



# The Musical Geography Research and Style Guide



A Textbook for Digital Mapping  
and Digitized Historical  
Newspaper Research



# Musical Geography Research and Style Guide

## Table of Contents

### Section I

#### Introduction

1. Developing a Research Question
  - a. Is Your Research Question Mappable? What Types of Data Work Well with Maps?
  - b. Acknowledging and Identifying Limitations of Your Project Before You Begin
2. Finding Sources and Doing Research
  - a. Finding Primary Source Archives Appropriate to Your Project
3. Best Practices for Using Historical Newspapers: Towards a Research Methodology
  - a. Selecting a Database
  - b. Best Searching Practices
  - c. Optical Character Recognition: Advantages and Pitfalls
  - d. Research Case Study: Narrowing Down Your Search Results
4. Best Practices for Reading Search Results
  - a. The Importance of Contextual Reading
  - b. How Many Databases Should You Search?
  - c. Treat Your Findings Like Data: How to Read Efficiently
5. Towards a Representative Dataset: Limitations of Digitized Research
  - a. Are Digitized Sources Neutral: Considering Database Bias in Digitized History
  - b. Further Readings

### Section II

1. Turning Your Data Into a Map
  - a. Mapping Preparation: Cleaning Up Your Data
  - b. Considering Copyright
  - c. Working Backwards
  - d. Which Mapping Software Should You Use
2. What Makes a Map Effective?
  - a. Maps as Arguments
  - b. How Do You Map Sound?
  - c. Six Functions of Musicological Maps
  - d. Considering the Viewer Experience
  - e. Examples of Effective Digital Maps
3. Mapping in ArcGIS
  - a. ArcGIS Pro vs. ArcGIS Online
  - b. Basics of ArcGIS Online
  - c. Resources and Advanced Tutorials for ArcGIS Online
  - d. Troubleshooting: What to Do When Your Map Looks Different Than You Imagined
  - e. Utilizing ArcGIS StoryMaps
  - f. Creating ArcGIS Dashboards
4. Resources for Other Mapping Softwares
  - a. Ensuring Digital Longevity: Is Digital Work Really Permanent?

#### Conclusion

#### Authors Note

## **Section I**

### **Introduction**

If you're reading this, you're either interested in doing research in digitized, historical newspapers so you can make an amazing, interactive, digital map, or you're being forced to do research in digitized, historical newspapers so you can make an amazing, interactive, digital map. Either way, welcome! This guide exists to help make sense of the wealth of digitized resources available and to translate their riches into effective maps. The idea is to take a process that can feel daunting and overwhelming and make it feel straightforward and manageable. By the time you've finished reading this guide, you'll be an expert at working with historical newspapers and with the databases that compile them. You'll also be prepared to use the historical data you've collected to make interactive digital maps.

### **1. Developing a Research Question**

The first step of any map-oriented research project is developing a research question. A good research question is specific: what music was performed at Frederick Douglass's speeches? Where did touring Fisk Jubilee Singers ensembles perform between 1885 and 1895? But good research questions also leave room for adjustment, and expansion. Maybe Frederick Douglass rarely spoke at events where music was also heard; let's try adding Booker T. Washington to our research question. And maybe the Fisk Jubilee Singers only toured in the late 1880s, but we learn they started touring in 1867 and continue touring in the present. Is it too ambitious to try to map all of their tours? Maybe it is. Similarly, attempting to map all performances of indigenous song collection during the twentieth century is too broad, yet looking at the song collections of a specific tribe or First Nation during a set time period is both a wiser place to start and a strategy that leaves room open for expansion later down the road.

#### **a. Is Your Research Question Mappable? What Types of Data Work Well with Maps?**

Since this guide is focused on digital mapping, it is important to consider what types of data work well with maps. As you begin developing your research question, consider:

*Does my research produce data that is geographically disparate?*

Maybe you're interested in performances at a famous theater. Your map is going to show a single point - that's not so interesting. Try a timeline, video, essay, or podcast.

*Does my research produce data that is meaningful when it's visualized on a map?*

Maybe you're thinking it'd be neat to see where symphonies were composed in 1933. But then you realize that Aaron Copland and Arthur Honegger moved around during that year. Florence Price's Symphony No. 1 was premiered in 1933, but composed earlier in a different place. And while a map drawing together lots of symphony-related places might be an interesting way into the topic, the map itself won't make an argument; it will serve as a portal for users to access information. That can be a useful service for a map to provide, but you might just as easily use a timeline, video, essay, or podcast to the same end.

On the other hand, if your answer to these questions is "yes," then a map might be right for you.

Before you begin map-making, consider the geographic scale of your research. Are you interested in mapping data within a city, within a region, within a country, or across countries? It's often wise to limit the scope of your map using tools offered by common mapping platforms like Google Maps and ArcGIS. There is no need to show viewers the entire world when you're investigating the locations of Black-owned theaters in the American South during the 1910s. Knowing the geographic boundaries of your project is crucial before beginning, as it will save you time in the data collection process and will make your map easier to use. If you're interested in a single city, you'll want to collect specific location data, down to an individual address. If you're studying a region, country, or continent, then you might not need specific addresses; you can generate latitude/longitude pairs that correspond to cities, or collect raster data (quantitative data about an area) at the county level.

Secondly, consider if and how your research deals with time. Will time be a factor in your dataset, leading you to visualize each year as a different layer? Will your map require a time-elapse feature, or particular color-coding in the legend? As a research tool, maps can show change over time. Maps can plot routes, or distances between birth and death locations. Maps can visualize synchronic (simultaneous) or diachronic (time-elapsed) relationships. Datasets with a time-based component can easily be mapped and delineated, so long as you're careful in your data collection and data cleaning processes. Whether you are looking at specific concerts, or changes in musical patterns over time, considering how time will be conveyed on your map *in advance* will influence how you collect and format your data. The most important question to consider: Is time a significant variable that will impact the visual presentation of your map? If yes, make sure to standardize the date and time format in your data collection process.

#### **b. Acknowledging/Identifying Limitations of Your Project Before You Begin**

Before you begin primary source research, it is important to decide on the limitations of your project. Factoring into account how much time you have and want to give to this project, place limitations on your research. Carefully focused research on a specific sub-topic is more effective than broad-based, general inquiry.

The first limitation to consider is time: what specific time period do you want to focus on. Decide on a clear timeframe for your research and map within those parameters. It is unrealistic to map one hundred years worth of data, but more plausible to map a single year, a single city, or a limited number of decades. The time limitations of your research question will largely depend on how much time and resources you wish to spend on the project.

The second factor to consider is the geographic limitations of your project. Do you want to include international data? Are you going to focus on a single city, or a single region? Another limitation to consider is the extent of your research question. Do you want to focus on a single person, or organization? There are no right answers to these questions. Your answer will depend on your own circumstances, research interests, and time limitations.

## **2. Finding Sources and Doing Research**

Once you have identified a research topic, it is best to begin with preliminary secondary source reading. Maybe you have already begun the secondary source reading process as part of a course, or perhaps you are beginning it on your own. Either way, use your institution or local library's online catalog to find several books and articles on your topic. Read through the sources, and take notes (making sure to record complete citations for each source) in your preferred note-taking format. Pay close attention to the bibliographies of these sources



for additional primary and secondary sources that might be useful. Preliminary secondary source reading will also help you decide which primary source databases to search, and what search terms to use.

**a. Finding Primary Source Archives Appropriate to Your Project**

Once you've completed preliminary secondary source research, you should begin looking at primary sources. Outside of digitized newspapers, which are discussed in section three, what digitized archives can you use to find digitized primary (and even some secondary) sources? The table below lists resources for primary source American history research beyond your college library with a brief description of their holdings.

