Name | Elizabeth J Wood |
| Birth | 28 August 1813 |
| Burial | California, Moniteau County, Missouri, United States of America |
| Death | 25 August 1860 |
| Spouse | John D. "Baptist" Wood |

Why did you accept this hint? ▾

Census

1860 United States Federal Census Quick compare

| | |
|-----------|--|
| Name | Elizabeth Wood |
| Birth | abt 1813 Kentucky |
| Residence | 1860 Township 45 Range 15, California, Moniteau, Missouri, USA |
| Spouse | John Wood |

Why did you accept this hint? ▾

Family

Parents

Buchannon

Unknown mother

Spouse and children

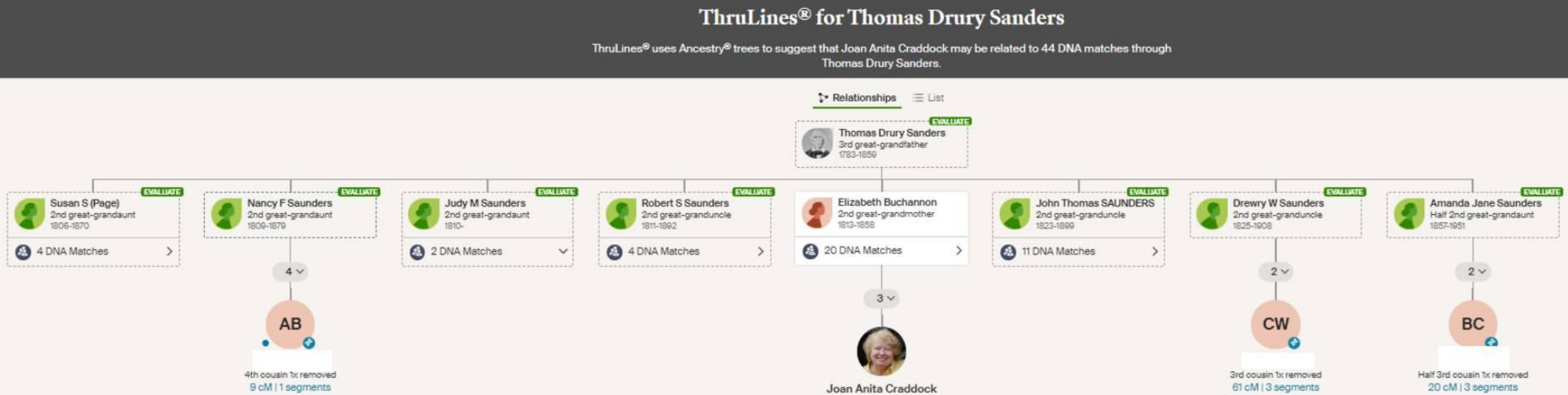
Rev. John Baptist Wood
1813-1888

James Green Wood
1832-1915

No hints for father Buchannon

Only two good accepted hints. Neither shows her surname as Buchannon

Surprise DNA Matches when opening ThruLines



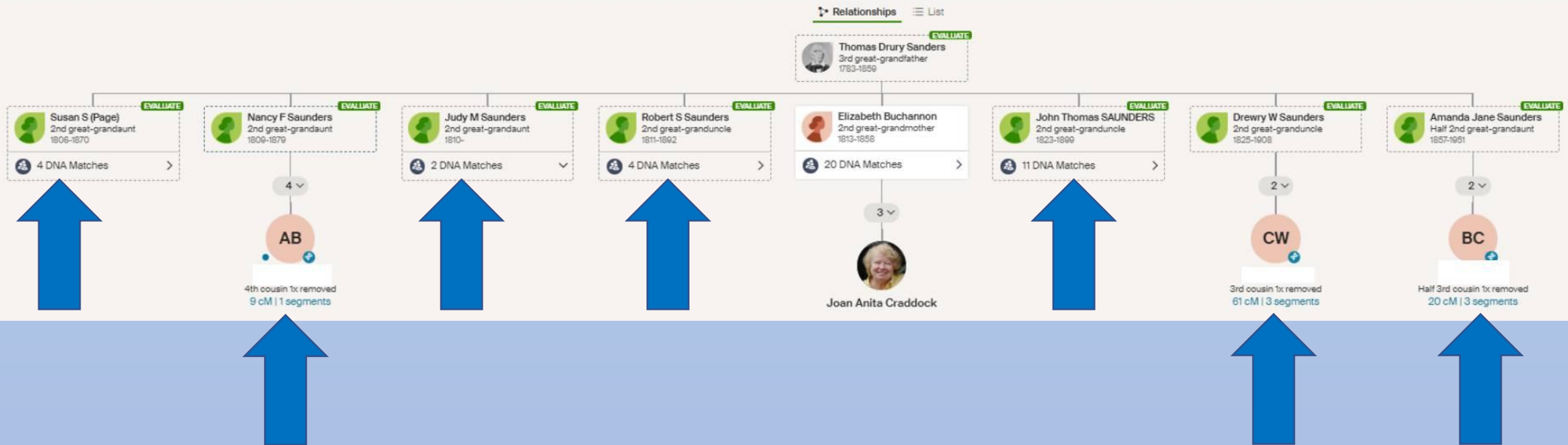
Ancestry found many matches shown as descending from Elizabeth Buchannon's siblings