<u>Resource Name</u>	<u>Access</u>	<u>Notes</u>	<u>Link</u>
Internet Archive	free	If you are looking for a free digital version of a book start here. Also great for old recordings and historical books. Collection of old periodicals and magazines is limited.	<a href="https://archive.org/">https://archive.org/</a>
Hathitrust	free	Great for periodicals and public domain books. Always worth a search	<a href="https://www.hathitrust.org/">https://www.hathitrust.org/</a>
Google Books	free	Great for public domain books and magazines. I recommend setting chronological filters, the older material is the best stuff on google books.	<a href="https://books.google.com/">https://books.google.com/</a>
Archive Grid	free	Database that helps locate relevant archival collections quickly. Always look for a finding aid, see if the collection is digitized, and then look for an email contact. Many libraries will send you free scans of archival materials if you email them.	<a href="https://researchworks.oclc.org/archivegrid/">https://researchworks.oclc.org/archivegrid/</a>
Ancestry.com	institutional	Go to resource for any type of genealogy research. Search function works best with specific but not exclusive search terms. Add a birth date range even if you don't know the exact birthdate, add a middle initial, add a birth state. But don't make it too restrictive b/c many census records are incorrect	<a href="https://www.ancestry.com/">https://www.ancestry.com/</a>
Family Search	free	If you don't find what you are looking for on <a href="https://www.ancestry.com/">Ancestry.com</a> try family search. Most of the documents are the same through does have some differences. Site is run by LDS church	<a href="https://www.familysearch.org/en/">https://www.familysearch.org/en/</a>
Your Local Public Library	Free with library card	Oftentimes there are many digital resources and databases available for free. If your school doesn't subscribe, try your local public library.	varies
Worldcat	free	Great for figuring out what institutions house	<a href="https://www.worldcat.org/">https://www.worldcat.org/</a>

		this book/score	
--	--	-----------------	--

### 3. Best Practices for Using Historical Newspapers: Towards a Research Methodology

Digital newspapers are a fantastic resource for historical research. The scope of available digitized newspapers is rapidly expanding, and thus historical newspapers present one of the best primary source resources available today. This section will outline best practices for working with digitized historical newspapers. How can researchers and students use digitized newspapers to their advantage? And, what challenges do digitized newspapers create?

#### a. Selecting a Database

To begin, which newspaper database should you use? As a researcher, you are also a consumer in the digitized historical market. You have a choice in which newspaper databases you use, and should always diversify your searching across multiple databases.

Which database you search first will depend on the chronological and geographical parameters of your project. Generally speaking, search a large database first and then look at smaller regional databases. The goal of your initial search should be to discern: Is there enough material about this topic to warrant further investigation? You may find there is too much material, in which you will need to further refine your search terms.

The table below provides a quick reference guide to major digitized newspaper databases for American newspapers from the eighteenth, nineteenth, and twentieth centuries. This table requires a necessary disclaimer: my experiences with digitized newspapers are informed by my own research topics and institutional access. Your experience may be different. Newspaper databases that I found useful, may be inaccessible or useless to you. With that said, I hope that my recommendations can be a useful guide.

Database	Access	Pros	Cons	My Opinion
Proquest	Institutional subscription	Very prominent. Good for searching individual papers	Individual paper model creates asymmetric data. Automatic paper clipping is problematic	Overall, my least favorite archive
Chronicling America (LOC)	free	Extremely easy to download pdfs. A good baseline database to check research viability	Database is not as complete as other archives. OCR capabilities are better in other archives. Not easy to scan search results and can be difficult to find selected text once you open a paper	A good baseline but won't give you as much data as other archives
<a href="http://Newspapers.com">Newspapers.com</a>	Paid (free 14 day trial available)	Excellent and fairly comprehensive database. Search functionality is very good. User interface is intuitive without automatic clipping. Zoom functionality is not glitchy.	Privately paywalled. Institutions don't subscribe. Connected to <a href="http://Ancestry.com">Ancestry.com</a> so the intended audience is genealogical researchers. Automatic obituary clipping option in software is confusing and unnecessary.	My favorite database, but I don't like that it's privately paywalled.

Readex	Institutional subscription	Better than Proquest. Excellent search interface with text preview. Highly customizable search features	Database is not as comprehensive as Newspapers.com. Automatic newspaper clipping is problematic, and difficult to save or download clippings.	Pretty decent and worth your time.
Alexander Street	Institutional subscription	Good for specialty data sets. Their 19th century American Music periodicals database has a large complete collection of periodicals, which are otherwise difficult to find in complete or consecutive issues.	Have to double search for keywords - once you open a result you have to search again. Their OCR often misreads dates so double check listed dates are correct. Constantly requires you to re-login via institutional proxy.	Good for specialty data sets, search functionality is more laborious than other archives
Regional and State Archives (see below)	usually free	Can be hit or miss. Almost all are free. Some are fantastic. Most states have a historic newspaper archive and some larger public libraries also have their own databases.	Some clearly have suffered from a lack of funding and use extremely outdated software interfaces	Worth your time to look into, but some are better than others
University of Illinois	free	Contains both IL state newspapers and national collection of popular entertainment (vaudeville) newspapers. Good for specialty data sets, especially concerning 19th and early 20th century popular music	Individual text clipping is problematic and encourages narrow readings. OCR is very poor, and OCR article transcriptions appear automatically.	Overall a good state archive
Brooklyn Public Library digitized newspapers	free	One of the best state digitized newspaper archives. Search interface is the same as <a href="http://Newspapers.com">Newspapers.com</a> . Completely free and no proxy login required. Very easy to re-access search results	Only has two papers: Brooklyn Daily Eagle and Brooklyn Life Magazine.	One of the best regional archives
Minnesota Historical Newspapers	free	Good for regional inquiries. Papers here are not digitized elsewhere	Search and user interface is extremely archaic. Extremely slow to load. Most big MN	Good for regional data

			papers are in other databases	
New York State Historical Newspapers	free	Good if you've already read NYC papers and you're looking for more information. Primary search interface is map based	Search interface is the same as LOC Chronicling American database. Not extremely comprehensive	Okay
California Digitized Newspapers	free	Worth your time if your dealing with data in CA	Automatic OCR transcription. OCR is generally poor	Decent but could be better
Cambridge Public Library	free	Use if you've already read Boston papers and you're looking for more information	Automatic text clipping is problematic. Zoom functionality is glitchy	Decent but could be better
Elephind	free	Composite digital archives. Pulls search results from other (free) digitized archives and allows you to filter based on archive	Would not recommend as a main database, good for fact checking and scoping out alternate databases	Check to see what else you could have missed
Old Fulton New York Postcards	free	Mostly New York papers with some others thrown in. Good if you've looked everywhere else and still need more information	One man's personal collection. Extremely outdated search interface that is very difficult to navigate. The most difficult search interface I have ever used.	Only use as a last resort.

### b. Best Searching Practices

Once you have selected a database, it is time to begin searching. If you are searching for an exact phrase, put the term in quotes. Be aware that historical newspapers often have a somewhat cavalier attitude towards names; multiple spellings and misspellings of names are normal. If a word or name has multiple known spellings, put both spellings in quotes separated with “or.”

While searching in the Brooklyn Digitized Newspaper archive for just “Camilla Urso” returned 131 results, adding the alternate spelling “Camille Urso” returned an additional 20 results. Also try searching for

word truncations such as “Camil\* Urso.”

The screenshot shows a search interface for digitized newspapers. At the top, there are navigation links: ARCHIVE HOME, SEARCH, BROWSE, PAPERS, CLIPPINGS, and a SIGN-IN button. A yellow banner below the navigation bar reads: "WELCOME TO NEW SEARCH We're still working on making search better so we'd love any feedback. Back to old search." Below this, a red banner indicates "150 Matches". A search bar contains the query "Camilla Urso" or "Camille Urso". Below the search bar, a suggestion says "Try something like this: Abraham Lincoln 1861-1865 in Illinois. More tips". On the left, there is a "Date" filter section with a calendar icon, a text input "Enter a date or range...", an "Apply" button, and a line graph showing search results from 1852 to 1913. On the right, there are tabs for "ALL", "OBITUARIES", and "MARRIAGES", along with a "+Alert" button and a "Relevance" dropdown menu. The main results area shows "150 Matches" and a preview of a newspaper clipping from "The Brooklyn Daily Eagle", PAGE 4, dated Sunday, December 29, 1895, with the text "MISS HOOPER'S CAMILLA URSO AS WAY IN A CHO".

Newspaper search algorithms work best with broad but specific results. In the example above, while I have specified an exact name in quotes, I have also made my search broad enough to encompass multiple spellings and misspellings.

For more information on the basics of digitized newspaper searching, please see my video tutorial on this topic: <https://www.youtube.com/watch?v=RRYTlkMQBz0>. In this tutorial, I walk you through my own searching process for digitized newspapers.

### c. Optical Character Recognition: Advantages and Pitfalls

Digitized key-word searches rely on Optical Character Recognition (often abbreviated OCR). While OCR is a powerful tool that allows historians to sort through large volumes of data, it is also an imperfect tool. When using keyword searches, be aware that OCR can easily miss or misread your search terms.

In this example from the Illinois Digitized Newspaper Collection, the OCR transcription of the text is nonsensical and unreadable. Therefore, never rely on OCR transcriptions when reading digitized newspapers. When at all possible, read the original scanned source and click to hide the OCR panel in order to avoid mis-readings.

# New York Clipper, 6 April 1889

Issue

Article ▾

Los Angeles \* . —Amusements have been at a low ebb . The Grand Opera House reopened on week of March 25 with Conreid s Opera Co The Los Angeles Theatre was closed with the exception of Sunday . - night . 17 , when Hoyts - A Hole in the Ground . Co . , being storm bound , put in the time , and **Camilla Urso** . who was advertised at the Academy of Music , changed at the last moment and played at \* the theatre 22 , 23 . Coining : Nelson s World Co . 24 and week . Stockton . —At the Avon . Josef Heme was well received March 19 . 20 . Harry Keruells Co . apiwared to good business -21 .. Sol Smith Russell came 25 . The box sheet indicated a big house .... lustily A Wood s Specialty Co .. come 28 .. - Allele iu the Ground was unable to connect and the Avon was dark 18 . |



on Jr. was  
(late of the  
top has re-  
ne East.

d two good  
ie Webster-

success in  
d 1 for the  
8.  
Bradys, El-  
erty, Gracie



2, Stetson's  
ent March  
people away.  
3, "The Fat  
a Co. 8 and  
ay evening,  
Academy,  
in a barrel  
would pro-  
e building,  
out \$400.

se, Fisher's  
iness. The  
w 29. Con-  
il 11. ....At  
"The Emi-

the recipient of a fine gold medal for his proficiency in dancing.

## CALIFORNIA.

**San Francisco.**—The People's Theatre, which was dedicated Feb. 2, is situated on Market Street, opposite Odd Fellows' Hall, and has been doing a good business. The executive staff is: Chas. J. Germer, proprietor; Frank Huffman, manager; Nick Hoffman, treasurer; B. F. Dearborn, stage manager; Prof. H. Schreiner, leader of orchestra; J. C. Kloos, master machinist; Chas. Morris, scenic artist. The theatre is on the ground floor, with ample exits, and has a seating capacity of 2,500. The stock includes: Will Dongan, Maggie Francis, Rich Williams, Walter Von Rosen, Edmund Earle, B. Frank Dearborn, Johnny Williams, E. N. Thayer, Fanny Yantis, Maggie Frances, Minnie Libby, Lillie E. Lorella, Lillian Lawrence,.....Gibbons and Ford, Sadie Fairfield, Hattie Stewart, Mulholland and Mahon, Thomas C. Leary, Mongreni De Lassom and the Newcomb Family contributed specialties at the Wigwam Theatre week of March 25. Onzo and Bell, billed to appear at the Wigwam last week, failed to materialize..... "The Pearl of Savoy" was presented at the People's Theatre last week..... The Romalo Bros. and Adele Purvis are doing double turns, appearing each evening at the Bella Union and Cremorne..... Dick and Ida Cummings are engaged at the

Digitized newspaper searches work best with some search limitations but not too many. Search for an exact phrase, refine to a relevant time period; but leave some variables open. Don't specify by city, or refine by only a single year, or single paper on your first search. A search that is too broad will yield irrelevant results, and thus create more keyword hits to work through, whereas a search that is too narrow will exclude relevant results and could cause you to miss crucial information.

### d. Research Case Study: Narrowing Down Your Search Results

Considering these research methods and practices, let's turn to a case study in tailored searching. If I am searching for information about the nineteenth century dramatic reader Helen Potter, I might begin with a keyword search for her name in the Readex Allsearch newspaper archive, a relatively comprehensive and national database. Doing so returns over two-thousand results, as shown below.



**Readex**  
A Division of NewsBank

Readex AllSearch  
Other Databases Share Feedback

Home Advanced Search

Results Per Page  
10 20 50

Document Type  
Newspaper

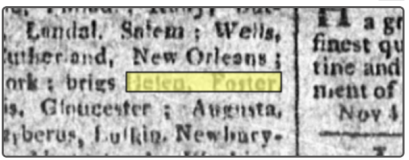
Database  
African American Newspapers, Series 1 (1)  
African American Newspapers, Series 2 (7)  
American Business: Agricultural Newspapers (18)  
American Business: Mercantile Newspapers (3)  
American Gazettes: Newspapers of Record (7)  
American Politics: Campaign Newspapers (3)

Searching 52 of 52 databases "Helen Potter" Go!

Advanced Search  
Limited to: Newspaper Clear

2,044 Result(s) Oldest to Newest Sort

1. **Shipping News** page [3], iss. 89, vol. V  
Database: America's Historical Newspapers  
Document Type: Newspaper  
Date: November 4, 1808  
Source: Repertory (published as The Repertory)  
Place(s) of Publication: Boston, Massachusetts



Preview

Because "Helen Potter" is a common name, I know many of these results are irrelevant and unrelated. Weeding through every single result would be inefficient and distract me from finding useful sources. Therefore, my next step is refining my search results by year.

I know Helen Potter was active in the 1880s, but I'm unsure exactly when she started and stopped performing. Scrolling down on the left side panel, I've chosen to refine my search results from the years 1870-1899, which encompasses the years I know she was active while also giving myself a wide berth of time on either side. This time filter is both specific but also wider than just a single year. Adding a time filter, cuts my results in half, narrowing my results from over two-thousand to just over one-thousand.

After sorting my results from oldest to newest, it's clear that many of my results are still irrelevant. One of the first results is about a Helen Potter who was a witness for a crime in San Francisco - clearly not the Helen Potter I'm looking for.