61 cMs, strong match!

Surprise DNA Matches

ThruLines® for Thomas Drury Sanders

ThruLines® uses Ancestry® trees to suggest that Joan Anita Craddock may be related to 44 DNA matches through Thomas Drury Sanders.

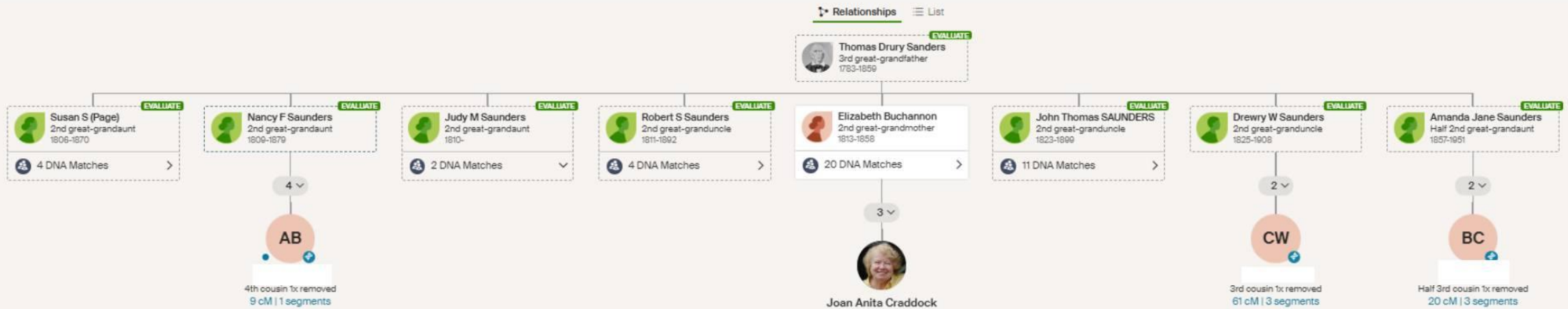


Note the breadth of matches from so many siblings! Very good sign of validation

Surprise DNA Matches

ThruLines® for Thomas Drury Sanders

ThruLines® uses Ancestry® trees to suggest that Joan Anita Craddock may be related to 44 DNA matches through Thomas Drury Sanders.



What does this mean??

Likely that “Buchannon” is not Elizabeth’s actual surname but it may be Saunders/Sanders instead

The large number of DNA matches that descend from the other Saunders siblings seems to indicate this!