◀ Back to Results 5 of 1,191 ▶

News Article | Sacramento Daily Union (published as SACRAMENTO DAILY UNION.) (Sacramento, California) | November 23, 1871

Page 3 Page 3 of 4 View Details

"Helen Potter" Highlight 1 highlight

ate Journal has entered upon its  
ers have been plowing for sev-  
n is preparing a directory for  
y Republican has entered upon  
ommunication for Alpine so near  
ose at hand.  
egon, has more saloons than any  
in the United States.  
since there was quite a fall of  
county—only about an inch.  
a Boyle, a widow lady of Vallejo,  
s a candidate for Copying Clerk

himself to death, or at least that he brought  
on his disease by starvation. In Sacramento,  
I understand, he hired a room and used to take  
his meals at the cheapest restaurant.  
Mrs. **Helen Potter**, sworn—I have lived in  
San Francisco about thirteen years. In 1870  
I resided on Geary street. I knew Hawes about  
three years. I knew Mrs. Hawes rather longer.  
Visited Hawes' house in December, 1870. He  
sent for me. I found him in his sleeping room.  
Mrs. Hawes was there and soon went out for a  
nurse. He asked me to bathe his head. I re-  
mained there over two hours. I went there  
the next day. From that time I was there  
nearly every day for about two weeks. He  
told me the first day that he was starving for  
proper food. He told me all about his proposed  
Mount Eagle University and Chamber of Indus-  
try, which were to be dedicated to Hon. Horace

to witness the will. I was  
in the Recorder's office.  
He asked Barry to sleep  
He did so. He then  
the will. I did so, and  
wrong, and to place it in  
me to send the witness away. One  
sitting on the porch he asked me to  
tory and read from it. I thought  
strange request, but got the book,  
me to read over the names of the dis-  
ciations in the city. I did till I  
Eight-hour Association, when he s  
it over, there is no interest in it." A  
came one day and he told me he di-  
to see him—that he knew a d—n s  
about his disease than the physician  
another occasion witness said he t  
call one of those d—d women.

Therefore, I decided to add the word "reader" to my search, which will increase the chance I'm viewing a relevant result. In order to maximize relevant results, I don't place the word "reader" in quotes; instead, I place the word outside of quotes so the search algorithm will search for "reader" anywhere on the page instead of the



more restrictive phrase “Helen Potter Reader.” Doing so narrows my search down to just over two-hundred results - a database that is readable and manageable while also being broad enough to widen what I know. Now that I have whittled my search results down to a much more manageable dataset, I will read through each result.

The screenshot shows a Proquest search results page. At the top, there are tabs for 'Home' and 'Advanced Search'. Below the tabs, on the left, is a sidebar with filters: 'Results Per Page' (10, 20, 50), 'Document Type' (Newspaper), and 'Database' (listing various American business, gazettes, religion, and early American newspapers). The main search area shows 'Searching 52 of 52 databases' and the search term '"Helen Potter" reader'. A 'Go!' button is next to the search bar. Below the search bar, it says 'Advanced Search' and 'Limited to: Newspaper x Multiple Decades (3) x Clear'. The results count is '221 Result(s)'. On the right, there are sorting options: 'Oldest to Newest' and a 'Sort' button. The first result is titled 'Amusements' and is from 'America's Historical Newspapers', dated 'January 3, 1875', from the 'Sunday Mercury' in 'New York, New York'. A preview of the article is shown, with the text: 'and Orson, which was pro- do now actor, Stuart, turns at Feshter used to be. He as well as you do, reader but keep up the foreign accent. n. He graduated from the ized to provide a thunder and'. The second result is titled 'Amusements. The Mercury Post-Office' and is also from 'America's Historical Newspapers', dated 'February 7, 1875'. A preview of this article is also shown, with the text: 'aid to deal with the leading dea ho it kisa, a lady who has gained able, ne a dramatic reader at the on'.

#### 4. Best Practices for Reading Search Results

Despite the ease of searching in digitized collections, browsing results too quickly can easily lead to misconstrued data. Depending on the scope of your project and personal resources, sort your search results either by relevance or chronologically (oldest-newest or vice versa). When reading through search results, the most important thing is not to cherry pick. Regardless of how you sort your data, read all the search-results on a page. Don't rely on text previews or OCR to determine whether or not to view a result. When reading through results, it can be helpful to set aside or flag detailed articles that you may want to come back to, transcribe, or quote in the future. Setting them aside in a new tab, allows you to continue browsing without becoming sidetracked by a single article.

##### a. The Importance of Contextual Reading

Secondly, always look for context in a newspaper keyword result. Some databases facilitate contextual reading better than others. If the database automatically clips text into columns, click to view the whole page. As you read, ask yourself: What section of the newspaper is this in? How does the graphics, text, and size compare to the adjacent articles, columns, advertisements on the page? Where is the paper is this result located? Is it a front page story with a large heading, or is it hidden in a back page classified section?

The database Proquest has the most aggressive text clipping interface. Instead of viewing a spread of the complete paper, If I want to read the December 1881 issue of the San Francisco Chronicle, for example, I am presented with a list of OCR generated articles (shown below). An automatically generated list of articles makes contextual reading nearly impossible.



Instead, while reading select the option to view the whole page. Suddenly, you have to hunt through a much more complex set of historical information to find the relevant information.

[San Francisco Chronicle \(1869-Current File\)](#); San Francisco, Calif. [San Francisco, Calif]31 Dec 1881: 4. [Browse this issue](#)

The screenshot shows a digital archive of the San Francisco Chronicle from Saturday, December 31, 1881. The interface includes a top navigation bar with 'Full text - PDF', 'Page view - PDF' (highlighted), and 'Details'. Below this is a page navigation bar showing 'Page 4 / 4' and a 'Go' button. The main content area displays the newspaper's masthead and multiple columns of text, including sections like 'SPORTSMAN'S NIBBLE', 'FINANCE AND COMMERCE', and various advertisements. The interface also features a search bar and a list of results on the right side.

While reading the entire content of a single newspaper issue is usually impractical, try and read at least a little of the articles around a keyword result. Contextual reading facilitates nuanced historical thinking. Contextual questions help you make better arguments and make newspapers more convincing evidence within your larger research questions.

### b. How Many Databases Should You Search?

Contextualized searching also means never rely solely on one digitized newspaper archive. Every digitized collection contains a different set of papers and works slightly differently. Relying on one digitized archive means your data is more likely to contain blindspots, be incomplete or asymmetric. Depending on the scope and scale of your research you can consult three digitized collections or fifteen digitized collections. For a small or medium sized project, a good practice is to consult two national databases and one regional or state database. If you have the chance to read newspapers in more than one medium, you should take it. While reading newspapers on paper or microfilm is rare in a digitized post-pandemic research world, reading on microfilm allows contextual reading in a way keyword searching never can.

### c. Treat Your Findings Like Data: How to Read Efficiently

While you read through search results, treat your findings like data. Know which data points are important, and which you can disregard. Not every keyword result will be helpful. Work to strike a balance between reading for depth and context, and reading with data-driven efficiency. The more familiar you become with digitized newspapers, and the more you learn about your research topic, the easier it will be to discern which results are helpful. As you collect data, make sure to track which database you found a particular result

in. This not only increases the academic credibility of your work but also ensures you can easily trace your footsteps back to the original source if needed. It can be helpful to keep a separate document or spreadsheet to track longer articles that provide good source quotes or results you know you'll want to revisit again. Some researchers prefer transcribing extended quotations, but simply tracking the title, paper, date, with a link to the original article is also sufficient. While this may seem like more work during the research process, later on when you are searching for that one quote you just can't quite remember, an extended quotation document, index, or spreadsheet will come in handy.

## **5. Towards a Representative Dataset: Limitations of Digitized Research**

Finally, recognize that digitized newspaper archives are incomplete. You can't search for everything, and that should never be your intention. Using digitized sources with conscientious research practices and diligence creates representative, but always incomplete and imperfect, data. If you want to do a more thorough search, consider contacting local historical societies that might have archives of local historical newspapers. Historians and librarians are often happy to talk on the phone and look something up on your behalf!

### **a. Are Digitized Sources Neutral? Considering Database Bias in Digitized History**

As a digital researcher, considering the ethical implications of digitized history is necessary. The first step is recognizing that digitized newspapers are not exhaustive. Of the hundreds of thousands of extant newspapers, only a small portion has been digitized. Digitization is an expensive and laborious process. Libraries often have to invest in expensive scanning equipment, and spend hours photographing individual pages and transferring images from microfilm. As a result, understand that the papers you are reading come from institutions with the time and money to facilitate their digitization.

Questions of privilege and access are intertwined in all digital primary source research. Who chooses what gets to be digitized? And, what primary sources are more likely to be digitized? The ever increasing institutional paywall and corporatization of digitized collections means many collections center privileged voices while excluding marginalized groups both from accessing the collections and being included in their catalog. Knowing this, as a researcher you should consider: in what ways do my research practices unintentionally center privileged voices? While we cannot change a database collection or its software interface, we can focus on conscientious, contextual research practices that are fully informed by the limitations of digitized sources.

### **b. Further Readings**

If you are interested in the limitations of digital sources, consider the following readings for further reference.

Lara Putnam, "The Transnational and the Text-Searchable: Digitized Sources and the Shadows They Cast," *The American Historical Review*, Volume 121, Issue 2, (April, 2016), 377–402

Katherine Preston, "Digital Databases for English Language Newspapers in the United States," *Nineteenth Century Music Review*, Vol. 13, (2016), 405-419.

## **Section II**

### **1. Turning Your Data Into a Map**

Now that you have a usable database, how do you turn that data into an effective map and what software should you use?

### **a. Mapping Preparation: Cleaning Up Your Data**

Before you move onto map-making you need to make sure your data is standardized. This process is known as data cleaning or data prep. A standardized data set ensures your data will show up on your map and you won't run into unnecessary hurdles in later stages. An effective map starts from a clean and standardized database.

If your data involves specific dates consider: Does my dataset use a standardized date format? Either MM-DD-YYYY or YYYY/MM/DD or some variation. If not, you can easily fix this in google sheets by clicking format → number → More formats → More date and time formats → click the format you want and hit apply.

If your data utilizes repeated words such as places, names, or pieces of music make sure every iteration of that word has the exact same spelling (including accents, dashes, spacing, and capitalization). A mapping software will read irregularities between terms as separate items, creating unnecessary categories in your map.

Use Control+F to find similar pieces of data (addresses, names, venues, institutions, etc.) and ensure that they're all entered correctly. Note that you shouldn't use the entire term ("Theatre des Champs-Elysees") because if there's a typo in one entry, then it won't be found. Rather, use what seems like a unique part of the name ("Elys") to check on the rest of the name. If you find multiple spellings, use the find and replace feature to standardize. Besides for spelling irregularities, check for extra spaces, differing uses of punctuation, accent marks, etc...

When possible, each column in your data set should represent one variable. Mapping softwares work best when they can easily identify the function of every column. Separate cities and states into separate columns, and put longitude and latitude in separate columns. If your dataset includes pieces of music, separate the composer and piece name into separate columns. You can easily divide data using the text to column feature in google sheet or excel (data → split text to columns). If you haven't already added geographical coordinates to your dataset, do it now. I would recommend including both the place name (city/state, or address) and geographical coordinates (lat/long) in your dataset.<sup>1</sup>

Lastly consider the structure of your database: What is the purpose of each column in your data set? Do you want to include any further classification in your database? It is important to understand that the structure of your database directly correlates to the visual presentation of your map. If you want to color code and filter by performances of a specific composer, you will need a separate column for composers. Adding classification to your data can be extremely beneficial at this point. You may want to classify your data by type of concert, type of repertoire, type of event, etc... Classifying your data allows for easy filtering once you begin making your map.

### **b. Considering Copyright**

As you begin to approach the map-making stage, it is time to consider copyright and citation issues. Firstly, does every line in your dataset link to a citation? Researchers in the humanities and social sciences cite according to the Chicago Manual of Style. If you want to use a different citation style you can, but make sure your citations are consistent. Choose one style and stick to it.

Secondly, if you intend to use any images or media in your map, make sure the works are public domain or you have obtained usage rights. Any image you use, including public domain images, should have a full citation. If you intend to use any images from archival collections, especially digitized archival collections,

---

<sup>1</sup> If you are working with Tableau you do not need lat/long coordinates since Tableau calculates location based on City, State, or Zip code.



make sure you have permission to use the images. Do not assume media is public domain. If you are unsure, email the archival collection or respective body, state how you intend to use the images in questions and ask about their image reproduction policies. Copyright questions also apply to any custom basemaps used in your map. Make sure the map is public domain, and you've included a full citation.

### c. Working Backwards

Before you begin making a map, think back to your research question(s). What is your map trying to show, argue, offer access to? The answer will help you decide how to organize your data, how to visualize it, and how to contextualize it. You'll need to ask other questions, too. As a test, choose 5-10 pieces of data and hand-draw a very rough map that includes a mock-up of how the data will look. When a user clicks on a marker or an area, what will they see in the resulting pop-up window? Do you want to embed media into your map? If you plan on presenting your data in layers, what would ideally be included in each layer? Keep in mind that you don't need to limit yourself to a single map. You may find your data requires several different maps each with a different focus and argument. After answering these questions, you'll be able to approach the next few steps of the process with a clearer sense of purpose and design.

### d. Which Mapping Software Should You Use

Luckily, the emerging prevalence and popularity of digital humanities means you have multiple options. Read through the following table and decide which software makes the most sense for you. Look back at the paper mock-up you made, if you visualized a complex map with intricate pop-ups/tooltips, and multiple time sliders or color gradients, ArcGIS might be the right tool for your project! If you don't have access to ArcGIS, try using QGIS or Tableau. QGIS has complex mapping skills similar to ArcGIS, but Tableau is more web-friendly and easily shareable. If you are just starting out with digital maps and want to put together a simple project, Palladio or StoryMap JS might be the right tool for you!

### The Pros and Cons of Major Mapping Softwares

Software Name	Access	Pros	Cons
ArcGIS	Institutional	Industry standard, extremely versatile. If you have access, you should use it.	Learning curve is steeper than other mapping platforms
QGIS	open-source	Open source alternative to ArcGIS.	No web option, maps are not as easily shareable. No comparable Story Map feature like ArcGIS.
Tableau	Free option	Interface is intuitive but also capable of processing complex data. Easily shareable.	Tooltip capability is limited, especially if you have multiple events at the same location. Ultimately not as sophisticated as ArcGIS
Palladio	free	Great for first time map makers. Simple and easy to put together	Unable to make complex or highly customized maps.
StoryMap JS	free	If you don't have access to ArcGIS and want to make a story map, try this platform. Extremely	Map is not customizable. Not the right platform for complex, multidimensional maps.

		easy, no mapping skills required.	
--	--	-----------------------------------	--

## 2. What Makes a Map Effective?

Once you have decided which software to use, you need to consider what makes a map effective. Good maps have a clear purpose. They synthesize large, complex datasets into a clear visual argument. A good map is nuanced, but not overly complex. The argument your map makes should be clear with a little explanation. Maps with too many symbols, or legends can be confusing to a reader. Therefore, as you begin the map-making process remember it is okay to make more than one map. In fact, your dataset probably requires more than one map - each with its own specific sub focus.

### a. Maps as Arguments

Most maps make arguments. Consider: What argument does my data make? Your argument may not be clear until you visualize your data into a preliminary map. You may find your data doesn't make an argument. If that is the case, you will need to consider why and decide whether you need to refine the focus of your map or of your dataset. Just as an essay, a podcast, or a video can present an argument - a map can also present an argument. Show your map to a friend or colleague and explain your argument. Is your argument clear? Is it easily understandable? Is it comprehensible by a third party with little to no background knowledge in your topic?

Furthermore, it is important to understand that maps are a subjective interpretation of a dataset. As Mark Monmonier argues in his book *How To Lie With Maps*, "a simple map is but one of an indefinitely large number of maps that might be produced for the same situation or from the same data."<sup>2</sup> Make multiple maps from your data. How are the maps different? In what ways do your cartographic choices create bias or work to serve your argument?

### b. How Do You Map Sound?

Since this is a music focused guide, the specificities of mapping sound must be considered. In what ways is mapping sound different from mapping events? How can you map sound in a visual map?