Need to dig deep: look at public trees of these siblings

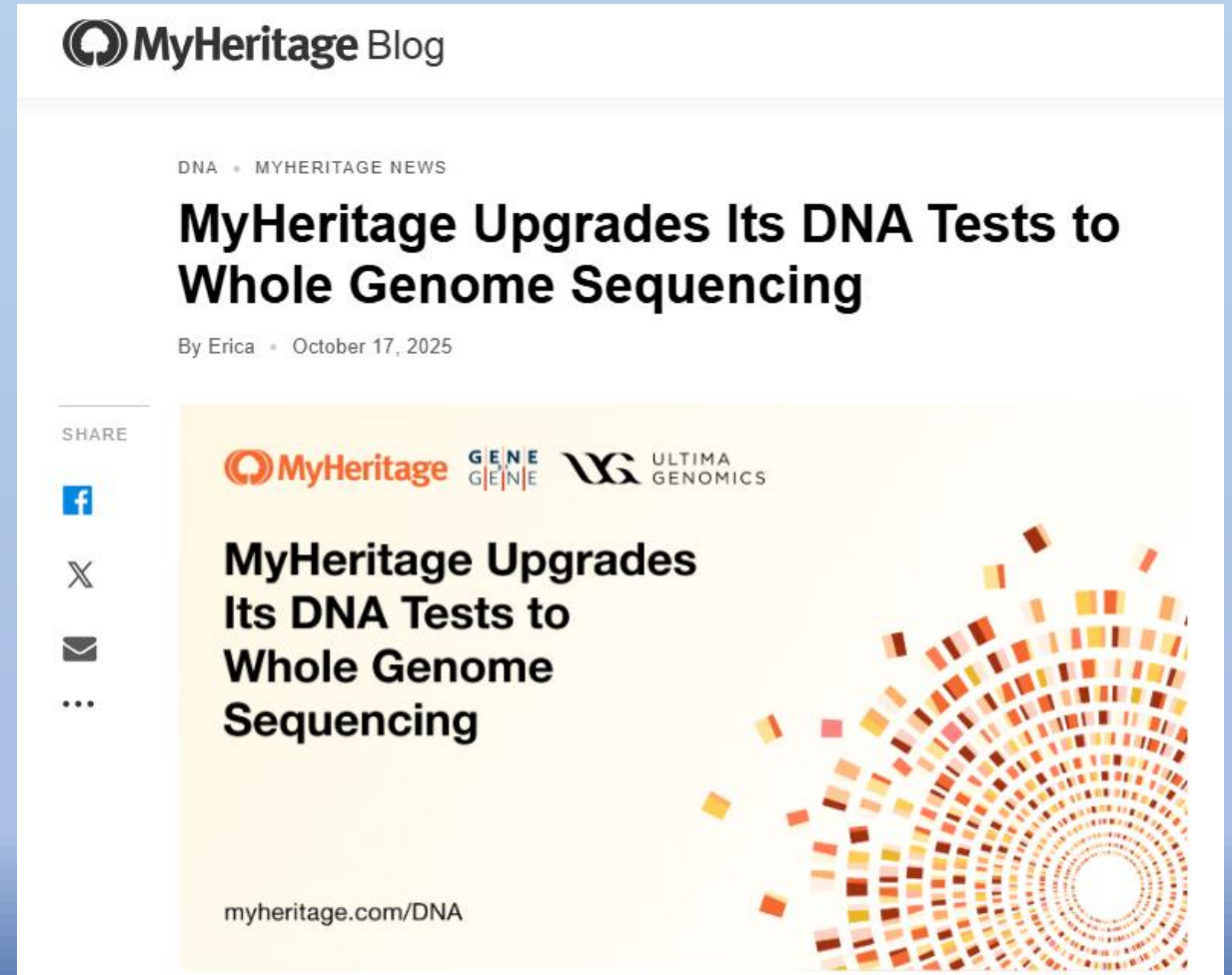
Build Q&D trees for this line to look for confirmatory sources

A limitation: These people were all born a few decades before the 1850 census

Whole Genome Sequencing on MyHeritage

Whole Genome Sequencing (WGS – MyHeritage)

- Announced Oct 2025, supposedly available Jan 2026
- What is it?
 - It measures virtually all the genes on every chromosome
 - That works out to about 3,000,000,000 [billion] bases (or markers or SNPs)
 - Standard autosomal microarray kits typically only measure 700,000 bases
 - Up until October 2025 this was very expensive (\$500+++)
 - MyHeritage is offering it with a standard autosomal kit (currently \$25!)



Whole Genome Sequencing (WGS – MyHeritage)

- Announced Oct 2025, supposedly

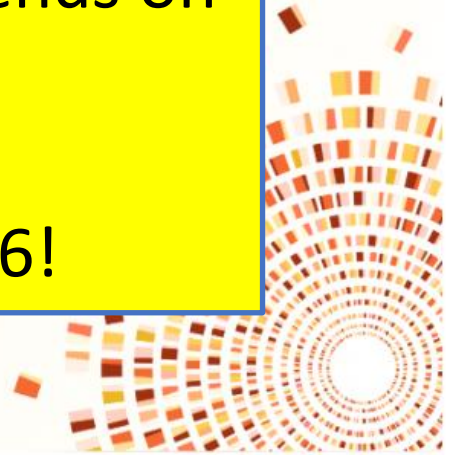


- This is largely new, uncharted territory for the consumer market.