### c. Six Functions of Musicological Maps

Musicological maps can be pedagogical, research focused, or a form of activism. Professor Louis Epstein argues that musicological maps generally fit into one of six functions:

1. Maps for pedagogy: Immersive/Affective Experience
2. Pedagogical storytelling
3. New research insights and arguments
4. New research questions
5. Archive/Database interface
6. Activism and Public Outreach

Consider that the best, and most effective maps, often fit within multiple categories and serve more than one purpose.

### d. Considering the Viewer Experience

As you begin designing your map you will need to consider design principles. While your dataset may be large or complex, maps with too many symbols, legends, or color schemes can easily overwhelm or confuse

---

<sup>2</sup> Mark Monmonier, *How To Lie With Maps*, (University of Chicago Press: 2018), 2.



viewers. Consider the experience of a viewer looking at your map for the first time. Your map should strike a balance between being exploratory without being overwhelming. If you want to convey multiple facets of your dataset, making multiple maps might be the best way to convey complex information in an accessible manner. When at all possible try and make accessible design choices. Allow for custom scaling, and customizable basemaps in case viewers have different accessibility needs.

#### e. Examples of Effective Digital Maps

Now, let's look at some examples of effective digital maps. If you want a full list of resources, check out the [Digital Humanities Models](#) page on musicalgeography.org.

### 3. Mapping in ArcGIS

This section is a tutorial section, designed to answer your questions and help you make the map(s) you want.

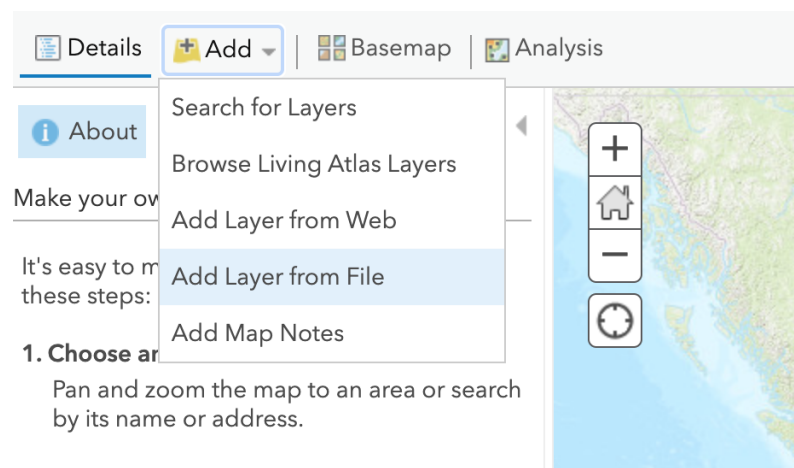
#### a. ArcGIS Pro vs. ArcGIS Online

The first step is deciding whether to use ArcGIS Online or ArcGIS Pro. Unless you want to make extremely complex maps, you should use ArcGIS Online. If you start using ArcGIS Online and realize the platform is too limited, you can always switch to ArcGIS Pro at a later date. While both programs have similar capabilities, ArcGIS Pro is a desktop program that allows for more complex analysis. ArcGIS Online is an abbreviated version of ArcGIS Pro. It has the same core features, but is an easily shareable, web-based platform. If you do decide to use ArcGIS Pro, be aware that ArcGIS Pro only works on a Windows operating system.

#### b. Basics of ArcGIS Online

To begin, create a new map in ArcGIS Online. To add data, click Add → Add Layer from File. You should download your data as a CSV file for easy upload.

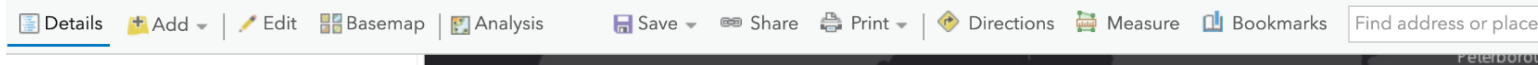
Home ▾ My Map



Once you upload your data, use the symbols next to your layer to refine your map.



These symbols allow you to (from left to right): show legend, view data, change map type, filter data, enable data clustering, or perform data analysis.



You can also use the menu bar at the top to add another layer, change the basemap, or share your map.

#### Tutorials:

Esri's [Learn ArcGIS](#) site is a great resource for ArcGIS questions or tutorials. If you are just starting out, try the following tutorials:

1. [Get Started with ArcGIS Online](#)
2. [Map a Historic Cholera Outbreak](#)
3. [Get Started with ArcGIS Online Youtube Playlist](#)

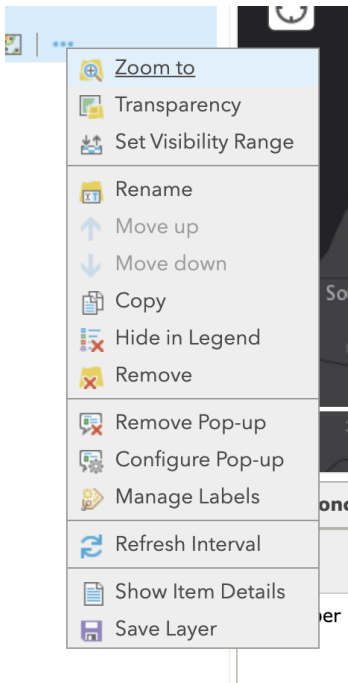
#### c. Resources and Advanced Tutorials for ArcGIS Online

#### **Table of Contents For This Section:**

1. [How to Configure Pop-ups and Tooltips](#)
  - a. [Adding Images to Tooltips](#)
  - b. [Adding Youtube Clips to Tooltips](#)
2. [Creating Hosted Feature Layers from Google Sheets](#)
  - a. [Searching Feature Layers](#)
  - b. [Creating Time Aware Feature Layers for a Time Slider](#)
3. [Adding Custom Basemaps Using Mapbox](#)
4. [Making Maps Public](#)

#### **How to Configure Pop-ups and tooltips:**

Click on the three blue dots to the far right under the title of your layer. Then scroll down to “configure pop-up.” This will allow you to edit the info window.



Within the “Configure pop-ups” Menu, selecting “Configure attributes” will allow you to select which information you want to see and arrange each category in the order you like. You can also edit how each category title will appear.

#### **Adding Images to Tooltips:**

1. Make sure that you’ve entered an image URL in the database for each venue/event that you want to map. These can be URLs from external sites, or from a PUBLICLY shared Google Photos album.

2. Export and upload the CSV as normal.

3. Under the “Configure Pop-ups” menu, scroll down to “Pop-Up Media.”

Click Add Media→ Image.

4. In the window that appears, the title and caption are optional and up to you. For URL and Link, click the small plus sign to the right of each box and scroll down to select “Image {ImageLink}.” This connects the info window to the Image Link column of the database, where you pasted the URL.

5. Hit OK to save within the window, and then make sure to click OK again in the “Configure Pop-Up” window to save your changes.

6. If you want to change the image title, etc., click the small gear icon under the Pop-Up Media section to make edits. Note that unless there’s a separate column for it in the database, any words that you write will be the same across all points on the map.

### **Adding Youtube Clips to Tooltips:**

In a “Media” field, include the following code around a Youtube link:

```
<iframe width="280" height="157.5" src="https://www.youtube.com/embed/RmfdXF7zWII"
frameborder="0" allowfullscreen></iframe>
```

### **Creating Hosted Feature Layers from Google Sheets:**

1. To create a hosted feature layer, go to your arcgis online “content” page and clicking “add item” → “from cloud drive.”
2. Next, go to the drop-down menu that says “CSV” and select your desired file type, presumably a google sheet, search for and select your desired file, and follow the instructions from there.
3. Once this feature layer is created, you can add it to a map by going to add → search for layers.
4. A hosted feature layer does NOT automatically sync with google sheets, and a map using a hosted feature layer does NOT automatically sync with changes made to that hosted feature layer. In order to sync a map with a hosted layer automatically, you can click “more options” (the blue ellipsis) on the layer from within the map that you’ve added it to and then adjust the refresh interval.
5. In order to sync a google sheet based hosted layer with its original sheet, go to the hosted layer and click “update data” → “overwrite entire layer”. Once this is done, the map will refresh automatically with the new data if it has been set to do so. (See point above)

### **Uploading a Live Google Spreadsheet (that refreshes automatically) to ArcGIS.com**

See: <https://www.youtube.com/watch?v=jG37zPui1r4>

### **Searching Feature Layers:**

1. First, make your feature layer that you want to search within a [hosted feature layer](#)
2. Then, in the web-app editor, go to widgets, hover over the search widget, and click the pencil icon to configure this widget.
3. Click “add search source” and select your new hosted feature layer.
4. Select your desired search fields (which field you want the users to be able to search) and your desired display field (the field which will be displayed as possible options when the user is selecting a result to display from their search) Adjust any other options as desired.

### **Creating Time Aware Feature Layers for a Time Slider:**

1. First, you must make sure that the desired layer has all of the dates in the **same** format - ambiguity is not allowed.
2. Select your desired layer in the map and select “more options” (the blue ellipsis) → “configure pop-ups” Then, create a hosted layer and make it time-enabled.  
<https://doc.arcgis.com/en/arcgis-online/create-maps/configure-time.htm>
3. If you get an error message, download the data as a CSV and re-upload it to create the hosted feature layer that is time-enableable
4. The time slider should show up automatically on the map viewer. To add it to the web-app, simply add the time-slider widget.

## Adding Custom Basemaps Using Mapbox:

If you want to add a custom or historical basemap to your project, you can do so using Mapbox. Both the [David Rumsey Map Collection](#) or the [NYPL Map Warper](#) are good resources for high quality, public domain historical maps.

1. Once you find the map you want to use, download the map as a GEOTiff file.



### Map

Original TIFF: [Download original unwarped TIFF](#)

Warped GeoTIFF: [Download warped GeoTIFF](#)

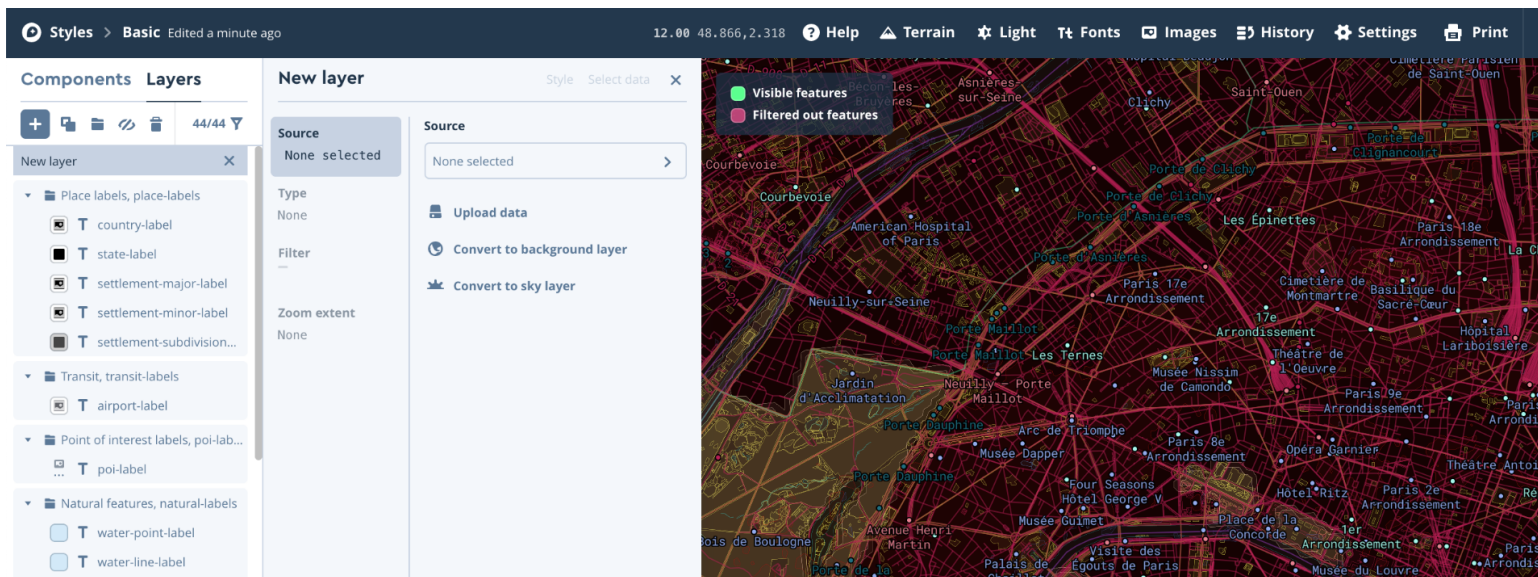
Warped PNG: [Download warped PNG](#) (and associated [.aux.xml](#) file)

KML: [Download KML file](#)

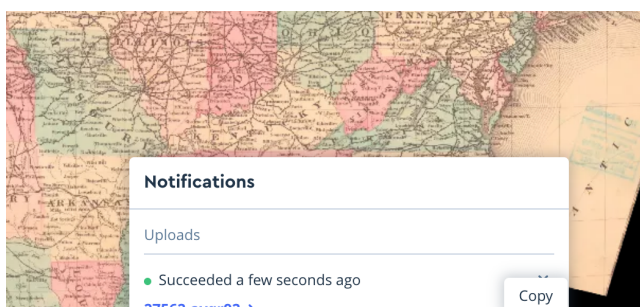
WMS: [WMS Capabilities URL](#) (for JOSM )

Tiles (Google/OSM scheme): <http://maps.nypl.org/warper/maps/tile/27562/{z}/{x}/{y}.png>

2. Then, make a free account on [Mapbox](#), and go to [Mapbox Studio](#).
3. In Mapbox Studio, click New Style → Customize Basic. Then click Layers → Upload Data → New Tileset.



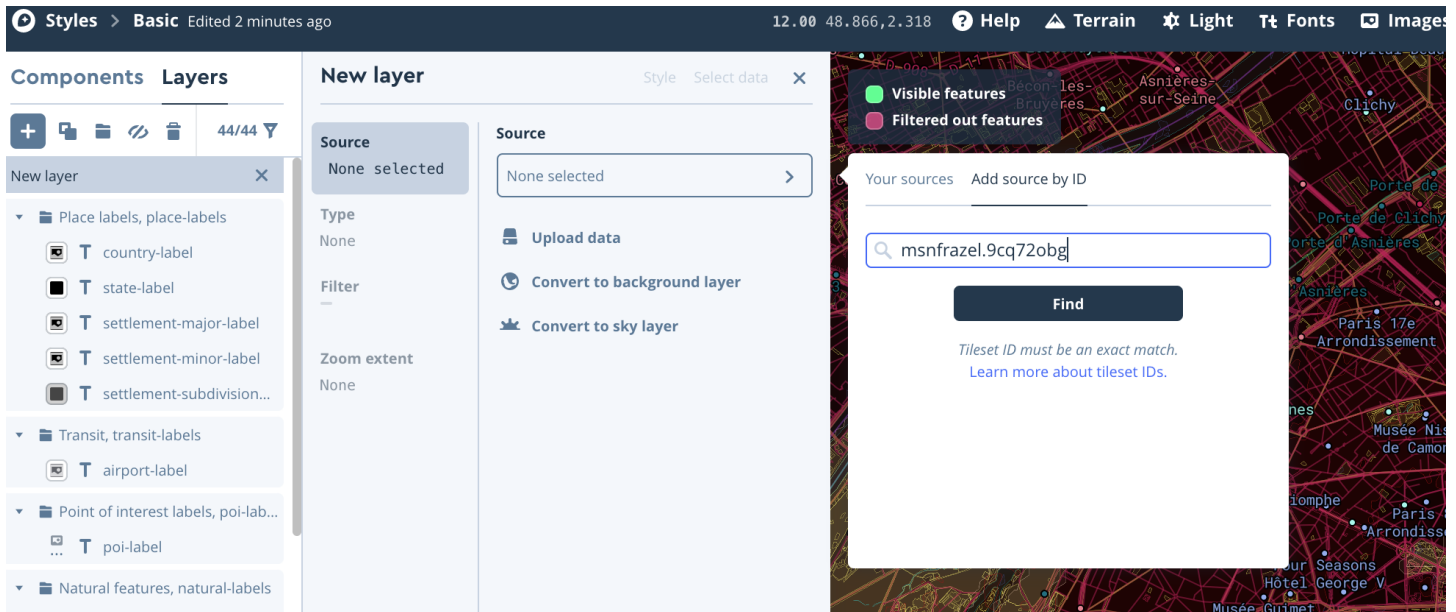
4. Then drag and drop your GeoTIFF file you previously downloaded and wait for it to upload. Your file may take several minutes to upload.