Will it enhance our ability to use DNA for genealogy purposes?

Nobody really knows for sure right now---it probably depends on developers to start experimenting with it.

I will be trying it and hope to report on my findings in 2026!



Ways to Save

Tips to save



- Wait for the 50% off membership deals that come up once in awhile
 - When they do come up, buy a “gift” membership for yourself setting it to be “gifted” one day after your subscription expires
 - Don’t forget to make sure your current subscription does not “auto-renew” by either cancelling it, removing the credit card, or calling Ancestry
 - I’ve done this the last 3 years and so have only paid \$99 to \$119 for a one-year U.S. subscription --- half price

The screenshot shows the Ancestry website header with the logo and a 'Log In' link. A black banner across the top reads 'BLACK FRIDAY SALE CYBER MONDAY'. Below this, the main text says 'Save 50%* on Ancestry® Gift Memberships.' followed by 'Our biggest discount of the year.' and a large green button labeled 'Gift now'.




| MOST POPULAR | | |
|--|--|---|
| U.S. Discovery | World Explorer | Family Pro |
| Access all U.S. records on Ancestry® | Access all U.S. & international records on Ancestry® | Everything on Ancestry®, Fold3®, & Newspapers.com™ Publisher Extra®, Pro Tools, & up to 4 additional accounts |
| Free for 14 days Auto Renewing. Cancel Anytime. | Free for 14 days Auto Renewing. Cancel Anytime. | Free for 14 days Auto Renewing. Cancel Anytime. |
| *\$24.99 \$19.99/month | *\$39.99 \$34.99/month | *\$59.99 \$54.99/month |
| *\$119 \$99/6 mos. | *\$169 \$149*/6 mos. | *\$259 \$239/6 mos. |
| Pay per month | Pay per month | Pay per month |

Tips to save



- Use one account to manage multiple kits
 - Then, when you upgrade to a membership, ProTools, or AncestryDNA Plus you will only have to pay once for them and they will apply to all your managed kits!
- Look out for specials on ProTools such as reduced subscription for 6 months

NOTE: All of this is always subject to change!

| | Cost | Description | I have |
|------------------|--------------------------|---|---|
| DNA Kit | \$0 (beyond cost of kit) | See matches, ethnicity, basic tools |  |
| Membership | \$99-\$300/yr | Ability to search trees, records, etc. |  |
| ProTools | \$5 - \$10/mo | Many useful tools, in particular the shared matches (note: requires a full paid membership to add on) |  |
| AncestryDNA Plus | \$30/6 mo | Basic shared matches (included with membership) | |



AncestryDNA Plus™ membership.

AncestryDNA Plus™ is a premium DNA membership that gives you access to helpful tools and new features to make it easier than ever to make continuous discoveries about your family.

\$29.99 FOR 6 MONTHS*
(Effectively \$5 a month)

Summing Up

- Download your DNA and upload to GEDMatch and LivingDNA
- For Ancestry and MyHeritage, make a public tree and link it to your DNA kit
- Try DNAGedcom (just for a month if you wish)
- Try Ancestry's ProTools (at least for a month---it's well worth it!)

Questions?



Upcoming Classes/Presentations

Sat, Jan 31, 3 pm

Theme: Celebrating 250 Years of the USA

Topic: Weaving one person's discoveries from DNA and family tree research to find historical connections!



Presentations:

<http://familytreeaz.com/Presentations>

All library classes (highlighted blue) are free to attend and require no registration. Classes are held at the Red Mountain Mesa Public Library at 635 N Power Rd in Mesa (unless otherwise noted above).



Remember---all presentations online

- Presentations: <http://familytreeaz.com/Presentations>



Genealogy Presentations

2023

[Identifying Your DNA Matches \(Jan 2023\)](#)

2022

[A Unified Process for DNA Matches \(Dec 2022\)](#)

[Intro to DNA \(Dec 2022\)](#)

[DNA Painter Dec 2022](#)

[GEDMatch \(Trilogy\)](#)

[DNA Relational Diagrams](#)

[First Look at Ancestry SideView Matching](#)

[Deep Dive into MyHeritage DNA Oct 2022](#)

[What Can DNA Do For You Sep 2022](#)

[New Match Methodology 2022](#)

[GEDMatch Apr 2022 Handout](#)

[DNA Tips & Tricks](#)

[Intro to DNA \(Mar 2022\)](#)



Presentations:

<http://familytreeaz.com/Presentations>



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