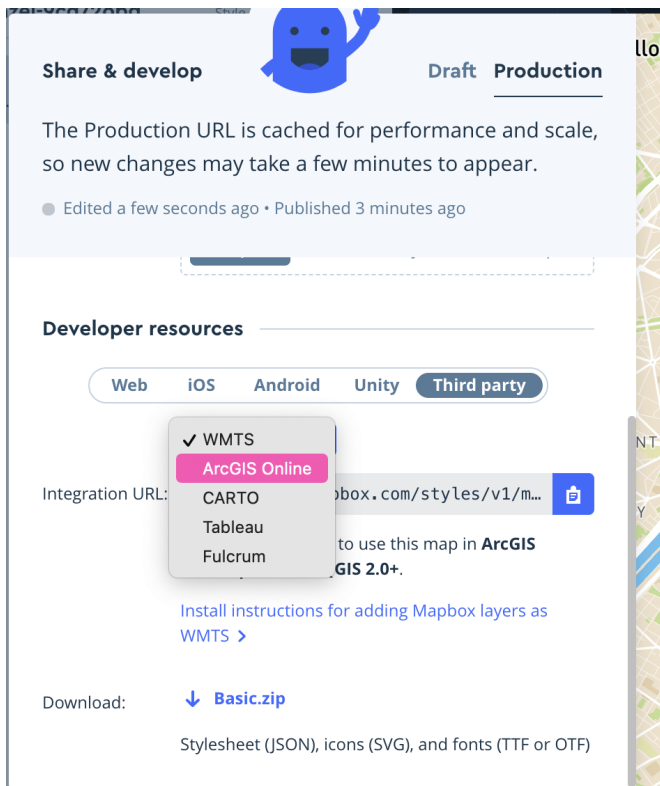
5. Once your file has uploaded, then copy the file link that pops up in the bottom right.

6. Now click Layer → New Layer → Source → None Selected → Add Source by ID → Paste the file link you copied in step five and your map should appear.





- Now click Share → Third party → choose ArcGIS Online in the dropdown menu and copy the integration URL



- Next, navigate back to ArcGIS Online. Click Add Layer → Add Layer from Web → Select A Tile Layer → Enter the URL you copied from Mapbox. Add Layer and Your map should appear as a basemap.

**Add Layer from Web**

What type of data are you referencing?

A Tile Layer

The tile layer URL must contain the level, column and row placeholders. The subdomain placeholder is optional.  
(e.g., https://{subDomain}.domain.com/{path}/{level}/{col}/{row}.jpg)

URL:

☒ Use as Basemap

Title:

Credits:

Extent:

Having trouble displaying your Tile layer? Help us improve this site by sending us the URL via the Contact Esri link.

### **Making Maps Public:**

In order to make a map public, the layer that you upload needs to be made public (Share→ Everyone), right when you upload it. Then the map also needs to be made public once you're done (again, Share→ Everyone).

#### **d. Troubleshooting: What to Do When Your Map Looks Different Than You Imagined**

Mapping is a process of trial and error. Inevitably your map will look different than you imagined. Don't expect the first map you make to be your final map. The process of map-making is instructive and the more you map, the better you will get at it. When you get frustrated or stuck, reach out and ask questions. Ask a librarian, peer, or professor for help or utilize one of the many GIS tutorials available on the internet.

#### **e. Utilizing ArcGIS StoryMaps**

Once you've completed your map(s), embedding your work in a story map is a great way to share your work. A StoryMap allows you to add text, and media to your map creating a guided tour for viewers.

To get started, check out the following tutorials:

[Get Started with ArcGIS StoryMaps](#)

[Quick Tips for Mastering the ArcGIS StoryMaps Builder](#)

[Sara Dale's Instructional StoryMap](#)

#### **f. Creating ArcGIS Dashboards**

Another great way to showcase your map is through an ArcGIS Dashboard. An ArcGIS Dashboard allows you to combine multiple maps, and filters into an interactive dashboard. ArcGIS Dashboards are more data-focused than a StoryMap and would be a good choice if you don't want to add a lot of supporting text to your map.

The [John Hopkins Covid-19 Dashboard](#) is a great example of how ArcGIS Dashboards synthesize multiple and complex datasets into a single, easily accessible interface.



If you are interested in making your own ArcGIS Dashboard, try the following tutorials:

[Create Your First Dashboard Using ArcGIS Dashboards](#)

[Five Tips to Improve Your ArcGIS Dashboards](#)

## 10. Resources for Other Mapping Softwares

If you are interested in using other mapping softwares besides ArcGIS, see the following resources.

Resources for Palladio:

[Palladio Tutorials and FAQ](#)

Four Part Youtube Tutorial from the Raynor Digital Scholarship Lab. [Part 1](#), [Part 2](#), [Part 3](#), [Part 4](#)

[Getting Started with Palladio](#)

Resources for Tableau:

[Getting Started with Tableau Public](#)

[Make a Map with Tableau](#)

[Tableau Mapping 2: Geocoding, Layers, and Basemaps](#)

[Tableau Training Videos](#)

QGIS:

[QGIS Help and Training](#)

## Ensuring Digital Longevity: Is Digital Work Really Permanent?

Digital projects tend to be imbued with a false sense of permanence. It is easy to think digital projects will be available forever. The reality, of course, is more complex. As our collective digital landscape and the software it is built on continually evolves, broken links become inevitable. Consider your future intentions for your project? If you want your project to remain accessible, regular maintenance to the site and project is essential. Too many good digital humanities projects are inaccessible due out of date software or broken links. Case in point see [Digital Harlem](#), or [The Roaring Twenties](#).



## **Conclusion**

Congratulations, you've finished reading the guide. Hopefully you now feel equipped to make your own maps and experiment with digitized newspaper research. In the end this guide is a starting point. Digital research projects require individual trial and error. You will make mistakes. Your map won't turn out how you intended or you will need to re-do your data structure. While digital maps help us make new scholarly arguments, they also make us better historians, musicologists, and students in the the process.

## **Authors Note**

This guide was written by Maeve Nagel-Frazel under the supervision of Professor Louis Epstein during the summer of 2021. Previous work on this guide was started by [members of the Musical Geography Project](#) from 2015-2019. Please contact the authors at [Maeve.Nagel-Frazel@outlook.com](mailto:Maeve.Nagel-Frazel@outlook.com) or [epstein@stolaf.edu](mailto:epstein@stolaf.edu) with any comments or questions.